Soil-air interface.

Using the functionality of COMETS, one can design simulations which go beyond in silico corollaries of lab experiments to make predictions for environments mimicking natural ecosystems, which is a necessary step for understanding natural ecology from first principles. In this example, we consider a simulation of a soil environment. We use source-and-sink functions to model how a root provides organic acids to the environment while removing ammonia (Huang et al 2014 Botany). While we restrict the root functionality to a source/sink, one could use functionality demonstrated above, for example extracellular enzymes, to generate feedback loops between microbe-produced metabolites and root exudation. We use fixed metabolite concentrations to mimic the largely unchanging air interface above a root, which generates an oxygen gradient. Additionally, since soil is characterized by strong spatial structure with many impenetrable barriers that localized interactions (Nunan 2017), we place "rock" barriers throughout the simulation area. A more complex simulation could use varying diffusion constants for metabolites, as described in a previous protocol (Virtual Petri Dish). Similarly, we use standard diffusion of biomass, but this could be changed to use pushing force or non-linear diffusion for a potentially increased realism.

In [2]:
```python
import cobra
import cobra.test # for the ijo1366 model
import sys
import copy
import numpy as np
sys.path.append("/home/jeremy/Dropbox/work_related/harcombe_lab/segre/cometspy")
import cometspy as c
```

Para nuestro proyecto, utilizaremos Escherichia coli (modelo iAF1260), Pseudomonas putida (modelo iJN1463) y Saccharomyces Cerevisiae (modelo iMM904), recuperados de la base de datos BIGG.

Cambiamos los bounds de las funciones objetivo de los modelos:

In [3]:
```python
model_dir = "./modelos" # model location
iAF = cobra.io.read_sbml_model(model_dir + '/iAF1260.xml')
iAF.reactions.get_by_id('BIOMASS_Ec_iAF1260_core_59p81M').lower_bound = 0
iAF.reactions.get_by_id('BIOMASS_Ec_iAF1260_core_59p81M').upper_bound = 1000

iJN = cobra.io.read_sbml_model(model_dir + '/iJN1463.xml')
iJN.reactions.get_by_id('BIOMASS_KT2440_WT3').lower_bound = 0
iJN.reactions.get_by_id('BIOMASS_KT2440_WT3').upper_bound = 1000

iMM = cobra.io.read_sbml_model(model_dir + '/iMM904.xml')
iMM.reactions.get_by_id('BIOMASS_SC5_notrace').lower_bound = 0
iMM.reactions.get_by_id('BIOMASS_SC5_notrace').upper_bound = 1000
```

Luego se convierten estos modelos al formato de COMETS. Se utilizan funciones helper para dos cosas: a) Asegurar que el modelo en COMETS no confunda las reacciones de "sink" con las de exchange, ya que en COBRA están desbalanceadas y por tanto se parecen a las de exchange, y b) abrir todos los bounds de las reacciones de exchange, para que COMETS controle la composición del medio.

In [4]:
```python
iAF_comets = c.model(iAF)
iAF_comets.ensure_sinks_are_not_exchanges()
iAF_comets.open_exchanges()

iJN_comets = c.model(iJN)
iJN_comets.ensure_sinks_are_not_exchanges()
iJN_comets.open_exchanges()

iMM_comets = c.model(iMM)
iMM_comets.ensure_sinks_are_not_exchanges()
iMM_comets.open_exchanges()
```

El mundo que se simulará tendrá dimensiones de 30x30. El eje de la izquierda (x = 0) corresponde a la raíz, y el eje superior (y = 0) corresponde al aire. La biomasa y las rocas se distribuyen en el resto del grid. Donde hayan rocas no puede haber ni biomasa ni metabolitos, así que seleccionamos esos lugares primero. Para esta simulación, se generarán 3 rocas con un un tamaño medio de 1 cuadraditos. Para generar las piedras se utiliza la función helper grow_rocks.

In [5]:
```python
from cometspy.utils import grow_rocks, pick_random_locations

grid_size = 5 # 100
n_rocks = 3 # 70
rock_locs = grow_rocks(n = n_rocks, xrange = [1,grid_size-1],yrange = [1,grid_size-1],mean_size = 1)
```

Cada especie será plantada en 20 lugares sin sobreponerse. Para esto se utiliza la función helper pick_random_locations, la cual toma como argumento una tupla generada anteriormente que marca lugares "prohibidos", como los cuadrados donde se encuentran las rocas.

Generamos una copia de rock_locs para no cambiarla accidentalmente, y la llamamos forbbiden_locs:

In [6]:
```python
import copy
```

```
import copy
forbidden_locs = copy.deepcopy(rock_locs)
```

Ahora elegimos al azar los lugares para cada especie, y los vamos añadiendo a la lista forbidden locs para que no se sobrepongan:

In [7]:
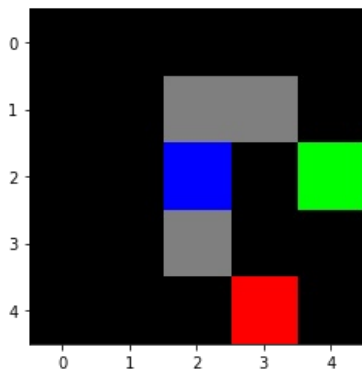```
founders_per_species = 1 # 60
iAF_locs = pick_random_locations(n = founders_per_species,
                                 xrange = [1,grid_size], yrange = [1,grid_size],
                                 forbidden_locs = forbidden_locs)
forbidden_locs.extend(iAF_locs)
iJN_locs = pick_random_locations(founders_per_species, [1,grid_size],[1,grid_size], forbidden_locs)
forbidden_locs.extend(iJN_locs)
iMM_locs = pick_random_locations(founders_per_species, [1,grid_size],[1,grid_size], forbidden_locs)
forbidden_locs.extend(iMM_locs)
```

Para graficar los lugares utilizamos matplotlib:

In [8]:
```
from matplotlib import pyplot as plt
initial_image = np.zeros((grid_size,grid_size,3))
for rock in rock_locs:
    initial_image[rock[0],rock[1],0:3] = 0.5
for loc in iAF_locs:
    initial_image[loc[0],loc[1],0] = 1
for loc in iJN_locs:
    initial_image[loc[0],loc[1],1] = 1
for loc in iMM_locs:
    initial_image[loc[0],loc[1],2] = 1
plt.imshow(initial_image)
```

Out[8]: <matplotlib.image.AxesImage at 0x262dc4494f0>



Generamos el layout y agregamos las rocas:

In [9]:
```
layout = c.layout()
layout.grid = [grid_size,grid_size]
layout.add_barriers(rock_locs)
```

```
building empty layout model
models will need to be added with layout.add_model()
```

Setteamos las poblaciones iniciales para cada especie, con esto los modelos están listos y los añadimos al layout:

In [10]:
```
iAF_comets.initial_pop = [[loc[0],loc[1],1e-8] for loc in iAF_locs]
iJN_comets.initial_pop = [[loc[0],loc[1],1e-8] for loc in iJN_locs]
iMM_comets.initial_pop = [[loc[0],loc[1],1e-8] for loc in iMM_locs]

layout.add_model(iAF_comets)
layout.add_model(iJN_comets)
layout.add_model(iMM_comets)
```

Añadimos los metabolitos que estarán inicialmente disponibles en el ambiente. Usamos la función helper add_typical_trace_metabolites() para las trazas típicas. Bajamos el valor del oxígeno dado que la idea es que el que esté disponible difunda desde la atmósfera. Añadimos algunos metabolitos que no se añadieron con la función helper:

In [11]:
```
layout.add_typical_trace_metabolites()
layout.set_specific_metabolite('o2_e',0.00001)
layout.set_specific_metabolite('hco3_e',1000)
```

```python
layout.set_specific_metabolite('co2_e',1000)
layout.set_specific_metabolite('h2_e',1000)
layout.set_specific_metabolite('so3_e',1000)
layout.set_specific_metabolite('nh4_e',0.000001)

layout.set_specific_metabolite('glc__D_e',0.0000001)
layout.set_specific_metabolite('meoh_e',0.00000001)
layout.set_specific_metabolite('cys__L_e',0.0000001)
layout.set_specific_metabolite('4abz_e',0.0000001)
layout.set_specific_metabolite('nac_e',0.00000001)
```

Para la capa de aire, dejamos el oxígeno en un valor constante. Al fondo también dejamos al oxígeno en un valor fijo e igual a 0, para simular el efecto de difusión. De manera similar, hacemos lo mismo con el amoniaco y la raíz en la parte izquierda:

In [12]:
```python
# set static media of O2 and CO2 at the top and bottom-- the "air" and continuous loss of O2 downwards
for x in range(grid_size):
    layout.set_specific_static_at_location('o2_e', (x,0), .0001) # top
    layout.set_specific_static_at_location('o2_e', (x,grid_size-1), 0.) # bottom
    layout.set_specific_static_at_location('co2_e', (x,0), .0001)

for x in range(grid_size):
    layout.set_specific_static_at_location('nh4_e', (0,x), 0.0)
```

La raíz consume todo el amoniaco, pero es una fuente de acidos orgánicos y metanol para el ambiente. Asumiendo una tasa fija:

In [13]:
```python
for x in range(grid_size):
    layout.set_specific_refresh_at_location('cit_e', (0,x), .000001)
    layout.set_specific_refresh_at_location('meoh_e', (0,x), .000001)
    layout.set_specific_refresh_at_location('succ_e', (0,x), .000001)
```

El layout y los modelos están listos, ahora setteamos los parámetros de la simulación:

In [14]:
```python
params = c.params()
params.set_param('timeStep', 0.1)
params.set_param('maxCycles', 1000)
params.set_param('maxSpaceBiomass', 10)
params.set_param('deathRate', 0.0001) # die at rate of 1/10000 per hour
params.set_param('writeBiomassLog', True)
params.set_param('BiomassLogRate', 500)
params.set_param('writeMediaLog', True)
params.set_param('MediaLogRate', 500)
params.set_param("writeFluxLog", True)
params.set_param("FluxLogRate", 500)
params.set_param('numRunThreads', 3)
params.set_param('defaultKm', 0.000001)
```

Ahora creamos el objeto de la simulación y la corremos. Ojito que se demora y el pc empieza a despegar.

In [15]:
```python
sim = c.comets(layout, params)
sim.set_classpath("concurrent", "/opt/colt/lib/concurrent.jar")
sim.set_classpath("colt", "/opt/colt/lib/colt.jar")
sim.set_classpath("lang3", "/opt/commons-lang3-3.9/commons-lang3-3.9.jar")
sim.set_classpath("jmatio","/opt/jmatio/lib/jmatio.jar")
sim.set_classpath("math3","/opt/commons-math3-3.6.1/commons-math3-3.6.1.jar")
sim.set_classpath("bin","/home/jeremy/Dropbox/work_related/harcombe_lab/segre/jars/comets_2.10.0.jar")
sim.set_classpath("gurobi","/opt/gurobi900/linux64/lib/gurobi.jar")
sim.set_classpath("jdistlib", "/opt/jdistlib-0.4.5-bin.jar")
sim.run(False)
```

```
Running COMETS simulation ...
Done!
```

In [16]:
```python
print(sim.run_output)
print(sim.run_errors)
```

```
-script
running script file: C:\Users\ronal\Desktop\Simulacion_suelo_testing/.current_script_0x262dcb5c6a0
Current Java version: 17.0.1
Parameters file .current_global_0x262dcb5c6a0 loaded.
Parameters file .current_package_0x262dcb5c6a0 loaded.
Loading layout file '.current_layout_0x262dcb5c6a0'...
null\COMETS_manifest.txt (El sistema no puede encontrar la ruta especificada)
Unable to initialize manifest file.
Continuing without writing manifest file.
Found 3 model files!
Loading '.\iAF1260.cmd' ...
```

```
Academic license - for non-commercial use only - expires 2021-12-02
Academic license - for non-commercial use only - expires 2021-12-02
Done!
 Testing default parameters...
Done!
Optimizer status code = 5 (looks ok!)
objective solution = 395.7352921962825
Loading '.\iJN1463.cmd' ...
Academic license - for non-commercial use only - expires 2021-12-02
Academic license - for non-commercial use only - expires 2021-12-02
Done!
 Testing default parameters...
Done!
Optimizer status code = 5 (looks ok!)
objective solution = 237.06607191111198
Loading '.\iMM904.cmd' ...
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Done!
 Testing default parameters...
Done!
Optimizer status code = 5 (looks ok!)
objective solution = 133.8587770175764
Constructing world...
Done!
medialist       12dgr160_e      12dgr180_e      12ppd__R_e      12ppd__S_e      13BDglcn_e      13dampp_e
14glucan_e      15dap_e 1ag160_e        1ag180_e        1ag181d9_e      1ag182d9d12_e   23camp_e        23ccmp_e
23cgmp_e        23cump_e        23dappa_e       25dkglcn_e      26dap__M_e      2ameph_e        2ddglcn_e
2dhglcn_e       2hb_e   2m35mdntha_e    2mbac_e 2mbald_e        2mbtoh_e        2mppal_e        2phetoh_e
34dhbz_e        34dhcinm_e      34dhpac_e       34dhphe_e       35dnta_e        3amp_e  3c3hmp_e        3cmp_e
3gmp_e  3h4atb_e        3hcinnm_e       3hpppn_e        3mb_e   3mbald_e        3mop_e  3oxoadp_e       3ump_e
4abut_e 4abz_e  4hbz_e  4hoxpacd_e      4hpro_DC_e      4hpro_LT_e      4hptn_e 4oxptn_e        5aop_e  5aptn_e 5
dglcn_e 5g2oxpt_e       5mcsn_e 5oxpro_e        6atha_e 6hnac_e 8aonn_e LalaDgluMdapDala_e      LalaDgluMdap_e
LalaLglu_e      Nbfortyr_e      Ncbmpts_e       R3hdec4e_e      R_3h4atba_e     R_3h6atha_e     R_3hcmrs7e_e
R_3hdcaa_e      R_3hdd5ea_e     R_3hdd6e_e      R_3hdda_e       R_3hhdca_e      R_3hhpa_e       R_3hhxa_e
R_3hnonaa_e     R_3hocta_e      R_3hpba_e       R_3hpdeca_e     R_3hphpa_e      R_3hphxa_e      R_3hpnona_e
R_3hpocta_e     R_3hppta_e      R_3hpt_e        R_3htd58e_e     R_3htd5e_e      R_3httdca_e     T4hcinnm_e
abt_e   ac_e    acac_e  acald_e aces_e  acgal1p_e       acgal_e acgam1p_e       acgam_e acmana_e
acmtsoxin_e     acmum_e acnam_e acolipa_e       acon_C_e        acpptrn_e       acser_e actn__R_e       ade_e
adn_e   adocbl_e        ag_e    agm_e   akg_e   ala_B_e ala__D_e        ala__L_e        alaala_e        alahis_e
alaleu_e        alathr_e        alatrp_e        algac_MG_14_e   algac_MG_23_e   algac_MG_32_e   algac_MG_41_e
algac__M_e      all__D_e        alltn_e alltt_e amet_e  amp_e   anhgm_e apc_e   arab__D_e       arab__L_e
arbtn_e arbtn_fe3_e     arg__D_e        arg__L_e        ascb__L_e       asn__D_e        asn__L_e        aso3_e
aso4_e  asp__L_e        balaala_e       balabala_e      balagly_e       balaleu_e       balamd_e        bhb_e
biliverd_e      btd_RR_e        btn_e   but_e   butso3_e        bz_e    ca2_e   carn_e  catechol_e      cbi_e
cbl1_e  cd2_e   cell4_e cgly_e  chol_e  chols_e chor_e  cinnm_e cit_e   cl_e    cm_e    cmcbtt_e        cmp_e
co2_e   co_e    cobalt2_e       colipa_e        confrl_e        cpgn_e  cpgn_un_e       creat_e crn_e   cro2_e
cro4_e  crtn_e  csn_e   cu2_e   cu_e    cyan_e  cynt_e  cys__D_e        cys__L_e        cytd_e  d2one_e d3one_e d
4one_e  dad_2_e dag181d9_e      dag182d9d12_e   damp_e  dann_e  dca_e   dcmp_e  dcyt_e  ddca_e  dgmp_e  dgsn_e
dgudbutn_e      dha_e   dimp_e  din_e   dmanur_e        dmgly_e dms_e   dmso2_e dmso_e  dopa_e  dtmp_e  dttp_e
dump_e  duri_e  eca4colipa_e    ecto__L_e       enlipa_e        enter_e epist_e epistest_SC_e   ergst_e ergstest_
SC_e    etha_e  ethso3_e        etoh_e  f6p_e   fald_e  fcmcbtt_e       fe2_e   fe3_e   fe3dcit_e
fe3dhbzs_e      fe3hox_e        fe3hox_un_e     fe3mcbtt_e      fe3pyovd_e      fe3pyovd_kt_e   fecost_e
fecostest_SC_e  fecrm_e fecrm_un_e      feenter_e       feoxam_e        feoxam_un_e     fer_e   fmn_e   for_e
fru_e   frulys_e        fruur_e fuc__L_e        fum_e   g1p_e   g3pc_e  g3pe_e  g3pg_e  g3pi_e  g3ps_e  g6p_e
ga_e    gal1p_e gal_bD_e        gal_e   galct__D_e      galctn__D_e     galctn__L_e     galt_e  galur_e gam6p_e g
am_e    gbbtn_e gcald_e gdp_e   glc__D_e        glcn_e  glcr_e  glcur1p_e       glcur_e gln__L_e        glu__L_e
glutar_e        glx_e   gly_e   glyald_e        glyb_e  glyc2p_e        glyc3p_e        glyc__R_e       glyc_e
glyclt_e        glycol_e        glygln_e        glyglu_e        glygly_e        glymet_e        glyphe_e
glyser_e        gmp_e   gsn_e   gthox_e gthrd_e gtp_e   gua_e   gudac_e gudptn_e        h2_e    h2o2_e h2o_e
h2s_e   h_e     hacolipa_e      halipa_e        hco3_e  hcys__L_e       hdca_e  hdcea_e hexc_e  hg2_e   hgentis_e
his__L_e        hisgly_e        hishis_e        hom__L_e        hpta_e  hxa_e   hxan_e  iamac_e iamoh_e ibutac_e
ibutoh_e        icit_e  id3acald_e      idon__L_e       ile__L_e        imp_e   ind3ac_e        ind3eth_e
indole_e        inost_e ins_e   isetac_e        k_e     kdo2lipid4_e    lac__D_e        lac__L_e        lanost_e
lanostest_SC_e  lcts_e  leu__D_e        leu__L_e        leuleu_e        lipa_cold_e     lipa_e  lnlc_e  lpspput_e
lys__D_e        lys__L_e        lyx__L_e        m_xyl_e mal__D_e        mal__L_e        malt_e  malthx_e
maltpt_e        malttr_e        malttttr_e      man6p_e man_e   manglyc_e       manur_e mcbtt_e melib_e meoh_e
met__D_e        met__L_e        metsox_R__L_e   metsox_S__L_e   mg2_e   minohp_e        mmet_e  mn2_e   mnl_e
mobd_e  mso3_e  mtsoxin_e       n2o_e   n2one_e na1_e   nac_e   nadp_e  nh4_e   ni2_e   nmn_e   no2_e   no3_e
no_e    nona_e  o16a4colipa_e   o2_e    o2s_e   o_xyl_e oaa_e   ocdca_e ocdcea_e        ocdcya_e        octa_e
orn__D_e        orn_e   orot_e  oxa_e   p_xyl_e pac_e   pacald_e        pap_e   pb2_e   pc_SC_e pea_e   peamn_e p
ectin_e pentso3_e       pepd_e  phe__D_e        phe__L_e        pheac_e phedca_e        phehpa_e        phehxa_e
pheme_e phenona_e       pheocta_e       phept_e phpyr_e pi_e    pnto__R_e       ppa_e   ppal_e  ppi_e   pppn_e
ppt_e   pptrn_e prealg_MG_14_e  prealg_MG_23_e  prealg_MG_32_e  prealg_MG_41_e  prealginate_G_e pro__D_e
pro__L_e        progly_e        psclys_e        pser__L_e       pta_e   ptd1ino_SC_e    ptrc_e  ptsla_e pydam_e p
yovd_e  pyovd_kt_e      pyr_e   quin_e  r5p_e   rib__D_e        ribflv_e        rmn_e   sbo3_e  sbt__D_e
sbt__L_e        sel_e   ser__D_e        ser__L_e        sheme_e skm_e   so2_e   so3_e   so4_e   spmd_e  sprm_e
srb__L_e        succ_e  sucr_e  sulfac_e        tag160_e        tag180_e        tag181d9_e      tag182d9d12_e
tartr__L_e      taur_e  tcynt_e thm_e   thmmp_e thmpp_e thr__L_e        thrp_e  thym_e  thymd_e tma_e   tmanur_e
tmao_e  tnt_e   tol_e   tre_e   trp__L_e        tsul_e  ttdca_e ttdcea_e        ttrcyc_e        tungs_e tym_e
tyr__D_e        tyr__L_e        tyrp_e  uacgam_e        udpacgal_e      udpg_e  udpgal_e        udpglcur_e
ump_e   und2one_e       ura_e   urea_e  uri_e   vacc_e  val__D_e        val__L_e        vanln_e vanlt_e xan_e
xmp_e   xtsn_e  xyl__D_e        xylt_e  xylu__L_e       zn2_e   zymst_e zymstest_SC_e
```

```
Cycle 1
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FBARunThread-0 starting up.
FBARunThread-2 starting up.
FBARunThread-1 starting up.
Total biomass:
Model iAF1260.cmd: 1.2089481947366954E-8
Model iJN1463.cmd: 9.999718930488759E-9
Model iMM904.cmd: 1.0776522838521692E-8
Cycle 2
Total biomass:
Model iAF1260.cmd: 1.4617250353378054E-8
Model iJN1463.cmd: 1.0001872606844704E-8
Model iMM904.cmd: 1.1621435414905236E-8
Cycle 3
Total biomass:
Model iAF1260.cmd: 1.802462336730664E-8
Model iJN1463.cmd: 1.000683039706177E-8
Model iMM904.cmd: 1.2683665949617971E-8
Cycle 4
Total biomass:
Model iAF1260.cmd: 2.222941418150929E-8
Model iJN1463.cmd: 1.0014807657101718E-8
Model iMM904.cmd: 1.3842197904690353E-8
Cycle 5
Total biomass:
Model iAF1260.cmd: 2.7414575350253147E-8
Model iJN1463.cmd: 1.0026103741961147E-8
Model iMM904.cmd: 1.510534186117902E-8
Cycle 6
Total biomass:
Model iAF1260.cmd: 3.380720250924625E-8
Model iJN1463.cmd: 1.0041047757535394E-8
Model iMM904.cmd: 1.648268307253582E-8
Cycle 7
Total biomass:
Model iAF1260.cmd: 4.168707798872694E-8
Model iJN1463.cmd: 1.00600006334305E-8
Model iMM904.cmd: 1.798465549433114E-8
Cycle 8
Total biomass:
Model iAF1260.cmd: 5.1398656065233884E-8
Model iJN1463.cmd: 1.0083358240163444E-8
Model iMM904.cmd: 1.9622600459031845E-8
Cycle 9
Total biomass:
Model iAF1260.cmd: 6.336286773705504E-8
Model iJN1463.cmd: 1.0111554290340547E-8
Model iMM904.cmd: 2.140885824556023E-8
Cycle 10
Total biomass:
Model iAF1260.cmd: 7.809983097389435E-8
Model iJN1463.cmd: 1.0144947383993626E-8
Model iMM904.cmd: 2.3356930210566997E-8
Cycle 11
Total biomass:
Model iAF1260.cmd: 9.62489736411295E-8
Model iJN1463.cmd: 1.0184030761106808E-8
Model iMM904.cmd: 2.548140773124493E-8
Cycle 12
Total biomass:
Model iAF1260.cmd: 1.1800274996459207E-7
Model iJN1463.cmd: 1.0229363347729531E-8
Model iMM904.cmd: 2.7798092985809083E-8
Cycle 13
Total biomass:
```

```
Model iAF1260.cmd: 1.4404516680671093E-7
Model iJN1463.cmd: 1.0281556124522206E-8
Model iMM904.cmd: 3.0324297524827576E-8
Cycle 14
Total biomass:
Model iAF1260.cmd: 1.752304003276816E-7
Model iJN1463.cmd: 1.0341286577304345E-8
Model iMM904.cmd: 3.3078951722671354E-8
Cycle 15
Total biomass:
Model iAF1260.cmd: 2.1263209799549395E-7
Model iJN1463.cmd: 1.0409295747724208E-8
Model iMM904.cmd: 3.6082716364226624E-8
Cycle 16
Total biomass:
Model iAF1260.cmd: 2.574974800518928E-7
Model iJN1463.cmd: 1.0486394965703661E-8
Model iMM904.cmd: 3.9350746968138765E-8
Cycle 17
Total biomass:
Model iAF1260.cmd: 3.113980759133761E-7
Model iJN1463.cmd: 1.0573472812907497E-8
Model iMM904.cmd: 4.267429072095449E-8
Cycle 18
Total biomass:
Model iAF1260.cmd: 3.7620610630845193E-7
Model iJN1463.cmd: 1.0671502274441811E-8
Model iMM904.cmd: 4.514687719723978E-8
Cycle 19
Total biomass:
Model iAF1260.cmd: 4.532362220536405E-7
Model iJN1463.cmd: 1.0781552671353572E-8
Model iMM904.cmd: 4.691240342468122E-8
Cycle 20
Total biomass:
Model iAF1260.cmd: 5.447453938648889E-7
Model iJN1463.cmd: 1.0904794939001658E-8
Model iMM904.cmd: 4.819537620523609E-8
Cycle 21
Total biomass:
Model iAF1260.cmd: 6.533982750983301E-7
Model iJN1463.cmd: 1.1042513160298324E-8
Model iMM904.cmd: 4.9191485239212156E-8
Cycle 22
Total biomass:
Model iAF1260.cmd: 7.81711230337832E-7
Model iJN1463.cmd: 1.1196115657987396E-8
Model iMM904.cmd: 5.004104612503697E-8
Cycle 23
Total biomass:
Model iAF1260.cmd: 9.330804562521079E-7
Model iJN1463.cmd: 1.1366360408800626E-8
Model iMM904.cmd: 5.067508309859795E-8
Cycle 24
Total biomass:
Model iAF1260.cmd: 1.1118336198502252E-6
Model iJN1463.cmd: 1.1555511859617115E-8
Model iMM904.cmd: 5.1086267207224236E-8
Cycle 25
Total biomass:
Model iAF1260.cmd: 1.3230390900046324E-6
Model iJN1463.cmd: 1.1765378212204868E-8
Model iMM904.cmd: 5.134934837324361E-8
Cycle 26
Total biomass:
Model iAF1260.cmd: 1.5726904729940511E-6
Model iJN1463.cmd: 1.1997913853924625E-8
Model iMM904.cmd: 5.153110857899512E-8
Cycle 27
Total biomass:
Model iAF1260.cmd: 1.8678582519098222E-6
Model iJN1463.cmd: 1.2255172837543073E-8
Model iMM904.cmd: 5.1676315303491564E-8
Cycle 28
Total biomass:
Model iAF1260.cmd: 2.2168004595896677E-6
Model iJN1463.cmd: 1.2541215522065813E-8
Model iMM904.cmd: 5.180736566043399E-8
Cycle 29
Total biomass:
Model iAF1260.cmd: 2.6287163540828557E-6
Model iJN1463.cmd: 1.2856565644635762E-8
Model iMM904.cmd: 5.201953386468911E-8
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Cycle 30
Total biomass:
Model iAF1260.cmd: 3.114882348344583E-6
Model iJN1463.cmd: 1.3202115265599186E-8
Model iMM904.cmd: 5.229596420356625E-8
Cycle 31
Total biomass:
Model iAF1260.cmd: 3.6887742936665814E-6
Model iJN1463.cmd: 1.357891246465995E-8
Model iMM904.cmd: 5.2636698063665617E-8
Cycle 32
Total biomass:
Model iAF1260.cmd: 4.364573334590085E-6
Model iJN1463.cmd: 1.3991708186895676E-8
Model iMM904.cmd: 5.303287323020991E-8
Cycle 33
Total biomass:
Model iAF1260.cmd: 5.158980570423855E-6
Model iJN1463.cmd: 1.4441652033052367E-8
Model iMM904.cmd: 5.326948701113732E-8
Cycle 34
Total biomass:
Model iAF1260.cmd: 6.093200758743104E-6
Model iJN1463.cmd: 1.492764105880061E-8
Model iMM904.cmd: 5.343805804892653E-8
Cycle 35
Total biomass:
Model iAF1260.cmd: 7.191021658571775E-6
Model iJN1463.cmd: 1.5457965236711236E-8
Model iMM904.cmd: 5.358500963796202E-8
Cycle 36
Total biomass:
Model iAF1260.cmd: 8.481884357833377E-6
Model iJN1463.cmd: 1.603757741313149E-8
Model iMM904.cmd: 5.3729200083002143E-8
Cycle 37
Total biomass:
Model iAF1260.cmd: 1.0000311128595839E-5
Model iJN1463.cmd: 1.6671528989544944E-8
Model iMM904.cmd: 5.386837871568797E-8
Cycle 38
Total biomass:
Model iAF1260.cmd: 1.1786218688553926E-5
Model iJN1463.cmd: 1.7366177375022698E-8
Model iMM904.cmd: 5.400104511461093E-8
Cycle 39
Total biomass:
Model iAF1260.cmd: 1.3886973651394417E-5
Model iJN1463.cmd: 1.812862287478447E-8
Model iMM904.cmd: 5.411756127654603E-8
Cycle 40
Total biomass:
Model iAF1260.cmd: 1.635848082342487E-5
Model iJN1463.cmd: 1.8992108699783992E-8
Model iMM904.cmd: 5.421884041353484E-8
Cycle 41
Total biomass:
Model iAF1260.cmd: 1.926655454313754E-5
Model iJN1463.cmd: 1.996767749486739E-8
Model iMM904.cmd: 5.431700151411622E-8
Cycle 42
Total biomass:
Model iAF1260.cmd: 2.2688479379026235E-5
Model iJN1463.cmd: 2.104100165059365E-8
Model iMM904.cmd: 5.434830179990497E-8
Cycle 43
Total biomass:
Model iAF1260.cmd: 2.6713646654079466E-5
Model iJN1463.cmd: 2.222053333618291E-8
Model iMM904.cmd: 5.443567144378927E-8
Cycle 44
Total biomass:
Model iAF1260.cmd: 3.1448701756861965E-5
Model iJN1463.cmd: 2.351724565077264E-8
Model iMM904.cmd: 5.4522294485981446E-8
Cycle 45
Total biomass:
Model iAF1260.cmd: 3.7019838036109514E-5
Model iJN1463.cmd: 2.4942343624147327E-8
Model iMM904.cmd: 5.454345432301974E-8
Cycle 46
Total biomass:
Model iAF1260.cmd: 4.35752620819958E-5
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Model iJN1463.cmd: 2.650761821595746E-8
Model iMM904.cmd: 5.45423806087793E-8
Cycle 47
Total biomass:
Model iAF1260.cmd: 5.128943011596162E-5
Model iJN1463.cmd: 2.8226659003805728E-8
Model iMM904.cmd: 5.4548210787166724E-8
Cycle 48
Total biomass:
Model iAF1260.cmd: 6.036754966277713E-5
Model iJN1463.cmd: 3.011463866767277E-8
Model iMM904.cmd: 5.45627224966094E-8
Cycle 49
Total biomass:
Model iAF1260.cmd: 7.092887216071878E-5
Model iJN1463.cmd: 3.2189858241630866E-8
Model iMM904.cmd: 5.4562394278194554E-8
Cycle 50
Total biomass:
Model iAF1260.cmd: 8.293199092378038E-5
Model iJN1463.cmd: 3.4468300161974806E-8
Model iMM904.cmd: 5.4566126077450735E-8
Cycle 51
Total biomass:
Model iAF1260.cmd: 9.659785039656863E-5
Model iJN1463.cmd: 3.697127807320051E-8
Model iMM904.cmd: 5.457139772182171E-8
Cycle 52
Total biomass:
Model iAF1260.cmd: 1.1212538330192068E-4
Model iJN1463.cmd: 3.971566261887962E-8
Model iMM904.cmd: 5.456326642839682E-8
Cycle 53
Total biomass:
Model iAF1260.cmd: 1.2969223634338092E-4
Model iJN1463.cmd: 4.2727189807646385E-8
Model iMM904.cmd: 5.471737518428569E-8
Cycle 54
Total biomass:
Model iAF1260.cmd: 1.49583840897615E-4
Model iJN1463.cmd: 4.603328157703919E-8
Model iMM904.cmd: 5.477190351596832E-8
Cycle 55
Total biomass:
Model iAF1260.cmd: 1.721260154016379E-4
Model iJN1463.cmd: 4.966015175066038E-8
Model iMM904.cmd: 5.482977757668988E-8
Cycle 56
Total biomass:
Model iAF1260.cmd: 1.976830860975482E-4
Model iJN1463.cmd: 5.363973800596094E-8
Model iMM904.cmd: 5.4925224512031776E-8
Cycle 57
Total biomass:
Model iAF1260.cmd: 2.2668093534280832E-4
Model iJN1463.cmd: 5.800530564716408E-8
Model iMM904.cmd: 5.521453487524948E-8
Cycle 58
Total biomass:
Model iAF1260.cmd: 2.5961012224078733E-4
Model iJN1463.cmd: 6.279764112882415E-8
Model iMM904.cmd: 5.559699213642032E-8
Cycle 59
Total biomass:
Model iAF1260.cmd: 2.9703444702686973E-4
Model iJN1463.cmd: 6.805647640245739E-8
Model iMM904.cmd: 5.604588155683811E-8
Cycle 60
Total biomass:
Model iAF1260.cmd: 3.389845847307541E-4
Model iJN1463.cmd: 7.388042760372165E-8
Model iMM904.cmd: 5.6572115877001164E-8
Cycle 61
Total biomass:
Model iAF1260.cmd: 3.859343939562921E-4
Model iJN1463.cmd: 8.032915099156359E-8
Model iMM904.cmd: 5.702852756546833E-8
Cycle 62
Total biomass:
Model iAF1260.cmd: 4.385204711106413E-4
Model iJN1463.cmd: 8.742021810543437E-8
Model iMM904.cmd: 5.743498234040347E-8
Cycle 63
```

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Total biomass:
Model iAF1260.cmd: 4.972368556352949E-4
Model iJN1463.cmd: 9.521103766005081E-8
Model iMM904.cmd: 5.78782725798973355E-8
Cycle 64
Total biomass:
Model iAF1260.cmd: 5.6282555194062002E-4
Model iJN1463.cmd: 1.0376864960041564E-7
Model iMM904.cmd: 5.844466953915801E-8
Cycle 65
Total biomass:
Model iAF1260.cmd: 6.361107146884016E-4
Model iJN1463.cmd: 1.1316505187831347E-7
Model iMM904.cmd: 5.92123870018924E-8
Cycle 66
Total biomass:
Model iAF1260.cmd: 7.179931289535102E-4
Model iJN1463.cmd: 1.2348222656601936E-7
Model iMM904.cmd: 6.013395777525365E-8
Cycle 67
Total biomass:
Model iAF1260.cmd: 8.094879886225064E-4
Model iJN1463.cmd: 1.348100745042158E-7
Model iMM904.cmd: 6.121295934912769E-8
Cycle 68
Total biomass:
Model iAF1260.cmd: 9.117436175881357E-4
Model iJN1463.cmd: 1.472467271834197E-7
Model iMM904.cmd: 6.25979304554818E-8
Cycle 69
Total biomass:
Model iAF1260.cmd: 0.0010260469303007128
Model iJN1463.cmd: 1.609018696330036E-7
Model iMM904.cmd: 6.419985039472853E-8
Cycle 70
Total biomass:
Model iAF1260.cmd: 0.00115383967873217
Model iJN1463.cmd: 1.7594889186644092E-7
Model iMM904.cmd: 6.599225443179633E-8
Cycle 71
Total biomass:
Model iAF1260.cmd: 0.0012967572997915958
Model iJN1463.cmd: 1.9247904668291525E-7
Model iMM904.cmd: 6.79863609147875E-8
Cycle 72
Total biomass:
Model iAF1260.cmd: 0.0014566360698386905
Model iJN1463.cmd: 2.1063394734462898E-7
Model iMM904.cmd: 7.017679019565655E-8
Cycle 73
Total biomass:
Model iAF1260.cmd: 0.0016348285259539723
Model iJN1463.cmd: 2.3051253088807983E-7
Model iMM904.cmd: 7.258442808511453E-8
Cycle 74
Total biomass:
Model iAF1260.cmd: 0.0018323357915223103
Model iJN1463.cmd: 2.523321118477335E-7
Model iMM904.cmd: 7.52285820891493E-8
Cycle 75
Total biomass:
Model iAF1260.cmd: 0.0020542944028773082
Model iJN1463.cmd: 2.762785050372713E-7
Model iMM904.cmd: 7.812483306981661E-8
Cycle 76
Total biomass:
Model iAF1260.cmd: 0.002300628202457867
Model iJN1463.cmd: 3.025808766772683E-7
Model iMM904.cmd: 8.125732898602703E-8
Cycle 77
Total biomass:
Model iAF1260.cmd: 0.002575162985629555
Model iJN1463.cmd: 3.3145172710965433E-7
Model iMM904.cmd: 8.46027084274607E-8
Cycle 78
Total biomass:
Model iAF1260.cmd: 0.0028811526539200536
Model iJN1463.cmd: 3.631335912858273E-7
Model iMM904.cmd: 8.815236206176271E-8
Cycle 79
Total biomass:
Model iAF1260.cmd: 0.0032222211537040408
Model iJN1463.cmd: 3.979013443048289E-7
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Model iMM904.cmd: 9.1986657444883E-8
Cycle 80
Total biomass:
Model iAF1260.cmd: 0.003602414659477511
Model iJN1463.cmd: 4.360509340991834E-7
Model iMM904.cmd: 9.61706242954373E-8
Cycle 81
Total biomass:
Model iAF1260.cmd: 0.004026250980092328
Model iJN1463.cmd: 4.779023032414996E-7
Model iMM904.cmd: 1.0069907962230825E-7
Cycle 82
Total biomass:
Model iAF1260.cmd: 0.004498774501731586
Model iJN1463.cmd: 5.238039269459289E-7
Model iMM904.cmd: 1.0560740888801486E-7
Cycle 83
Total biomass:
Model iAF1260.cmd: 0.005025619346520123
Model iJN1463.cmd: 5.741272129622328E-7
Model iMM904.cmd: 1.1094652555254259E-7
Cycle 84
Total biomass:
Model iAF1260.cmd: 0.005612991701848883
Model iJN1463.cmd: 6.292632558752395E-7
Model iMM904.cmd: 1.1665188044238537E-7
Cycle 85
Total biomass:
Model iAF1260.cmd: 0.006267930974973097
Model iJN1463.cmd: 6.896052798385267E-7
Model iMM904.cmd: 1.228697771075414E-7
Cycle 86
Total biomass:
Model iAF1260.cmd: 0.006998163564294403
Model iJN1463.cmd: 7.555040426329137E-7
Model iMM904.cmd: 1.2989643809547656E-7
Cycle 87
Total biomass:
Model iAF1260.cmd: 0.007811671718766154
Model iJN1463.cmd: 8.272887664942212E-7
Model iMM904.cmd: 1.376480074939138E-7
Cycle 88
Total biomass:
Model iAF1260.cmd: 0.008718149294993023
Model iJN1463.cmd: 9.054862998169394E-7
Model iMM904.cmd: 1.4581343356917916E-7
Cycle 89
Total biomass:
Model iAF1260.cmd: 0.0097284899308638
Model iJN1463.cmd: 9.924258649466765E-7
Model iMM904.cmd: 1.5454560566546107E-7
Cycle 90
Total biomass:
Model iAF1260.cmd: 0.010854469819009045
Model iJN1463.cmd: 1.0876201067625269E-6
Model iMM904.cmd: 1.637405953261028E-7
Cycle 91
Total biomass:
Model iAF1260.cmd: 0.012109410362592648
Model iJN1463.cmd: 1.1918060849488006E-6
Model iMM904.cmd: 1.7344887646901917E-7
Cycle 92
Total biomass:
Model iAF1260.cmd: 0.013508153382614341
Model iJN1463.cmd: 1.3057907408968462E-6
Model iMM904.cmd: 1.8369639118487126E-7
Cycle 93
Total biomass:
Model iAF1260.cmd: 0.01506587872222877
Model iJN1463.cmd: 1.4303622645170363E-6
Model iMM904.cmd: 1.9456513090795896E-7
Cycle 94
Total biomass:
Model iAF1260.cmd: 0.016801073362655263
Model iJN1463.cmd: 1.5665182593848524E-6
Model iMM904.cmd: 2.0603704971750176E-7
Cycle 95
Total biomass:
Model iAF1260.cmd: 0.01873407598785258
Model iJN1463.cmd: 1.7152804253776549E-6
Model iMM904.cmd: 2.181189334661416E-7
Cycle 96
Total biomass:
```

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Model iAF1260.cmd: 0.020887441697530373
Model iJN1463.cmd: 1.87774904419872323E-6
Model iMM904.cmd: 2.3085503354686567E-7
Cycle 97
Total biomass:
Model iAF1260.cmd: 0.02328600519663891
Model iJN1463.cmd: 2.055129467739906E-6
Model iMM904.cmd: 2.4428178693250416E-7
Cycle 98
Total biomass:
Model iAF1260.cmd: 0.025957838193496733
Model iJN1463.cmd: 2.2486279832893388E-6
Model iMM904.cmd: 2.5844214479747493E-7
Cycle 99
Total biomass:
Model iAF1260.cmd: 0.028934120752524262
Model iJN1463.cmd: 2.45954877726774E-6
Model iMM904.cmd: 2.733709105495774E-7
Cycle 100
Total biomass:
Model iAF1260.cmd: 0.032249586901443396
Model iJN1463.cmd: 2.689242327940502E-6
Model iMM904.cmd: 2.8917543156942435E-7
Cycle 101
Total biomass:
Model iAF1260.cmd: 0.0359429401370875
Model iJN1463.cmd: 2.9390825061999174E-6
Model iMM904.cmd: 3.05823111316517E-7
Cycle 102
Total biomass:
Model iAF1260.cmd: 0.040057306476847736
Model iJN1463.cmd: 3.2104417543237926E-6
Model iMM904.cmd: 3.233598929342485E-7
Cycle 103
Total biomass:
Model iAF1260.cmd: 0.04464054620234995
Model iJN1463.cmd: 3.5046243446135522E-6
Model iMM904.cmd: 3.4182293976037205E-7
Cycle 104
Total biomass:
Model iAF1260.cmd: 0.0497449671084513
Model iJN1463.cmd: 3.822943269473195E-6
Model iMM904.cmd: 3.612732357364758E-7
Cycle 105
Total biomass:
Model iAF1260.cmd: 0.05543030265575119
Model iJN1463.cmd: 4.16779215628677E-6
Model iMM904.cmd: 3.817506625093107E-7
Cycle 106
Total biomass:
Model iAF1260.cmd: 0.061762275337272262
Model iJN1463.cmd: 4.5411007116521605E-6
Model iMM904.cmd: 4.023790810502075E-7
Cycle 107
Total biomass:
Model iAF1260.cmd: 0.06881601720143635
Model iJN1463.cmd: 4.944705484781435E-6
Model iMM904.cmd: 4.2450108282178997E-7
Cycle 108
Total biomass:
Model iAF1260.cmd: 0.07667217872187874
Model iJN1463.cmd: 5.3804121249807715E-6
Model iMM904.cmd: 4.48186937496408E-7
Cycle 109
Total biomass:
Model iAF1260.cmd: 0.08542267467792984
Model iJN1463.cmd: 5.849926015301538E-6
Model iMM904.cmd: 4.730706257172185E-7
Cycle 110
Total biomass:
Model iAF1260.cmd: 0.09516908285909702
Model iJN1463.cmd: 6.354775951293456E-6
Model iMM904.cmd: 4.991645817592817E-7
Cycle 111
Total biomass:
Model iAF1260.cmd: 0.10602483189418958
Model iJN1463.cmd: 6.896895967901561E-6
Model iMM904.cmd: 5.260865794677985E-7
Cycle 112
Total biomass:
Model iAF1260.cmd: 0.11811626756794945
Model iJN1463.cmd: 7.477770898579875E-6
Model iMM904.cmd: 5.5469766113201801E-7
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Cycle 113
Total biomass:
Model iAF1260.cmd: 0.1315841032698845
Model iJN1463.cmd: 8.09829111966261E-6
Model iMM904.cmd: 5.846137763861409E-7
Cycle 114
Total biomass:
Model iAF1260.cmd: 0.14658507729429776
Model iJN1463.cmd: 8.758572732226447E-6
Model iMM904.cmd: 6.158464916911008E-7
Cycle 115
Total biomass:
Model iAF1260.cmd: 0.16329288598572447
Model iJN1463.cmd: 9.457545538898308E-6
Model iMM904.cmd: 6.484220823691046E-7
Cycle 116
Total biomass:
Model iAF1260.cmd: 0.1819015387138101
Model iJN1463.cmd: 1.019903527066668E-5
Model iMM904.cmd: 6.824089150220259E-7
Cycle 117
Total biomass:
Model iAF1260.cmd: 0.20262756608914162
Model iJN1463.cmd: 1.0988197325933997E-5
Model iMM904.cmd: 7.179194151611552E-7
Cycle 118
Total biomass:
Model iAF1260.cmd: 0.22571195035314254
Model iJN1463.cmd: 1.1827213148752741E-5
Model iMM904.cmd: 7.549743553269269E-7
Cycle 119
Total biomass:
Model iAF1260.cmd: 0.2514230641554935
Model iJN1463.cmd: 1.2717696196660221E-5
Model iMM904.cmd: 7.936349230726576E-7
Cycle 120
Total biomass:
Model iAF1260.cmd: 0.28005983025797554
Model iJN1463.cmd: 1.3656132281289634E-5
Model iMM904.cmd: 8.339756962675764E-7
Cycle 121
Total biomass:
Model iAF1260.cmd: 0.31195518572081427
Model iJN1463.cmd: 1.4636001451761754E-5
Model iMM904.cmd: 8.75693878882352E-7
Cycle 122
Total biomass:
Model iAF1260.cmd: 0.34747982636521024
Model iJN1463.cmd: 1.565701139780691E-5
Model iMM904.cmd: 9.196941636429961E-7
Cycle 123
Total biomass:
Model iAF1260.cmd: 0.38704672332534246
Model iJN1463.cmd: 1.6719927271688877E-5
Model iMM904.cmd: 9.655268149855558E-7
Cycle 124
Total biomass:
Model iAF1260.cmd: 0.4311159103310508
Model iJN1463.cmd: 1.7824833901578626E-5
Model iMM904.cmd: 1.0132246012585E-6
Cycle 125
Total biomass:
Model iAF1260.cmd: 0.48019973733161475
Model iJN1463.cmd: 1.896907692010444E-5
Model iMM904.cmd: 1.0625585783966887E-6
Cycle 126
Total biomass:
Model iAF1260.cmd: 0.5348688556919897
Model iJN1463.cmd: 2.014775806697847E-5
Model iMM904.cmd: 1.1137314281712994E-6
Cycle 127
Total biomass:
Model iAF1260.cmd: 0.5957588476992061
Model iJN1463.cmd: 2.135298535865706E-5
Model iMM904.cmd: 1.1673621009630375E-6
Cycle 128
Total biomass:
Model iAF1260.cmd: 0.6635766253854006
Model iJN1463.cmd: 2.2569616768799956E-5
Model iMM904.cmd: 1.2237051228878813E-6
Cycle 129
Total biomass:
Model iAF1260.cmd: 0.7391104349529325
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Model iJN1463.cmd: 2.3807881021736693E-5
Model iMM904.cmd: 1.2832981874492273E-6
Cycle 130
Total biomass:
Model iAF1260.cmd: 0.8232383205774466
Model iJN1463.cmd: 2.508102800371611E-5
Model iMM904.cmd: 1.3470254511675044E-6
Cycle 131
Total biomass:
Model iAF1260.cmd: 0.9169381323723771
Model iJN1463.cmd: 2.6394527235911683E-5
Model iMM904.cmd: 1.4151335895288194E-6
Cycle 132
Total biomass:
Model iAF1260.cmd: 1.0212988823198714
Model iJN1463.cmd: 2.7748247237863916E-5
Model iMM904.cmd: 1.4866077548584857E-6
Cycle 133
Total biomass:
Model iAF1260.cmd: 1.1375335888149403
Model iJN1463.cmd: 2.914477215930007E-5
Model iMM904.cmd: 1.5617185911392687E-6
Cycle 134
Total biomass:
Model iAF1260.cmd: 1.2669932591797535
Model iJN1463.cmd: 3.058337144575139E-5
Model iMM904.cmd: 1.6405529722993104E-6
Cycle 135
Total biomass:
Model iAF1260.cmd: 1.4111826205175115
Model iJN1463.cmd: 3.206191232984763E-5
Model iMM904.cmd: 1.7233457580007569E-6
Cycle 136
Total biomass:
Model iAF1260.cmd: 1.5717776168716924
Model iJN1463.cmd: 3.357724351516155E-5
Model iMM904.cmd: 1.8102488000921462E-6
Cycle 137
Total biomass:
Model iAF1260.cmd: 1.7506448830138879
Model iJN1463.cmd: 3.5124674785575965E-5
Model iMM904.cmd: 1.901281356275425E-6
Cycle 138
Total biomass:
Model iAF1260.cmd: 1.949863445287829
Model iJN1463.cmd: 3.669719858215589E-5
Model iMM904.cmd: 1.99719513588608E-6
Cycle 139
Total biomass:
Model iAF1260.cmd: 2.1717488553151574
Model iJN1463.cmd: 3.828283151994108E-5
Model iMM904.cmd: 2.1009820763437756E-6
Cycle 140
Total biomass:
Model iAF1260.cmd: 2.4188801520486423
Model iJN1463.cmd: 3.985682530473563E-5
Model iMM904.cmd: 2.206668753665574E-6
Cycle 141
Total biomass:
Model iAF1260.cmd: 2.6941288305252007
Model iJN1463.cmd: 4.139566207294618E-5
Model iMM904.cmd: 2.3040938942602528E-6
Cycle 142
Total biomass:
Model iAF1260.cmd: 3.000694046862599
Model iJN1463.cmd: 4.141110028181084E-5
Model iMM904.cmd: 2.3102518321145704E-6
Cycle 143
Total biomass:
Model iAF1260.cmd: 3.3421386511726507
Model iJN1463.cmd: 4.1523467268818414E-5
Model iMM904.cmd: 2.347095284352415E-6
Cycle 144
Total biomass:
Model iAF1260.cmd: 3.7224312053076454
Model iJN1463.cmd: 4.154319627238403E-5
Model iMM904.cmd: 2.356684174481157E-6
Cycle 145
Total biomass:
Model iAF1260.cmd: 4.145991856074612
Model iJN1463.cmd: 4.1565376989281066E-5
Model iMM904.cmd: 2.3638212510173835E-6
Cycle 146
```

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Total biomass:
Model iAF1260.cmd: 4.617743719086206
Model iJN1463.cmd: 4.165944381679234E-5
Model iMM904.cmd: 2.3692373965088235E-6
Cycle 147
Total biomass:
Model iAF1260.cmd: 5.1431693800659115
Model iJN1463.cmd: 4.177558915524699E-5
Model iMM904.cmd: 2.4030411764377716E-6
Cycle 148
Total biomass:
Model iAF1260.cmd: 5.7283760672712765
Model iJN1463.cmd: 4.180737545103791E-5
Model iMM904.cmd: 2.414118131891926E-6
Cycle 149
Total biomass:
Model iAF1260.cmd: 6.380165123419198
Model iJN1463.cmd: 4.184284930490529E-5
Model iMM904.cmd: 2.4266709307411002E-6
Cycle 150
Total biomass:
Model iAF1260.cmd: 7.106112065017044
Model iJN1463.cmd: 4.188237182482864E-5
Model iMM904.cmd: 2.434110804164707E-6
Cycle 151
Total biomass:
Model iAF1260.cmd: 7.914654508813339
Model iJN1463.cmd: 4.226361263272321E-5
Model iMM904.cmd: 2.51656885902812E-6
Cycle 152
Total biomass:
Model iAF1260.cmd: 8.81518933802413
Model iJN1463.cmd: 4.2314294542716106E-5
Model iMM904.cmd: 2.532431226060001E-6
Cycle 153
Total biomass:
Model iAF1260.cmd: 9.818183455334273
Model iJN1463.cmd: 4.2368778701306864E-5
Model iMM904.cmd: 2.5472194044786575E-6
Cycle 154
Total biomass:
Model iAF1260.cmd: 10.93529425769793
Model iJN1463.cmd: 4.242927442244418E-5
Model iMM904.cmd: 2.565423298646368E-6
Cycle 155
Total biomass:
Model iAF1260.cmd: 12.17950561729033
Model iJN1463.cmd: 4.249630209898794E-5
Model iMM904.cmd: 2.576409858680018E-6
Cycle 156
Total biomass:
Model iAF1260.cmd: 13.565278063075658
Model iJN1463.cmd: 4.289864894155984E-5
Model iMM904.cmd: 2.6695816702559615E-6
Cycle 157
Total biomass:
Model iAF1260.cmd: 15.108718145522909
Model iJN1463.cmd: 4.298076739303819E-5
Model iMM904.cmd: 2.6918233698900954E-6
Cycle 158
Total biomass:
Model iAF1260.cmd: 16.827764442583895
Model iJN1463.cmd: 4.307207473314216E-5
Model iMM904.cmd: 2.714146177322815E-6
Cycle 159
Total biomass:
Model iAF1260.cmd: 18.74239673216521
Model iJN1463.cmd: 4.317286001706812E-5
Model iMM904.cmd: 2.7364426063800395E-6
Cycle 160
Total biomass:
Model iAF1260.cmd: 20.874867870670464
Model iJN1463.cmd: 4.328391447078135E-5
Model iMM904.cmd: 2.7600539917878174E-6
Cycle 161
Total biomass:
Model iAF1260.cmd: 23.24996292122439
Model iJN1463.cmd: 4.340625247285657E-5
Model iMM904.cmd: 2.7864857311362837E-6
Cycle 162
Total biomass:
Model iAF1260.cmd: 25.89528656773669
Model iJN1463.cmd: 4.3541514474295755E-5
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Model iMM904.cmd: 2.808808661660361E-6
Cycle 163
Total biomass:
Model iAF1260.cmd: 28.257142137593238
Model iJN1463.cmd: 4.384684345682649E-5
Model iMM904.cmd: 2.8645802320992095E-6
Cycle 164
Total biomass:
Model iAF1260.cmd: 30.80959413728304
Model iJN1463.cmd: 4.419812414642631E-5
Model iMM904.cmd: 2.9471963322097492E-6
Cycle 165
Total biomass:
Model iAF1260.cmd: 32.29057447073151
Model iJN1463.cmd: 4.436302566416228E-5
Model iMM904.cmd: 2.9735047297000245E-6
Cycle 166
Total biomass:
Model iAF1260.cmd: 33.900892810920645
Model iJN1463.cmd: 4.4540147389784246E-5
Model iMM904.cmd: 2.9998161645282964E-6
Cycle 167
Total biomass:
Model iAF1260.cmd: 34.032480453725945
Model iJN1463.cmd: 4.6033469039355584E-5
Model iMM904.cmd: 2.9997760971875497E-6
Cycle 168
Total biomass:
Model iAF1260.cmd: 34.33567722726722
Model iJN1463.cmd: 4.665496980038736E-5
Model iMM904.cmd: 3.0343174075755217E-6
Cycle 169
Total biomass:
Model iAF1260.cmd: 35.05875394502612
Model iJN1463.cmd: 4.781911333626701E-5
Model iMM904.cmd: 3.0664430944158002E-6
Cycle 170
Total biomass:
Model iAF1260.cmd: 35.42522158918663
Model iJN1463.cmd: 4.871403369733751E-5
Model iMM904.cmd: 3.102393861118364E-6
Cycle 171
Total biomass:
Model iAF1260.cmd: 35.68683027540322
Model iJN1463.cmd: 5.020753885333925E-5
Model iMM904.cmd: 3.1023509722086985E-6
Cycle 172
Total biomass:
Model iAF1260.cmd: 35.857572329829374
Model iJN1463.cmd: 5.060881541055605E-5
Model iMM904.cmd: 3.1375197104288597E-6
Cycle 173
Total biomass:
Model iAF1260.cmd: 36.184158881077046
Model iJN1463.cmd: 5.116134516166095E-5
Model iMM904.cmd: 3.1400956619756046E-6
Cycle 174
Total biomass:
Model iAF1260.cmd: 36.255590623407734
Model iJN1463.cmd: 5.160346044320533E-5
Model iMM904.cmd: 3.147722845714432E-6
Cycle 175
Total biomass:
Model iAF1260.cmd: 36.30535827962245
Model iJN1463.cmd: 5.2104233941118716E-5
Model iMM904.cmd: 3.147685522582586E-6
Cycle 176
Total biomass:
Model iAF1260.cmd: 36.39106341511109
Model iJN1463.cmd: 5.252871254352451E-5
Model iMM904.cmd: 3.14763983748662E-6
Cycle 177
Total biomass:
Model iAF1260.cmd: 36.45114371730165
Model iJN1463.cmd: 5.2640660188777904E-5
Model iMM904.cmd: 3.1704804068330563E-6
Cycle 178
Total biomass:
Model iAF1260.cmd: 36.53010729950385
Model iJN1463.cmd: 5.266764284867617E-5
Model iMM904.cmd: 3.176968488480293E-6
Cycle 179
Total biomass:
```

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Model iAF1260.cmd: 36.55782133337862
Model iJN1463.cmd: 5.275199015669535E-5
Model iMM904.cmd: 3.2081168784720378E-6
Cycle 180
Total biomass:
Model iAF1260.cmd: 36.57560796874275
Model iJN1463.cmd: 5.3027014958481216E-5
Model iMM904.cmd: 3.2437019972910586E-6
Cycle 181
Total biomass:
Model iAF1260.cmd: 36.64906619841802
Model iJN1463.cmd: 5.3031511836333375E-5
Model iMM904.cmd: 3.245262331397046E-6
Cycle 182
Total biomass:
Model iAF1260.cmd: 36.685356532287805
Model iJN1463.cmd: 5.303099716475268E-5
Model iMM904.cmd: 3.2452207983411024E-6
Cycle 183
Total biomass:
Model iAF1260.cmd: 36.74073557429639
Model iJN1463.cmd: 5.304007647647494E-5
Model iMM904.cmd: 3.248706062383653E-6
Cycle 184
Total biomass:
Model iAF1260.cmd: 36.75310841670933
Model iJN1463.cmd: 5.3050749391138244E-5
Model iMM904.cmd: 3.253886323238458E-6
Cycle 185
Total biomass:
Model iAF1260.cmd: 36.791543933232724
Model iJN1463.cmd: 5.309950238091456E-5
Model iMM904.cmd: 3.267378531543033E-6
Cycle 186
Total biomass:
Model iAF1260.cmd: 36.83367888659122
Model iJN1463.cmd: 5.3154834050113594E-5
Model iMM904.cmd: 3.281642690112787E-6
Cycle 187
Total biomass:
Model iAF1260.cmd: 36.89491215366928
Model iJN1463.cmd: 5.321553682505128E-5
Model iMM904.cmd: 3.2971160320067118E-6
Cycle 188
Total biomass:
Model iAF1260.cmd: 36.89784491007551
Model iJN1463.cmd: 5.3518770032967835E-5
Model iMM904.cmd: 3.3408872417907042E-6
Cycle 189
Total biomass:
Model iAF1260.cmd: 36.96038226752316
Model iJN1463.cmd: 5.385012397228908E-5
Model iMM904.cmd: 3.388508077298396E-6
Cycle 190
Total biomass:
Model iAF1260.cmd: 37.02025884501748
Model iJN1463.cmd: 5.39716425228005E-5
Model iMM904.cmd: 3.4172401142776126E-6
Cycle 191
Total biomass:
Model iAF1260.cmd: 37.040123650305034
Model iJN1463.cmd: 5.404410560572513E-5
Model iMM904.cmd: 3.432578199409259E-6
Cycle 192
Total biomass:
Model iAF1260.cmd: 37.077043948884096
Model iJN1463.cmd: 5.4799274165508515E-5
Model iMM904.cmd: 3.4876429392440275E-6
Cycle 193
Total biomass:
Model iAF1260.cmd: 37.132842941992315
Model iJN1463.cmd: 5.6718141886986624E-5
Model iMM904.cmd: 3.4877623384794586E-6
Cycle 194
Total biomass:
Model iAF1260.cmd: 37.157665589227975
Model iJN1463.cmd: 5.797941956503641E-5
Model iMM904.cmd: 3.5244386200277217E-6
Cycle 195
Total biomass:
Model iAF1260.cmd: 37.255031526706844
Model iJN1463.cmd: 5.959579551521661E-5
Model iMM904.cmd: 3.5243777874791298E-6
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Cycle 196
Total biomass:
Model iAF1260.cmd: 37.327452857559315
Model iJN1463.cmd: 6.064965529952146E-5
Model iMM904.cmd: 3.541949737871665E-6
Cycle 197
Total biomass:
Model iAF1260.cmd: 37.35614637056132
Model iJN1463.cmd: 6.194234434194985E-5
Model iMM904.cmd: 3.541887412804662E-6
Cycle 198
Total biomass:
Model iAF1260.cmd: 37.400382366608234
Model iJN1463.cmd: 6.307404083264555E-5
Model iMM904.cmd: 3.582814295741177E-6
Cycle 199
Total biomass:
Model iAF1260.cmd: 37.42834223134392
Model iJN1463.cmd: 6.435400671781999E-5
Model iMM904.cmd: 3.654174900677039E-6
Cycle 200
Total biomass:
Model iAF1260.cmd: 37.46537937720871
Model iJN1463.cmd: 6.475073740604756E-5
Model iMM904.cmd: 3.6870857419526445E-6
Cycle 201
Total biomass:
Model iAF1260.cmd: 37.49997058788668
Model iJN1463.cmd: 6.578530372949455E-5
Model iMM904.cmd: 3.7050407159489574E-6
Cycle 202
Total biomass:
Model iAF1260.cmd: 37.527494261405586
Model iJN1463.cmd: 6.823739149356287E-5
Model iMM904.cmd: 3.7370293319392826E-6
Cycle 203
Total biomass:
Model iAF1260.cmd: 37.54269714906504
Model iJN1463.cmd: 7.035955047008867E-5
Model iMM904.cmd: 3.7961452728802848E-6
Cycle 204
Total biomass:
Model iAF1260.cmd: 37.60133529628344
Model iJN1463.cmd: 7.14656355497966E-5
Model iMM904.cmd: 3.859538107024487E-6
Cycle 205
Total biomass:
Model iAF1260.cmd: 37.68324278634588
Model iJN1463.cmd: 7.515878367996217E-5
Model iMM904.cmd: 3.906499206462655E-6
Cycle 206
Total biomass:
Model iAF1260.cmd: 37.712014335697816
Model iJN1463.cmd: 7.545691602371232E-5
Model iMM904.cmd: 3.9173390619784085E-6
Cycle 207
Total biomass:
Model iAF1260.cmd: 37.74903442664007
Model iJN1463.cmd: 7.758580277481743E-5
Model iMM904.cmd: 3.964228727201367E-6
Cycle 208
Total biomass:
Model iAF1260.cmd: 37.83266721684272
Model iJN1463.cmd: 7.863292483431432E-5
Model iMM904.cmd: 3.96451443216752E-6
Cycle 209
Total biomass:
Model iAF1260.cmd: 37.914754558734806
Model iJN1463.cmd: 8.134735587942474E-5
Model iMM904.cmd: 3.967832145499237E-6
Cycle 210
Total biomass:
Model iAF1260.cmd: 37.96936237066466
Model iJN1463.cmd: 8.264530076738393E-5
Model iMM904.cmd: 4.037774234685096E-6
Cycle 211
Total biomass:
Model iAF1260.cmd: 37.99630728624906
Model iJN1463.cmd: 8.372152500273041E-5
Model iMM904.cmd: 4.04493439876878E-6
Cycle 212
Total biomass:
Model iAF1260.cmd: 38.02738291603453
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Model iJN1463.cmd: 8.53595555700182E-5
Model iMM904.cmd: 4.132838462851524E-6
Cycle 213
Total biomass:
Model iAF1260.cmd: 38.03590131673321
Model iJN1463.cmd: 8.649165105770315E-5
Model iMM904.cmd: 4.1611159152005224E-6
Cycle 214
Total biomass:
Model iAF1260.cmd: 38.06393025069594
Model iJN1463.cmd: 8.763185706986964E-5
Model iMM904.cmd: 4.1655488014783446E-6
Cycle 215
Total biomass:
Model iAF1260.cmd: 38.08001437161106
Model iJN1463.cmd: 9.070199856374792E-5
Model iMM904.cmd: 4.246020581506782E-6
Cycle 216
Total biomass:
Model iAF1260.cmd: 38.13254382314814
Model iJN1463.cmd: 9.149404446166698E-5
Model iMM904.cmd: 4.290784827547872E-6
Cycle 217
Total biomass:
Model iAF1260.cmd: 38.1858585944655
Model iJN1463.cmd: 9.295011298135054E-5
Model iMM904.cmd: 4.371358360681193E-6
Cycle 218
Total biomass:
Model iAF1260.cmd: 38.281807797563964
Model iJN1463.cmd: 9.382556159887533E-5
Model iMM904.cmd: 4.371376649987359E-6
Cycle 219
Total biomass:
Model iAF1260.cmd: 38.33715439518254
Model iJN1463.cmd: 9.402940454919623E-5
Model iMM904.cmd: 4.376070957803556E-6
Cycle 220
Total biomass:
Model iAF1260.cmd: 38.352352127640664
Model iJN1463.cmd: 9.42965345148524E-5
Model iMM904.cmd: 4.3968851007190115E-6
Cycle 221
Total biomass:
Model iAF1260.cmd: 38.4093457566348
Model iJN1463.cmd: 9.454406010840281E-5
Model iMM904.cmd: 4.424810016469558E-6
Cycle 222
Total biomass:
Model iAF1260.cmd: 38.45917418096913
Model iJN1463.cmd: 9.4607895780394E-5
Model iMM904.cmd: 4.436390011713461E-6
Cycle 223
Total biomass:
Model iAF1260.cmd: 38.46320120674269
Model iJN1463.cmd: 9.594817533076574E-5
Model iMM904.cmd: 4.5259505552807235E-6
Cycle 224
Total biomass:
Model iAF1260.cmd: 38.501044641421394
Model iJN1463.cmd: 9.630884140316664E-5
Model iMM904.cmd: 4.561013719032166E-6
Cycle 225
Total biomass:
Model iAF1260.cmd: 38.57486546365135
Model iJN1463.cmd: 9.64620199936122E-5
Model iMM904.cmd: 4.592411993671277E-6
Cycle 226
Total biomass:
Model iAF1260.cmd: 38.63509747077333
Model iJN1463.cmd: 9.79070165484061E-5
Model iMM904.cmd: 4.683566016982234E-6
Cycle 227
Total biomass:
Model iAF1260.cmd: 38.67417352214304
Model iJN1463.cmd: 9.984508630774078E-5
Model iMM904.cmd: 4.817654994662526E-6
Cycle 228
Total biomass:
Model iAF1260.cmd: 38.723097371215616
Model iJN1463.cmd: 9.984408785945105E-5
Model iMM904.cmd: 4.817589835218528E-6
Cycle 229
```

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Total biomass:
Model iAF1260.cmd: 38.75863051580833
Model iJN1463.cmd: 1.0011779929544633E-4
Model iMM904.cmd: 4.842712434178976E-6
Cycle 230
Total biomass:
Model iAF1260.cmd: 38.78575742167454
Model iJN1463.cmd: 1.01448257150980054E-4
Model iMM904.cmd: 4.920325365968073E-6
Cycle 231
Total biomass:
Model iAF1260.cmd: 38.883987595495675
Model iJN1463.cmd: 1.0148335207346483E-4
Model iMM904.cmd: 4.929317954663747E-6
Cycle 232
Total biomass:
Model iAF1260.cmd: 38.98538782985261
Model iJN1463.cmd: 1.0334190109649711E-4
Model iMM904.cmd: 5.042170187909922E-6
Cycle 233
Total biomass:
Model iAF1260.cmd: 39.02430463864054
Model iJN1463.cmd: 1.0413652275705961E-4
Model iMM904.cmd: 5.1085208820937E-6
Cycle 234
Total biomass:
Model iAF1260.cmd: 39.101287871515055
Model iJN1463.cmd: 1.0418785936551817E-4
Model iMM904.cmd: 5.117185688116011E-6
Cycle 235
Total biomass:
Model iAF1260.cmd: 39.19026411062412
Model iJN1463.cmd: 1.0453168798278572E-4
Model iMM904.cmd: 5.147279412496876E-6
Cycle 236
Total biomass:
Model iAF1260.cmd: 39.269079659760564
Model iJN1463.cmd: 1.0463409512155063E-4
Model iMM904.cmd: 5.166457746163808E-6
Cycle 237
Total biomass:
Model iAF1260.cmd: 39.29294501023305
Model iJN1463.cmd: 1.0621303650962704E-4
Model iMM904.cmd: 5.256653922490987E-6
Cycle 238
Total biomass:
Model iAF1260.cmd: 39.32235890751628
Model iJN1463.cmd: 1.0786108599744928E-4
Model iMM904.cmd: 5.34279400310135E-6
Cycle 239
Total biomass:
Model iAF1260.cmd: 39.360293532264194
Model iJN1463.cmd: 1.0840198696489782E-4
Model iMM904.cmd: 5.383168073040514E-6
Cycle 240
Total biomass:
Model iAF1260.cmd: 39.42078389029395
Model iJN1463.cmd: 1.0840122873139858E-4
Model iMM904.cmd: 5.383207549303955E-6
Cycle 241
Total biomass:
Model iAF1260.cmd: 39.46734297824741
Model iJN1463.cmd: 1.093842760481515E-4
Model iMM904.cmd: 5.456499034914756E-6
Cycle 242
Total biomass:
Model iAF1260.cmd: 39.51221458872421
Model iJN1463.cmd: 1.0949273780682575E-4
Model iMM904.cmd: 5.471956033888174E-6
Cycle 243
Total biomass:
Model iAF1260.cmd: 39.537050063261084
Model iJN1463.cmd: 1.0976675504387277E-4
Model iMM904.cmd: 5.5206892767570924E-6
Cycle 244
Total biomass:
Model iAF1260.cmd: 39.558625258406174
Model iJN1463.cmd: 1.108531088036084E-4
Model iMM904.cmd: 5.596190623444903E-6
Cycle 245
Total biomass:
Model iAF1260.cmd: 39.59885443402465
Model iJN1463.cmd: 1.1204553680269525E-4
```

```
Model iMM904.cmd: 5.677761051176053E-6
Cycle 246
Total biomass:
Model iAF1260.cmd: 39.65415169138133
Model iJN1463.cmd: 1.151472329153355E-4
Model iMM904.cmd: 5.855723325675916E-6
Cycle 247
Total biomass:
Model iAF1260.cmd: 39.704168677059116
Model iJN1463.cmd: 1.1612014680816117E-4
Model iMM904.cmd: 5.921083663509151E-6
Cycle 248
Total biomass:
Model iAF1260.cmd: 39.7861187227897
Model iJN1463.cmd: 1.1645746731581656E-4
Model iMM904.cmd: 5.949105463194527E-6
Cycle 249
Total biomass:
Model iAF1260.cmd: 39.84161732915539
Model iJN1463.cmd: 1.17044630152090915E-4
Model iMM904.cmd: 5.988887248376162E-6
Cycle 250
Total biomass:
Model iAF1260.cmd: 39.85346355943323
Model iJN1463.cmd: 1.1806609732860452E-4
Model iMM904.cmd: 6.0517936431114095E-6
Cycle 251
Total biomass:
Model iAF1260.cmd: 39.93511659661309
Model iJN1463.cmd: 1.2107908381467109E-4
Model iMM904.cmd: 6.105879373398193E-6
Cycle 252
Total biomass:
Model iAF1260.cmd: 40.02548165783843
Model iJN1463.cmd: 1.2361311062809564E-4
Model iMM904.cmd: 6.185691715904174E-6
Cycle 253
Total biomass:
Model iAF1260.cmd: 40.0835765920666
Model iJN1463.cmd: 1.2475640056923662E-4
Model iMM904.cmd: 6.196800751405887E-6
Cycle 254
Total biomass:
Model iAF1260.cmd: 40.10715758710246
Model iJN1463.cmd: 1.2711384727661095E-4
Model iMM904.cmd: 6.303961863558101E-6
Cycle 255
Total biomass:
Model iAF1260.cmd: 40.156546286037425
Model iJN1463.cmd: 1.2850041196730376E-4
Model iMM904.cmd: 6.316469317791287E-6
Cycle 256
Total biomass:
Model iAF1260.cmd: 40.195022553722325
Model iJN1463.cmd: 1.2986527092774392E-4
Model iMM904.cmd: 6.389480463430269E-6
Cycle 257
Total biomass:
Model iAF1260.cmd: 40.245364800914416
Model iJN1463.cmd: 1.3000858265344893E-4
Model iMM904.cmd: 6.402157659396732E-6
Cycle 258
Total biomass:
Model iAF1260.cmd: 40.26918462718025
Model iJN1463.cmd: 1.3000728256762248E-4
Model iMM904.cmd: 6.402093677516641E-6
Cycle 259
Total biomass:
Model iAF1260.cmd: 40.28672560245255
Model iJN1463.cmd: 1.3156420740374555E-4
Model iMM904.cmd: 6.4900756767799075E-6
Cycle 260
Total biomass:
Model iAF1260.cmd: 40.32004083775319
Model iJN1463.cmd: 1.3242138765567088E-4
Model iMM904.cmd: 6.543525022773198E-6
Cycle 261
Total biomass:
Model iAF1260.cmd: 40.385811536828626
Model iJN1463.cmd: 1.3260139577520489E-4
Model iMM904.cmd: 6.558299776788739E-6
Cycle 262
Total biomass:
```

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Model iAF1260.cmd: 40.440256859706444
Model iJN1463.cmd: 1.3742828515944558E-4
Model iMM904.cmd: 6.748104355112572E-6
Cycle 263
Total biomass:
Model iAF1260.cmd: 40.45285656964414
Model iJN1463.cmd: 1.4264269076435685E-4
Model iMM904.cmd: 6.935919451465424E-6
Cycle 264
Total biomass:
Model iAF1260.cmd: 40.49222216609214
Model iJN1463.cmd: 1.4525808666668844E-4
Model iMM904.cmd: 6.981138324719594E-6
Cycle 265
Total biomass:
Model iAF1260.cmd: 40.58137456421067
Model iJN1463.cmd: 1.4656223037270966E-4
Model iMM904.cmd: 6.997506472569811E-6
Cycle 266
Total biomass:
Model iAF1260.cmd: 40.60671409583213
Model iJN1463.cmd: 1.4786878717060677E-4
Model iMM904.cmd: 7.063679714561346E-6
Cycle 267
Total biomass:
Model iAF1260.cmd: 40.62840405599641
Model iJN1463.cmd: 1.5156848703437337E-4
Model iMM904.cmd: 7.187167029343868E-6
Cycle 268
Total biomass:
Model iAF1260.cmd: 40.70211990882925
Model iJN1463.cmd: 1.5235437659166847E-4
Model iMM904.cmd: 7.232256528055028E-6
Cycle 269
Total biomass:
Model iAF1260.cmd: 40.7321901473165
Model iJN1463.cmd: 1.5235285304790257E-4
Model iMM904.cmd: 7.232184206520932E-6
Cycle 270
Total biomass:
Model iAF1260.cmd: 40.74088050183545
Model iJN1463.cmd: 1.531935982183248E-4
Model iMM904.cmd: 7.309948049768277E-6
Cycle 271
Total biomass:
Model iAF1260.cmd: 40.801398692299855
Model iJN1463.cmd: 1.5371230837235735E-4
Model iMM904.cmd: 7.3660195236544076E-6
Cycle 272
Total biomass:
Model iAF1260.cmd: 40.84353270784276
Model iJN1463.cmd: 1.565304777139785E-4
Model iMM904.cmd: 7.50095233574004E-6
Cycle 273
Total biomass:
Model iAF1260.cmd: 40.87733687755401
Model iJN1463.cmd: 1.579230632137973E-4
Model iMM904.cmd: 7.574226895486553E-6
Cycle 274
Total biomass:
Model iAF1260.cmd: 40.89071246824308
Model iJN1463.cmd: 1.6122092051772986E-4
Model iMM904.cmd: 7.643548723140657E-6
Cycle 275
Total biomass:
Model iAF1260.cmd: 40.93488761469321
Model iJN1463.cmd: 1.6654185882812196E-4
Model iMM904.cmd: 7.807117149866498E-6
Cycle 276
Total biomass:
Model iAF1260.cmd: 40.98440928404924
Model iJN1463.cmd: 1.716104924425405E-4
Model iMM904.cmd: 7.955958506222935E-6
Cycle 277
Total biomass:
Model iAF1260.cmd: 41.020754926435686
Model iJN1463.cmd: 1.7451568537790661E-4
Model iMM904.cmd: 8.03621000132972E-6
Cycle 278
Total biomass:
Model iAF1260.cmd: 41.10651036542701
Model iJN1463.cmd: 1.7738678266643923E-4
Model iMM904.cmd: 8.14532285965505E-6
```

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Cycle 279
Total biomass:
Model iAF1260.cmd: 41.147978777888284
Model iJN1463.cmd: 1.8009330203764935E-4
Model iMM904.cmd: 8.258893926697498E-6
Cycle 280
Total biomass:
Model iAF1260.cmd: 41.227653298324256
Model iJN1463.cmd: 1.8052362503714363E-4
Model iMM904.cmd: 8.298858112722531E-6
Cycle 281
Total biomass:
Model iAF1260.cmd: 41.28359442906393
Model iJN1463.cmd: 1.8179771277999131E-4
Model iMM904.cmd: 8.359486541880714E-6
Cycle 282
Total biomass:
Model iAF1260.cmd: 41.29722913444599
Model iJN1463.cmd: 1.883676241178296E-4
Model iMM904.cmd: 8.619693906263805E-6
Cycle 283
Total biomass:
Model iAF1260.cmd: 41.32635674940306
Model iJN1463.cmd: 1.883657404415884E-4
Model iMM904.cmd: 8.619607836218251E-6
Cycle 284
Total biomass:
Model iAF1260.cmd: 41.380870831488615
Model iJN1463.cmd: 1.914581725315889E-4
Model iMM904.cmd: 8.738737556684731E-6
Cycle 285
Total biomass:
Model iAF1260.cmd: 41.40662211500963
Model iJN1463.cmd: 1.9769176347317845E-4
Model iMM904.cmd: 8.973774967909212E-6
Cycle 286
Total biomass:
Model iAF1260.cmd: 41.47255823616973
Model iJN1463.cmd: 1.9815037346778298E-4
Model iMM904.cmd: 9.00111440284874E-6
Cycle 287
Total biomass:
Model iAF1260.cmd: 41.535815415278236
Model iJN1463.cmd: 2.0016387280578078E-4
Model iMM904.cmd: 9.09967537182943E-6
Cycle 288
Total biomass:
Model iAF1260.cmd: 41.54519916457202
Model iJN1463.cmd: 2.0430037015558842E-4
Model iMM904.cmd: 9.264015977441627E-6
Cycle 289
Total biomass:
Model iAF1260.cmd: 41.55158742708317
Model iJN1463.cmd: 2.04298343130866815E-4
Model iMM904.cmd: 9.263931766628076E-6
Cycle 290
Total biomass:
Model iAF1260.cmd: 41.60035344323942
Model iJN1463.cmd: 2.0815043529081876E-4
Model iMM904.cmd: 9.39905059587411E-6
Cycle 291
Total biomass:
Model iAF1260.cmd: 41.623800099711985
Model iJN1463.cmd: 2.087606285651923E-4
Model iMM904.cmd: 9.447219364599608E-6
Cycle 292
Total biomass:
Model iAF1260.cmd: 41.66380064959197
Model iJN1463.cmd: 2.110573514195143E-4
Model iMM904.cmd: 9.602748487863463E-6
Cycle 293
Total biomass:
Model iAF1260.cmd: 41.731412948734516
Model iJN1463.cmd: 2.1587110611677899E-4
Model iMM904.cmd: 9.895189850028813E-6
Cycle 294
Total biomass:
Model iAF1260.cmd: 41.80400986065208
Model iJN1463.cmd: 2.1660949990861392E-4
Model iMM904.cmd: 9.956259707497076E-6
Cycle 295
Total biomass:
Model iAF1260.cmd: 41.90424898631851
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Model iJN1463.cmd: 2.1742331769545125E-4
Model iMM904.cmd: 1.0023340530843741E-5
Cycle 296
Total biomass:
Model iAF1260.cmd: 41.946665813785536
Model iJN1463.cmd: 2.190569155319598E-4
Model iMM904.cmd: 1.010998167460653E-5
Cycle 297
Total biomass:
Model iAF1260.cmd: 41.955037040974446
Model iJN1463.cmd: 2.222999895128104E-4
Model iMM904.cmd: 1.022920938609319E-5
Cycle 298
Total biomass:
Model iAF1260.cmd: 42.01746334436361
Model iJN1463.cmd: 2.222977665129153E-4
Model iMM904.cmd: 1.0229108161235158E-5
Cycle 299
Total biomass:
Model iAF1260.cmd: 42.060662284527204
Model iJN1463.cmd: 2.2662013234315336E-4
Model iMM904.cmd: 1.0382448384932397E-5
Cycle 300
Total biomass:
Model iAF1260.cmd: 42.08114127725108
Model iJN1463.cmd: 2.3268180187796E-4
Model iMM904.cmd: 1.06671828838115414E-5
Cycle 301
Total biomass:
Model iAF1260.cmd: 42.13394243242999
Model iJN1463.cmd: 2.3995851785012007E-4
Model iMM904.cmd: 1.1058431574469106E-5
Cycle 302
Total biomass:
Model iAF1260.cmd: 42.17033919886353
Model iJN1463.cmd: 2.477712696569328E-4
Model iMM904.cmd: 1.1395837376809637E-5
Cycle 303
Total biomass:
Model iAF1260.cmd: 42.19811062904415
Model iJN1463.cmd: 2.5937897681142113E-4
Model iMM904.cmd: 1.1913762489859969E-5
Cycle 304
Total biomass:
Model iAF1260.cmd: 42.21695908477763
Model iJN1463.cmd: 2.694321785822288E-4
Model iMM904.cmd: 1.2372600963674176E-5
Cycle 305
Total biomass:
Model iAF1260.cmd: 42.256887183460094
Model iJN1463.cmd: 2.751736225357398E-4
Model iMM904.cmd: 1.2616294411388348E-5
Cycle 306
Total biomass:
Model iAF1260.cmd: 42.30159051817601
Model iJN1463.cmd: 2.7941106621705736E-4
Model iMM904.cmd: 1.276575731573E-5
Cycle 307
Total biomass:
Model iAF1260.cmd: 42.365963559911016
Model iJN1463.cmd: 2.8717850988464706E-4
Model iMM904.cmd: 1.2984585472570945E-5
Cycle 308
Total biomass:
Model iAF1260.cmd: 42.44887046548622
Model iJN1463.cmd: 2.949506455912512E-4
Model iMM904.cmd: 1.3140220508693885E-5
Cycle 309
Total biomass:
Model iAF1260.cmd: 42.475515865575574
Model iJN1463.cmd: 2.9689704943306096E-4
Model iMM904.cmd: 1.3140089196513138E-5
Cycle 310
Total biomass:
Model iAF1260.cmd: 42.5342281955918
Model iJN1463.cmd: 2.9781341266765213E-4
Model iMM904.cmd: 1.3140507802923125E-5
Cycle 311
Total biomass:
Model iAF1260.cmd: 42.605164705473314
Model iJN1463.cmd: 3.023352678414869E-4
Model iMM904.cmd: 1.3286180830391476E-5
Cycle 312
```

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Total biomass:
Model iAF1260.cmd: 42.697320686492986
Model iJN1463.cmd: 3.0233224448880853E-4
Model iMM904.cmd: 1.3286048092506695E-5
Cycle 313
Total biomass:
Model iAF1260.cmd: 42.7295659748498
Model iJN1463.cmd: 3.083800888191091E-4
Model iMM904.cmd: 1.3499617162237125E-5
Cycle 314
Total biomass:
Model iAF1260.cmd: 42.7771094407362
Model iJN1463.cmd: 3.108376805809157E-4
Model iMM904.cmd: 1.3601518485883277E-5
Cycle 315
Total biomass:
Model iAF1260.cmd: 42.81505306298459
Model iJN1463.cmd: 3.1558080675635414E-4
Model iMM904.cmd: 1.3741965487149076E-5
Cycle 316
Total biomass:
Model iAF1260.cmd: 42.849464794542975
Model iJN1463.cmd: 3.193879927784341E-4
Model iMM904.cmd: 1.3896242945105177E-5
Cycle 317
Total biomass:
Model iAF1260.cmd: 42.87903700687923
Model iJN1463.cmd: 3.2380248185049325E-4
Model iMM904.cmd: 1.4067917418216242E-5
Cycle 318
Total biomass:
Model iAF1260.cmd: 42.95686952054076
Model iJN1463.cmd: 3.267738535895486E-4
Model iMM904.cmd: 1.419056340947654E-5
Cycle 319
Total biomass:
Model iAF1260.cmd: 42.97726766422086
Model iJN1463.cmd: 3.3461060622495315E-4
Model iMM904.cmd: 1.4346469927488976E-5
Cycle 320
Total biomass:
Model iAF1260.cmd: 43.00163785061331
Model iJN1463.cmd: 3.438464528600087E-4
Model iMM904.cmd: 1.4630822939204708E-5
Cycle 321
Total biomass:
Model iAF1260.cmd: 43.048415117841486
Model iJN1463.cmd: 3.5148820184224215E-4
Model iMM904.cmd: 1.4820447961999389E-5
Cycle 322
Total biomass:
Model iAF1260.cmd: 43.126986637934934
Model iJN1463.cmd: 3.517188335574641E-4
Model iMM904.cmd: 1.4820299762860083E-5
Cycle 323
Total biomass:
Model iAF1260.cmd: 43.15376503853406
Model iJN1463.cmd: 3.5840588141968074E-4
Model iMM904.cmd: 1.5044703900198449E-5
Cycle 324
Total biomass:
Model iAF1260.cmd: 43.21540480804646
Model iJN1463.cmd: 3.6039834003914165E-4
Model iMM904.cmd: 1.5126338335786075E-5
Cycle 325
Total biomass:
Model iAF1260.cmd: 43.301523469490725
Model iJN1463.cmd: 3.6942739701364714E-4
Model iMM904.cmd: 1.529254956586357E-5
Cycle 326
Total biomass:
Model iAF1260.cmd: 43.35286541360424
Model iJN1463.cmd: 3.7649164787131336E-4
Model iMM904.cmd: 1.5484579067884402E-5
Cycle 327
Total biomass:
Model iAF1260.cmd: 43.428884324834584
Model iJN1463.cmd: 3.832916021077358E-4
Model iMM904.cmd: 1.564642419547995E-5
Cycle 328
Total biomass:
Model iAF1260.cmd: 43.494876648473706
Model iJN1463.cmd: 3.8985997816974913E-4
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Model iMM904.cmd: 1.582582778409199E-5
Cycle 329
Total biomass:
Model iAF1260.cmd: 43.5639640800041
Model iJN1463.cmd: 3.966155921871602E-4
Model iMM904.cmd: 1.5963965733356656E-5
Cycle 330
Total biomass:
Model iAF1260.cmd: 43.617705658405406
Model iJN1463.cmd: 4.0132059993567746E-4
Model iMM904.cmd: 1.6152224247371676E-5
Cycle 331
Total biomass:
Model iAF1260.cmd: 43.6833927859142
Model iJN1463.cmd: 4.073326459103715E-4
Model iMM904.cmd: 1.637235575125022E-5
Cycle 332
Total biomass:
Model iAF1260.cmd: 43.742370069420254
Model iJN1463.cmd: 4.167134679782002E-4
Model iMM904.cmd: 1.654591167326575E-5
Cycle 333
Total biomass:
Model iAF1260.cmd: 43.779934702469426
Model iJN1463.cmd: 4.274875531431188E-4
Model iMM904.cmd: 1.6812495987435362E-5
Cycle 334
Total biomass:
Model iAF1260.cmd: 43.78888902462558
Model iJN1463.cmd: 4.335919216878213E-4
Model iMM904.cmd: 1.695688812083012E-5
Cycle 335
Total biomass:
Model iAF1260.cmd: 43.811898165572885
Model iJN1463.cmd: 4.4692307450095944E-4
Model iMM904.cmd: 1.729078255394797E-5
Cycle 336
Total biomass:
Model iAF1260.cmd: 43.845800284380566
Model iJN1463.cmd: 4.504640019209307E-4
Model iMM904.cmd: 1.7290610709071894E-5
Cycle 337
Total biomass:
Model iAF1260.cmd: 43.89350552413628
Model iJN1463.cmd: 4.584638110130595E-4
Model iMM904.cmd: 1.7478744724234383E-5
Cycle 338
Total biomass:
Model iAF1260.cmd: 43.927077061704594
Model iJN1463.cmd: 4.5845922637494964E-4
Model iMM904.cmd: 1.7478570651544703E-5
Cycle 339
Total biomass:
Model iAF1260.cmd: 43.997151695674
Model iJN1463.cmd: 4.584546417826859E-4
Model iMM904.cmd: 1.74783962988503E-5
Cycle 340
Total biomass:
Model iAF1260.cmd: 44.06858072504776
Model iJN1463.cmd: 4.5845005723626835E-4
Model iMM904.cmd: 1.747822207850806E-5
Cycle 341
Total biomass:
Model iAF1260.cmd: 44.139808655264474
Model iJN1463.cmd: 4.6511987984077484E-4
Model iMM904.cmd: 1.7656772776123127E-5
Cycle 342
Total biomass:
Model iAF1260.cmd: 44.160933070962834
Model iJN1463.cmd: 4.78374056078738E-4
Model iMM904.cmd: 1.806668631996511E-5
Cycle 343
Total biomass:
Model iAF1260.cmd: 44.20686042524206
Model iJN1463.cmd: 4.803306075821296E-4
Model iMM904.cmd: 1.8134646803105283E-5
Cycle 344
Total biomass:
Model iAF1260.cmd: 44.2655967279748
Model iJN1463.cmd: 4.915682541652187E-4
Model iMM904.cmd: 1.8484416562494874E-5
Cycle 345
Total biomass:
```

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Model iAF1260.cmd: 44.34247374136241
Model iJN1463.cmd: 4.969608116017032E-4
Model iMM904.cmd: 1.8636341906426174E-5
Cycle 346
Total biomass:
Model iAF1260.cmd: 44.4168145035358
Model iJN1463.cmd: 5.040981185799198E-4
Model iMM904.cmd: 1.884254223415603E-5
Cycle 347
Total biomass:
Model iAF1260.cmd: 44.465640448599444
Model iJN1463.cmd: 5.064518664237009E-4
Model iMM904.cmd: 1.8921780716202885E-5
Cycle 348
Total biomass:
Model iAF1260.cmd: 44.52802347909204
Model iJN1463.cmd: 5.154317612968155E-4
Model iMM904.cmd: 1.909772280559622E-5
Cycle 349
Total biomass:
Model iAF1260.cmd: 44.55050832761631
Model iJN1463.cmd: 5.267016320460213E-4
Model iMM904.cmd: 1.9394958642980367E-5
Cycle 350
Total biomass:
Model iAF1260.cmd: 44.58597682532766
Model iJN1463.cmd: 5.409764094523342E-4
Model iMM904.cmd: 1.980298936151386E-5
Cycle 351
Total biomass:
Model iAF1260.cmd: 44.65188831877478
Model iJN1463.cmd: 5.472027947799954E-4
Model iMM904.cmd: 2.0000011268803455E-5
Cycle 352
Total biomass:
Model iAF1260.cmd: 44.70657306250929
Model iJN1463.cmd: 5.656217220304784E-4
Model iMM904.cmd: 2.055105607014996E-5
Cycle 353
Total biomass:
Model iAF1260.cmd: 44.77263061917557
Model iJN1463.cmd: 5.747782747052258E-4
Model iMM904.cmd: 2.0833903390614294E-5
Cycle 354
Total biomass:
Model iAF1260.cmd: 44.841522735446
Model iJN1463.cmd: 5.747725301393101E-4
Model iMM904.cmd: 2.0833695051580393E-5
Cycle 355
Total biomass:
Model iAF1260.cmd: 44.90459868015143
Model iJN1463.cmd: 5.845005510334523E-4
Model iMM904.cmd: 2.111625445970969E-5
Cycle 356
Total biomass:
Model iAF1260.cmd: 44.922861207726825
Model iJN1463.cmd: 5.919327988331504E-4
Model iMM904.cmd: 2.130922733946518E-5
Cycle 357
Total biomass:
Model iAF1260.cmd: 44.972086655697474
Model iJN1463.cmd: 6.031456504963116E-4
Model iMM904.cmd: 2.1624753003877363E-5
Cycle 358
Total biomass:
Model iAF1260.cmd: 45.0123897667539
Model iJN1463.cmd: 6.104707072983294E-4
Model iMM904.cmd: 2.185520467918078E-5
Cycle 359
Total biomass:
Model iAF1260.cmd: 45.09718212469437
Model iJN1463.cmd: 6.189241357266504E-4
Model iMM904.cmd: 2.210196073574236E-5
Cycle 360
Total biomass:
Model iAF1260.cmd: 45.17877644354555
Model iJN1463.cmd: 6.230673769025665E-4
Model iMM904.cmd: 2.2101739746422877E-5
Cycle 361
Total biomass:
Model iAF1260.cmd: 45.23254991900659
Model iJN1463.cmd: 6.2657750477687E-4
Model iMM904.cmd: 2.2101518757216417E-5
```

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Cycle 362
Total biomass:
Model iAF1260.cmd: 45.25432509480375
Model iJN1463.cmd: 6.385911431483587E-4
Model iMM904.cmd: 2.2439022600476632E-5
Cycle 363
Total biomass:
Model iAF1260.cmd: 45.324273489529496
Model iJN1463.cmd: 6.58758009289393E-4
Model iMM904.cmd: 2.297772235480933E-5
Cycle 364
Total biomass:
Model iAF1260.cmd: 45.39868200268928
Model iJN1463.cmd: 6.66754253025924E-4
Model iMM904.cmd: 2.32332229520118E-5
Cycle 365
Total biomass:
Model iAF1260.cmd: 45.43364865090534
Model iJN1463.cmd: 6.667984415879191E-4
Model iMM904.cmd: 2.3247405452113675E-5
Cycle 366
Total biomass:
Model iAF1260.cmd: 45.50512601532043
Model iJN1463.cmd: 6.667917736035033E-4
Model iMM904.cmd: 2.324717298790405E-5
Cycle 367
Total biomass:
Model iAF1260.cmd: 45.56670300581183
Model iJN1463.cmd: 6.749899332462147E-4
Model iMM904.cmd: 2.3473763030445137E-5
Cycle 368
Total biomass:
Model iAF1260.cmd: 45.61503859831616
Model iJN1463.cmd: 6.815624547897921E-4
Model iMM904.cmd: 2.3646794061480286E-5
Cycle 369
Total biomass:
Model iAF1260.cmd: 45.67459546483104
Model iJN1463.cmd: 6.848911972449215E-4
Model iMM904.cmd: 2.3665170924244516E-5
Cycle 370
Total biomass:
Model iAF1260.cmd: 45.69217913391638
Model iJN1463.cmd: 7.004516815968589E-4
Model iMM904.cmd: 2.4048949102962242E-5
Cycle 371
Total biomass:
Model iAF1260.cmd: 45.726505332351216
Model iJN1463.cmd: 7.120644053138469E-4
Model iMM904.cmd: 2.4323819810029453E-5
Cycle 372
Total biomass:
Model iAF1260.cmd: 45.785878979450615
Model iJN1463.cmd: 7.205267632968396E-4
Model iMM904.cmd: 2.4514924943955062E-5
Cycle 373
Total biomass:
Model iAF1260.cmd: 45.860839047414736
Model iJN1463.cmd: 7.385130776525171E-4
Model iMM904.cmd: 2.4991183512494973E-5
Cycle 374
Total biomass:
Model iAF1260.cmd: 45.92412142228197
Model iJN1463.cmd: 7.430841270198081E-4
Model iMM904.cmd: 2.5126008612454465E-5
Cycle 375
Total biomass:
Model iAF1260.cmd: 45.99151749165108
Model iJN1463.cmd: 7.479864121165916E-4
Model iMM904.cmd: 2.5273786728411425E-5
Cycle 376
Total biomass:
Model iAF1260.cmd: 46.03864585168927
Model iJN1463.cmd: 7.651741339005128E-4
Model iMM904.cmd: 2.573519555833271E-5
Cycle 377
Total biomass:
Model iAF1260.cmd: 46.175212305452035
Model iJN1463.cmd: 7.651665047766171E-4
Model iMM904.cmd: 2.573494781497899E-5
Cycle 378
Total biomass:
Model iAF1260.cmd: 46.22565471762727
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Model iJN1463.cmd: 7.754265341727006E-4
Model iMM904.cmd: 2.602411843442931E-5
Cycle 379
Total biomass:
Model iAF1260.cmd: 46.242396277954064
Model iJN1463.cmd: 7.920931753748836E-4
Model iMM904.cmd: 2.648389651331925E-5
Cycle 380
Total biomass:
Model iAF1260.cmd: 46.302762303603494
Model iJN1463.cmd: 8.014297362715227E-4
Model iMM904.cmd: 2.6739047284531958E-5
Cycle 381
Total biomass:
Model iAF1260.cmd: 46.32039998974018
Model iJN1463.cmd: 8.241130754575298E-4
Model iMM904.cmd: 2.7321205278291695E-5
Cycle 382
Total biomass:
Model iAF1260.cmd: 46.38635446801251
Model iJN1463.cmd: 8.423746295655929E-4
Model iMM904.cmd: 2.7843609195502757E-5
Cycle 383
Total biomass:
Model iAF1260.cmd: 46.45615728528257
Model iJN1463.cmd: 8.524007073462894E-4
Model iMM904.cmd: 2.81074516390003547E-5
Cycle 384
Total biomass:
Model iAF1260.cmd: 46.532638764115696
Model iJN1463.cmd: 8.608438635587689E-4
Model iMM904.cmd: 2.8328411173400605E-5
Cycle 385
Total biomass:
Model iAF1260.cmd: 46.58493361010672
Model iJN1463.cmd: 8.696185691461044E-4
Model iMM904.cmd: 2.857122285200051E-5
Cycle 386
Total biomass:
Model iAF1260.cmd: 46.60536212583609
Model iJN1463.cmd: 8.787183978693614E-4
Model iMM904.cmd: 2.8828745462534654E-5
Cycle 387
Total biomass:
Model iAF1260.cmd: 46.669997386880596
Model iJN1463.cmd: 8.891551518230867E-4
Model iMM904.cmd: 2.915198656328071E-5
Cycle 388
Total biomass:
Model iAF1260.cmd: 46.74210125347635
Model iJN1463.cmd: 8.994435637869415E-4
Model iMM904.cmd: 2.9424908845103462E-5
Cycle 389
Total biomass:
Model iAF1260.cmd: 46.79153725160863
Model iJN1463.cmd: 9.209383576445243E-4
Model iMM904.cmd: 3.0024009336208E-5
Cycle 390
Total biomass:
Model iAF1260.cmd: 46.8171522618469
Model iJN1463.cmd: 9.303212603521061E-4
Model iMM904.cmd: 3.0267633605275502E-5
Cycle 391
Total biomass:
Model iAF1260.cmd: 46.865294417772965
Model iJN1463.cmd: 9.415420496444423E-4
Model iMM904.cmd: 3.061231974253333E-5
Cycle 392
Total biomass:
Model iAF1260.cmd: 46.900122522284754
Model iJN1463.cmd: 9.512726623779131E-4
Model iMM904.cmd: 3.088913617602463E-5
Cycle 393
Total biomass:
Model iAF1260.cmd: 46.970532070762204
Model iJN1463.cmd: 9.628107518582593E-4
Model iMM904.cmd: 3.125761489373925E-5
Cycle 394
Total biomass:
Model iAF1260.cmd: 47.06571311266432
Model iJN1463.cmd: 9.658484830180668E-4
Model iMM904.cmd: 3.137254004461119E-5
Cycle 395
```

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Total biomass:
Model iAF1260.cmd: 47.12576633197667
Model iJN1463.cmd: 9.703938482056276E-4
Model iMM904.cmd: 3.152517203250327E-5
Cycle 396
Total biomass:
Model iAF1260.cmd: 47.19614520713921
Model iJN1463.cmd: 9.807052224992587E-4
Model iMM904.cmd: 3.1816459552006714E-5
Cycle 397
Total biomass:
Model iAF1260.cmd: 47.26142672734607
Model iJN1463.cmd: 9.907199501494558E-4
Model iMM904.cmd: 3.210667394489364E-5
Cycle 398
Total biomass:
Model iAF1260.cmd: 47.297367113292154
Model iJN1463.cmd: 0.0010022242826581034
Model iMM904.cmd: 3.244179139657745E-5
Cycle 399
Total biomass:
Model iAF1260.cmd: 47.34787015864017
Model iJN1463.cmd: 0.001030449532982517
Model iMM904.cmd: 3.3237911692379076E-5
Cycle 400
Total biomass:
Model iAF1260.cmd: 47.409010952119964
Model iJN1463.cmd: 0.0010367100847772832
Model iMM904.cmd: 3.340520229626326E-5
Cycle 401
Total biomass:
Model iAF1260.cmd: 47.47315647268244
Model iJN1463.cmd: 0.0010418568191128076
Model iMM904.cmd: 3.353540269534689E-5
Cycle 402
Total biomass:
Model iAF1260.cmd: 47.528975386568085
Model iJN1463.cmd: 0.0010704458682637384
Model iMM904.cmd: 3.427290098598085E-5
Cycle 403
Total biomass:
Model iAF1260.cmd: 47.604449182693514
Model iJN1463.cmd: 0.0010704351638238488
Model iMM904.cmd: 3.4272558256971E-5
Cycle 404
Total biomass:
Model iAF1260.cmd: 47.66866593680344
Model iJN1463.cmd: 0.0010815397958088546
Model iMM904.cmd: 3.456783309592136E-5
Cycle 405
Total biomass:
Model iAF1260.cmd: 47.70299190493941
Model iJN1463.cmd: 0.0010941179593222032
Model iMM904.cmd: 3.48693551968023E-5
Cycle 406
Total biomass:
Model iAF1260.cmd: 47.77288918405461
Model iJN1463.cmd: 0.0011129825083065982
Model iMM904.cmd: 3.5341101034833216E-5
Cycle 407
Total biomass:
Model iAF1260.cmd: 47.81916580274862
Model iJN1463.cmd: 0.0011188718089441315
Model iMM904.cmd: 3.5480103093217535E-5
Cycle 408
Total biomass:
Model iAF1260.cmd: 47.90514019004096
Model iJN1463.cmd: 0.0011265534556719721
Model iMM904.cmd: 3.5660583417205694E-5
Cycle 409
Total biomass:
Model iAF1260.cmd: 47.996808380539335
Model iJN1463.cmd: 0.001138709042275543
Model iMM904.cmd: 3.5999773515364966E-5
Cycle 410
Total biomass:
Model iAF1260.cmd: 48.02777304332311
Model iJN1463.cmd: 0.0011449826997885918
Model iMM904.cmd: 3.614023920367492E-5
Cycle 411
Total biomass:
Model iAF1260.cmd: 48.09987854856713
Model iJN1463.cmd: 0.0011647619535936572
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Model iMM904.cmd: 3.663239588457929E-5
Cycle 412
Total biomass:
Model iAF1260.cmd: 48.18152033644229
Model iJN1463.cmd: 0.0011714450726287664
Model iMM904.cmd: 3.679115377219622E-5
Cycle 413
Total biomass:
Model iAF1260.cmd: 48.23178382186175
Model iJN1463.cmd: 0.0011963197951053467
Model iMM904.cmd: 3.748288523599E-5
Cycle 414
Total biomass:
Model iAF1260.cmd: 48.29838900540976
Model iJN1463.cmd: 0.0012046688871696844
Model iMM904.cmd: 3.771502704486998E-5
Cycle 415
Total biomass:
Model iAF1260.cmd: 48.3689029471631
Model iJN1463.cmd: 0.0012419104478426396
Model iMM904.cmd: 3.882920832430481E-5
Cycle 416
Total biomass:
Model iAF1260.cmd: 48.41056802720204
Model iJN1463.cmd: 0.0012667992633025931
Model iMM904.cmd: 3.956930443921695E-5
Cycle 417
Total biomass:
Model iAF1260.cmd: 48.49199057703909
Model iJN1463.cmd: 0.0012790096343318924
Model iMM904.cmd: 3.9941754823975374E-5
Cycle 418
Total biomass:
Model iAF1260.cmd: 48.554070307890804
Model iJN1463.cmd: 0.0013123483303292829
Model iMM904.cmd: 4.1540429336593965E-5
Cycle 419
Total biomass:
Model iAF1260.cmd: 48.62787629308302
Model iJN1463.cmd: 0.0013209747587507841
Model iMM904.cmd: 4.190962974864018E-5
Cycle 420
Total biomass:
Model iAF1260.cmd: 48.66178660464758
Model iJN1463.cmd: 0.001343047254555609
Model iMM904.cmd: 4.2945048131924474E-5
Cycle 421
Total biomass:
Model iAF1260.cmd: 48.719010198 71731
Model iJN1463.cmd: 0.0013566738245986633
Model iMM904.cmd: 4.3630031306148694E-5
Cycle 422
Total biomass:
Model iAF1260.cmd: 48.75325818153853
Model iJN1463.cmd: 0.0013837160436479072
Model iMM904.cmd: 4.447103883288148E-5
Cycle 423
Total biomass:
Model iAF1260.cmd: 48.82601656478257
Model iJN1463.cmd: 0.0014288696687228652
Model iMM904.cmd: 4.586917556856651E-5
Cycle 424
Total biomass:
Model iAF1260.cmd: 48.87870250130706
Model iJN1463.cmd: 0.0014717138390941365
Model iMM904.cmd: 4.723543775653219E-5
Cycle 425
Total biomass:
Model iAF1260.cmd: 48.954840141395934
Model iJN1463.cmd: 0.0014862206405929419
Model iMM904.cmd: 4.7718070915282896E-5
Cycle 426
Total biomass:
Model iAF1260.cmd: 49.0115191411689
Model iJN1463.cmd: 0.0015011091031312273
Model iMM904.cmd: 4.8166047639015724E-5
Cycle 427
Total biomass:
Model iAF1260.cmd: 49.028710010370844
Model iJN1463.cmd: 0.0015167291002876303
Model iMM904.cmd: 4.885102166886985E-5
Cycle 428
Total biomass:
```

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Model iAF1260.cmd: 49.046307443042245
Model iJN1463.cmd: 0.001562916460032545
Model iMM904.cmd: 5.0434823109623814E-5
Cycle 429
Total biomass:
Model iAF1260.cmd: 49.10736605826441
Model iJN1463.cmd: 0.0015629008308679455
Model iMM904.cmd: 5.0434318761392734E-5
Cycle 430
Total biomass:
Model iAF1260.cmd: 49.16827926097058
Model iJN1463.cmd: 0.001573015837322771
Model iMM904.cmd: 5.0734204319525436E-5
Cycle 431
Total biomass:
Model iAF1260.cmd: 49.190096250168956
Model iJN1463.cmd: 0.0016154253827690345
Model iMM904.cmd: 5.204918041780204E-5
Cycle 432
Total biomass:
Model iAF1260.cmd: 49.25615289562295
Model iJN1463.cmd: 0.0016397597773743753
Model iMM904.cmd: 5.273339141578523E-5
Cycle 433
Total biomass:
Model iAF1260.cmd: 49.32062889070695
Model iJN1463.cmd: 0.001647963994604202
Model iMM904.cmd: 5.292902333684249E-5
Cycle 434
Total biomass:
Model iAF1260.cmd: 49.41242973927637
Model iJN1463.cmd: 0.0016674250799674512
Model iMM904.cmd: 5.347277550331115E-5
Cycle 435
Total biomass:
Model iAF1260.cmd: 49.42942535681793
Model iJN1463.cmd: 0.001699888148790251
Model iMM904.cmd: 5.4570088518367245E-5
Cycle 436
Total biomass:
Model iAF1260.cmd: 49.47517812095963
Model iJN1463.cmd: 0.0017164507783588813
Model iMM904.cmd: 5.55418827184957E-5
Cycle 437
Total biomass:
Model iAF1260.cmd: 49.52479626887845
Model iJN1463.cmd: 0.0017443855915502359
Model iMM904.cmd: 5.6164381771727756E-5
Cycle 438
Total biomass:
Model iAF1260.cmd: 49.57481492744563
Model iJN1463.cmd: 0.0017577681152487446
Model iMM904.cmd: 5.6410914073517354E-5
Cycle 439
Total biomass:
Model iAF1260.cmd: 49.6431873959602
Model iJN1463.cmd: 0.0017889137054515206
Model iMM904.cmd: 5.729890430327102E-5
Cycle 440
Total biomass:
Model iAF1260.cmd: 49.68682518468496
Model iJN1463.cmd: 0.001791925445793604
Model iMM904.cmd: 5.7298332044887434E-5
Cycle 441
Total biomass:
Model iAF1260.cmd: 49.75984093472117
Model iJN1463.cmd: 0.001804121247276939
Model iMM904.cmd: 5.7687579683870734E-5
Cycle 442
Total biomass:
Model iAF1260.cmd: 49.8004612232126
Model iJN1463.cmd: 0.0018340391133152957
Model iMM904.cmd: 5.866223705976445E-5
Cycle 443
Total biomass:
Model iAF1260.cmd: 49.85083309556838
Model iJN1463.cmd: 0.0018437340775890867
Model iMM904.cmd: 5.892288308776814E-5
Cycle 444
Total biomass:
Model iAF1260.cmd: 49.90783344807202
Model iJN1463.cmd: 0.0018761766834338158
Model iMM904.cmd: 5.993016132874294E-5
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Cycle 445
Total biomass:
Model iAF1260.cmd: 49.96472158443027
Model iJN1463.cmd: 0.0019187506625359765
Model iMM904.cmd: 6.138733502522681E-5
Cycle 446
Total biomass:
Model iAF1260.cmd: 49.99360067819243
Model iJN1463.cmd: 0.0019468053102064014
Model iMM904.cmd: 6.233044393679265E-5
Cycle 447
Total biomass:
Model iAF1260.cmd: 50.023196612286874
Model iJN1463.cmd: 0.0019826320066557374
Model iMM904.cmd: 6.353883260896941E-5
Cycle 448
Total biomass:
Model iAF1260.cmd: 50.05496905438578
Model iJN1463.cmd: 0.0020367031528217266
Model iMM904.cmd: 6.555986296465087E-5
Cycle 449
Total biomass:
Model iAF1260.cmd: 50.099770147433006
Model iJN1463.cmd: 0.0020736870015669302
Model iMM904.cmd: 6.704443842866046E-5
Cycle 450
Total biomass:
Model iAF1260.cmd: 50.1552837211129
Model iJN1463.cmd: 0.0020940086134323584
Model iMM904.cmd: 6.791184694402244E-5
Cycle 451
Total biomass:
Model iAF1260.cmd: 50.23517007032863
Model iJN1463.cmd: 0.0021052840886255936
Model iMM904.cmd: 6.826710454740134E-5
Cycle 452
Total biomass:
Model iAF1260.cmd: 50.28312157633755
Model iJN1463.cmd: 0.002142079749119145
Model iMM904.cmd: 6.94439407290763E-5
Cycle 453
Total biomass:
Model iAF1260.cmd: 50.31588790074133
Model iJN1463.cmd: 0.002153469475022542
Model iMM904.cmd: 6.974889209174861E-5
Cycle 454
Total biomass:
Model iAF1260.cmd: 50.40166171647803
Model iJN1463.cmd: 0.0021534479404756272
Model iMM904.cmd: 6.974819473516525E-5
Cycle 455
Total biomass:
Model iAF1260.cmd: 50.49970325699634
Model iJN1463.cmd: 0.0021675077826293857
Model iMM904.cmd: 7.016859013514504E-5
Cycle 456
Total biomass:
Model iAF1260.cmd: 50.55020200861377
Model iJN1463.cmd: 0.0021674861075515603
Model iMM904.cmd: 7.016789030565535E-5
Cycle 457
Total biomass:
Model iAF1260.cmd: 50.64723253180626
Model iJN1463.cmd: 0.0021913830749052394
Model iMM904.cmd: 7.101052909702537E-5
Cycle 458
Total biomass:
Model iAF1260.cmd: 50.716711611823
Model iJN1463.cmd: 0.0022375571268665115
Model iMM904.cmd: 7.262779681890127E-5
Cycle 459
Total biomass:
Model iAF1260.cmd: 50.78732121065627
Model iJN1463.cmd: 0.0022699518601547366
Model iMM904.cmd: 7.377620811691725E-5
Cycle 460
Total biomass:
Model iAF1260.cmd: 50.834247116806864
Model iJN1463.cmd: 0.0023228447472190953
Model iMM904.cmd: 7.571324229168495E-5
Cycle 461
Total biomass:
Model iAF1260.cmd: 50.89794742753566
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Model iJN1463.cmd: 0.002344304392838339
Model iMM904.cmd: 7.663783420029149E-5
Cycle 462
Total biomass:
Model iAF1260.cmd: 50.976613349587005
Model iJN1463.cmd: 0.0023576879497282945
Model iMM904.cmd: 7.70364392532055E-5
Cycle 463
Total biomass:
Model iAF1260.cmd: 51.037209964301304
Model iJN1463.cmd: 0.002357664372966847
Model iMM904.cmd: 7.703567319955223E-5
Cycle 464
Total biomass:
Model iAF1260.cmd: 51.09804346762925
Model iJN1463.cmd: 0.0023715912250700317
Model iMM904.cmd: 7.742495208970578E-5
Cycle 465
Total biomass:
Model iAF1260.cmd: 51.13486899003502
Model iJN1463.cmd: 0.002448401730223023
Model iMM904.cmd: 8.04687134121777E-5
Cycle 466
Total biomass:
Model iAF1260.cmd: 51.17556389813966
Model iJN1463.cmd: 0.0024695730108994546
Model iMM904.cmd: 8.136361019694594E-5
Cycle 467
Total biomass:
Model iAF1260.cmd: 51.21058360461122
Model iJN1463.cmd: 0.0024846291179731676
Model iMM904.cmd: 8.18936212062748E-5
Cycle 468
Total biomass:
Model iAF1260.cmd: 51.2744475952496
Model iJN1463.cmd: 0.0025073642942674114
Model iMM904.cmd: 8.288849319050429E-5
Cycle 469
Total biomass:
Model iAF1260.cmd: 51.33413900794883
Model iJN1463.cmd: 0.002507339220630012
Model iMM904.cmd: 8.288766535344575E-5
Cycle 470
Total biomass:
Model iAF1260.cmd: 51.412755730637336
Model iJN1463.cmd: 0.002530910332924836
Model iMM904.cmd: 8.373407019632149E-5
Cycle 471
Total biomass:
Model iAF1260.cmd: 51.45859390386839
Model iJN1463.cmd: 0.0025308850238216353
Model iMM904.cmd: 8.373323310120727E-5
Cycle 472
Total biomass:
Model iAF1260.cmd: 51.51595003905597
Model iJN1463.cmd: 0.0025465290363541958
Model iMM904.cmd: 8.424685053662661E-5
Cycle 473
Total biomass:
Model iAF1260.cmd: 51.549519128576144
Model iJN1463.cmd: 0.0025667059092948
Model iMM904.cmd: 8.499411183927475E-5
Cycle 474
Total biomass:
Model iAF1260.cmd: 51.61482399174138
Model iJN1463.cmd: 0.0025666802902380294
Model iMM904.cmd: 8.49932842136994E-5
Cycle 475
Total biomass:
Model iAF1260.cmd: 51.72477599481823
Model iJN1463.cmd: 0.002588286991212661
Model iMM904.cmd: 8.58396088028996E-5
Cycle 476
Total biomass:
Model iAF1260.cmd: 51.79974519945319
Model iJN1463.cmd: 0.002649560322219383
Model iMM904.cmd: 8.826869804627267E-5
Cycle 477
Total biomass:
Model iAF1260.cmd: 51.844847668248605
Model iJN1463.cmd: 0.002706359000483855
Model iMM904.cmd: 9.044583250882627E-5
Cycle 478
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Total biomass:
Model iAF1260.cmd: 51.86979271623753
Model iJN1463.cmd: 0.0027721008112982647
Model iMM904.cmd: 9.321717262691939E-5
Cycle 479
Total biomass:
Model iAF1260.cmd: 51.92555888580437
Model iJN1463.cmd: 0.002822213312711216
Model iMM904.cmd: 9.54760853148727E-5
Cycle 480
Total biomass:
Model iAF1260.cmd: 51.97360361366696
Model iJN1463.cmd: 0.002850847262650444
Model iMM904.cmd: 9.701844295275743E-5
Cycle 481
Total biomass:
Model iAF1260.cmd: 52.01733626723768
Model iJN1463.cmd: 0.002896115940563258
Model iMM904.cmd: 9.914333799617511E-5
Cycle 482
Total biomass:
Model iAF1260.cmd: 52.06834614018797
Model iJN1463.cmd: 0.0029302230208314616
Model iMM904.cmd: 1.0031058128022909E-4
Cycle 483
Total biomass:
Model iAF1260.cmd: 52.1283216536612
Model iJN1463.cmd: 0.0029728501876698957
Model iMM904.cmd: 1.0206785560254821E-4
Cycle 484
Total biomass:
Model iAF1260.cmd: 52.18439525768342
Model iJN1463.cmd: 0.00302234628034111
Model iMM904.cmd: 1.0431711041076645E-4
Cycle 485
Total biomass:
Model iAF1260.cmd: 52.23313296864232
Model iJN1463.cmd: 0.003091260337064479
Model iMM904.cmd: 1.071506802478841E-4
Cycle 486
Total biomass:
Model iAF1260.cmd: 52.24920519189138
Model iJN1463.cmd: 0.0031309704327143386
Model iMM904.cmd: 1.0823110950368688E-4
Cycle 487
Total biomass:
Model iAF1260.cmd: 52.308195701301806
Model iJN1463.cmd: 0.003183941161614378
Model iMM904.cmd: 1.1060839960701174E-4
Cycle 488
Total biomass:
Model iAF1260.cmd: 52.3472030751176
Model iJN1463.cmd: 0.003282082066959898
Model iMM904.cmd: 1.148684753913084E-4
Cycle 489
Total biomass:
Model iAF1260.cmd: 52.39258447172675
Model iJN1463.cmd: 0.0033030755316292714
Model iMM904.cmd: 1.1579096026491739E-4
Cycle 490
Total biomass:
Model iAF1260.cmd: 52.451369058047106
Model iJN1463.cmd: 0.003303042500873956
Model iMM904.cmd: 1.1578980443316541E-4
Cycle 491
Total biomass:
Model iAF1260.cmd: 52.50492244109938
Model iJN1463.cmd: 0.003303009470469094
Model iMM904.cmd: 1.157886495075267E-4
Cycle 492
Total biomass:
Model iAF1260.cmd: 52.53039705538152
Model iJN1463.cmd: 0.0033259153795328475
Model iMM904.cmd: 1.1654654890006646E-4
Cycle 493
Total biomass:
Model iAF1260.cmd: 52.579626883383426
Model iJN1463.cmd: 0.0033522475480706137
Model iMM904.cmd: 1.1770355942764728E-4
Cycle 494
Total biomass:
Model iAF1260.cmd: 52.626591470035436
Model iJN1463.cmd: 0.003403661541819993
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Model iMM904.cmd: 1.1982121114010519E-4
Cycle 495
Total biomass:
Model iAF1260.cmd: 52.70050857713602
Model iJN1463.cmd: 0.0034385986394812893
Model iMM904.cmd: 1.2156211487711498E-4
Cycle 496
Total biomass:
Model iAF1260.cmd: 52.7774478808704
Model iJN1463.cmd: 0.0034623469082180752
Model iMM904.cmd: 1.225737762912602E-4
Cycle 497
Total biomass:
Model iAF1260.cmd: 52.892466717786434
Model iJN1463.cmd: 0.0035279939703458975
Model iMM904.cmd: 1.2570595760848046E-4
Cycle 498
Total biomass:
Model iAF1260.cmd: 52.98345682120018
Model iJN1463.cmd: 0.003555186131766262
Model iMM904.cmd: 1.2700172303242518E-4
Cycle 499
Total biomass:
Model iAF1260.cmd: 53.059480690405465
Model iJN1463.cmd: 0.0036140752685060039
Model iMM904.cmd: 1.298385062567461E-4
Cycle 500
Total biomass:
Model iAF1260.cmd: 53.10159845066124
Model iJN1463.cmd: 0.0036991723732746388
Model iMM904.cmd: 1.3388483741020189E-4
Cycle 501
Total biomass:
Model iAF1260.cmd: 53.114383339941185
Model iJN1463.cmd: 0.0037246059142352055
Model iMM904.cmd: 1.3499964478487766E-4
Cycle 502
Total biomass:
Model iAF1260.cmd: 53.16424035221897
Model iJN1463.cmd: 0.003724568668176066
Model iMM904.cmd: 1.3499830348172946E-4
Cycle 503
Total biomass:
Model iAF1260.cmd: 53.24680094786217
Model iJN1463.cmd: 0.0037536689900694218
Model iMM904.cmd: 1.3639448264142514E-4
Cycle 504
Total biomass:
Model iAF1260.cmd: 53.31979015380038
Model iJN1463.cmd: 0.0038155347350896395
Model iMM904.cmd: 1.3943706391605947E-4
Cycle 505
Total biomass:
Model iAF1260.cmd: 53.39374890843903
Model iJN1463.cmd: 0.003860975263579544
Model iMM904.cmd: 1.413083795561012E-4
Cycle 506
Total biomass:
Model iAF1260.cmd: 53.44766921711505
Model iJN1463.cmd: 0.0038609366877630186
Model iMM904.cmd: 1.4130698609349072E-4
Cycle 507
Total biomass:
Model iAF1260.cmd: 53.52737591897081
Model iJN1463.cmd: 0.0038910223023771464
Model iMM904.cmd: 1.4274595097837038E-4
Cycle 508
Total biomass:
Model iAF1260.cmd: 53.631728702430145
Model iJN1463.cmd: 0.003918435143854659
Model iMM904.cmd: 1.4399330702309822E-4
Cycle 509
Total biomass:
Model iAF1260.cmd: 53.662118848423546
Model iJN1463.cmd: 0.0039820934332327656
Model iMM904.cmd: 1.4705586684667617E-4
Cycle 510
Total biomass:
Model iAF1260.cmd: 53.676028797502255
Model iJN1463.cmd: 0.004033151226418353
Model iMM904.cmd: 1.4928009004838165E-4
Cycle 511
Total biomass:
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Model iAF1260.cmd: 53.734965895209136
Model iJN1463.cmd: 0.00405714354621463
Model iMM904.cmd: 1.5038487580623473E-4
Cycle 512
Total biomass:
Model iAF1260.cmd: 53.77695206110948
Model iJN1463.cmd: 0.00413115126882343
Model iMM904.cmd: 1.5395010786800866E-4
Cycle 513
Total biomass:
Model iAF1260.cmd: 53.850367863446934
Model iJN1463.cmd: 0.00415169731155388
Model iMM904.cmd: 1.5470605986519852E-4
Cycle 514
Total biomass:
Model iAF1260.cmd: 53.89903770466772
Model iJN1463.cmd: 0.004205075193489583
Model iMM904.cmd: 1.5713950861737677E-4
Cycle 515
Total biomass:
Model iAF1260.cmd: 53.98676255385202
Model iJN1463.cmd: 0.004234372709550704
Model iMM904.cmd: 1.5845051078516357E-4
Cycle 516
Total biomass:
Model iAF1260.cmd: 54.06536604824841
Model iJN1463.cmd: 0.004234330365823611
Model iMM904.cmd: 1.5844892818921857E-4
Cycle 517
Total biomass:
Model iAF1260.cmd: 54.12486990599128
Model iJN1463.cmd: 0.0042342880225199954
Model iMM904.cmd: 1.5844734423355988E-4
Cycle 518
Total biomass:
Model iAF1260.cmd: 54.21572727234018
Model iJN1463.cmd: 0.004267421884798715
Model iMM904.cmd: 1.6015919506704595E-4
Cycle 519
Total biomass:
Model iAF1260.cmd: 54.30051790676323
Model iJN1463.cmd: 0.004293235156664013
Model iMM904.cmd: 1.6137069525446802E-4
Cycle 520
Total biomass:
Model iAF1260.cmd: 54.35944230821667
Model iJN1463.cmd: 0.004389694826765896
Model iMM904.cmd: 1.6603561171614118E-4
Cycle 521
Total biomass:
Model iAF1260.cmd: 54.425138627782374
Model iJN1463.cmd: 0.004433223854901812
Model iMM904.cmd: 1.6837549203642217E-4
Cycle 522
Total biomass:
Model iAF1260.cmd: 54.48994547660598
Model iJN1463.cmd: 0.004491085374064721
Model iMM904.cmd: 1.7109484233314315E-4
Cycle 523
Total biomass:
Model iAF1260.cmd: 54.56271108819209
Model iJN1463.cmd: 0.004546061390285325
Model iMM904.cmd: 1.7366995912111033E-4
Cycle 524
Total biomass:
Model iAF1260.cmd: 54.64975491849689
Model iJN1463.cmd: 0.004580186560267123
Model iMM904.cmd: 1.7539343217463858E-4
Cycle 525
Total biomass:
Model iAF1260.cmd: 54.740093762440411
Model iJN1463.cmd: 0.004643403783327688
Model iMM904.cmd: 1.785228356013802E-4
Cycle 526
Total biomass:
Model iAF1260.cmd: 54.77574900986482
Model iJN1463.cmd: 0.004643357349289856
Model iMM904.cmd: 1.7852105060734848E-4
Cycle 527
Total biomass:
Model iAF1260.cmd: 54.853642738477035
Model iJN1463.cmd: 0.004643310915716365
Model iMM904.cmd: 1.7851926553457507E-4
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Cycle 528
Total biomass:
Model iAF1260.cmd: 54.958537283086585
Model iJN1463.cmd: 0.0046432644826072105
Model iMM904.cmd: 1.785174804046828E-4
Cycle 529
Total biomass:
Model iAF1260.cmd: 55.02608416693058
Model iJN1463.cmd: 0.004687475538463413
Model iMM904.cmd: 1.8046415021100295E-4
Cycle 530
Total biomass:
Model iAF1260.cmd: 55.08939426069588
Model iJN1463.cmd: 0.004738972264263717
Model iMM904.cmd: 1.827372733321431E-4
Cycle 531
Total biomass:
Model iAF1260.cmd: 55.14509224609285
Model iJN1463.cmd: 0.004784508999661775
Model iMM904.cmd: 1.8517655959695816E-4
Cycle 532
Total biomass:
Model iAF1260.cmd: 55.210791892903345
Model iJN1463.cmd: 0.004858387581617951
Model iMM904.cmd: 1.8863486870809545E-4
Cycle 533
Total biomass:
Model iAF1260.cmd: 55.28137557876668
Model iJN1463.cmd: 0.0049198380139047395
Model iMM904.cmd: 1.916642947636784E-4
Cycle 534
Total biomass:
Model iAF1260.cmd: 55.31626885568936
Model iJN1463.cmd: 0.004949269947375486
Model iMM904.cmd: 1.931028476203527E-4
Cycle 535
Total biomass:
Model iAF1260.cmd: 55.397289020132426
Model iJN1463.cmd: 0.00497403031842598
Model iMM904.cmd: 1.9420188010160134E-4
Cycle 536
Total biomass:
Model iAF1260.cmd: 55.42683851717044
Model iJN1463.cmd: 0.0051116063916438505
Model iMM904.cmd: 2.0099030421368613E-4
Cycle 537
Total biomass:
Model iAF1260.cmd: 55.50957410439979
Model iJN1463.cmd: 0.005138192801343275
Model iMM904.cmd: 2.020981586781314E-4
Cycle 538
Total biomass:
Model iAF1260.cmd: 55.58294377497616
Model iJN1463.cmd: 0.005169992232119527
Model iMM904.cmd: 2.037803040829761E-4
Cycle 539
Total biomass:
Model iAF1260.cmd: 55.6373717340161
Model iJN1463.cmd: 0.00521797962260047
Model iMM904.cmd: 2.0640593662686455E-4
Cycle 540
Total biomass:
Model iAF1260.cmd: 55.70881449479766
Model iJN1463.cmd: 0.005253516054358834
Model iMM904.cmd: 2.081396555802281E-4
Cycle 541
Total biomass:
Model iAF1260.cmd: 55.77250231514608
Model iJN1463.cmd: 0.00525346351918104
Model iMM904.cmd: 2.0813758503085607E-4
Cycle 542
Total biomass:
Model iAF1260.cmd: 55.82883984802237
Model iJN1463.cmd: 0.0053178803466480936
Model iMM904.cmd: 2.10810782600012E-4
Cycle 543
Total biomass:
Model iAF1260.cmd: 55.91589994837827
Model iJN1463.cmd: 0.005388926334036935
Model iMM904.cmd: 2.1446255350401552E-4
Cycle 544
Total biomass:
Model iAF1260.cmd: 55.968465568043776
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Model iJN1463.cmd: 0.005501132608592206
Model iMM904.cmd: 2.2034354161832017E-4
Cycle 545
Total biomass:
Model iAF1260.cmd: 56.05493283454992
Model iJN1463.cmd: 0.0055763936802304525
Model iMM904.cmd: 2.2436824158848966E-4
Cycle 546
Total biomass:
Model iAF1260.cmd: 56.08557723198861
Model iJN1463.cmd: 0.00561749667803377
Model iMM904.cmd: 2.265937735516653E-4
Cycle 547
Total biomass:
Model iAF1260.cmd: 56.17120765034634
Model iJN1463.cmd: 0.005702739968268062
Model iMM904.cmd: 2.312734412377447E-4
Cycle 548
Total biomass:
Model iAF1260.cmd: 56.19759997287077
Model iJN1463.cmd: 0.005824218173548861
Model iMM904.cmd: 2.3748834657301633E-4
Cycle 549
Total biomass:
Model iAF1260.cmd: 56.23991950268674
Model iJN1463.cmd: 0.005920678612579896
Model iMM904.cmd: 2.4287861400495425E-4
Cycle 550
Total biomass:
Model iAF1260.cmd: 56.32529437171372
Model iJN1463.cmd: 0.00595021580331623
Model iMM904.cmd: 2.4416043735398256E-4
Cycle 551
Total biomass:
Model iAF1260.cmd: 56.40200143497959
Model iJN1463.cmd: 0.005950156301188113
Model iMM904.cmd: 2.4415799875959467E-4
Cycle 552
Total biomass:
Model iAF1260.cmd: 56.415256491164065
Model iJN1463.cmd: 0.006080475918050137
Model iMM904.cmd: 2.498507472917985E-4
Cycle 553
Total biomass:
Model iAF1260.cmd: 56.45438423288696
Model iJN1463.cmd: 0.006168241153807009
Model iMM904.cmd: 2.5454417225647844E-4
Cycle 554
Total biomass:
Model iAF1260.cmd: 56.57098422773329
Model iJN1463.cmd: 0.006246899540863842
Model iMM904.cmd: 2.588476844940755E-4
Cycle 555
Total biomass:
Model iAF1260.cmd: 56.653843808502906
Model iJN1463.cmd: 0.006322697182177674
Model iMM904.cmd: 2.626508717716345E-4
Cycle 556
Total biomass:
Model iAF1260.cmd: 56.71694350353165
Model iJN1463.cmd: 0.00636160649532717
Model iMM904.cmd: 2.647676555108413E-4
Cycle 557
Total biomass:
Model iAF1260.cmd: 56.79734545482756
Model iJN1463.cmd: 0.006401985237020204
Model iMM904.cmd: 2.669973890864655E-4
Cycle 558
Total biomass:
Model iAF1260.cmd: 56.85805787659842
Model iJN1463.cmd: 0.006401921217167836
Model iMM904.cmd: 2.669947250955216E-4
Cycle 559
Total biomass:
Model iAF1260.cmd: 56.92178156540504
Model iJN1463.cmd: 0.006478210871012765
Model iMM904.cmd: 2.7051777171425447E-4
Cycle 560
Total biomass:
Model iAF1260.cmd: 56.985635778958276
Model iJN1463.cmd: 0.006579149390319013
Model iMM904.cmd: 2.7626443147333517E-4
Cycle 561
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Total biomass:
Model iAF1260.cmd: 57.061653079460434
Model iJN1463.cmd: 0.006638079689092043
Model iMM904.cmd: 2.798603916013086E-4
Cycle 562
Total biomass:
Model iAF1260.cmd: 57.1315558136625
Model iJN1463.cmd: 0.0067343128474294835
Model iMM904.cmd: 2.851408548848838E-4
Cycle 563
Total biomass:
Model iAF1260.cmd: 57.20541740687493
Model iJN1463.cmd: 0.0067774475490053315
Model iMM904.cmd: 2.875893733361138E-4
Cycle 564
Total biomass:
Model iAF1260.cmd: 57.2385562827825
Model iJN1463.cmd: 0.006818677739435662
Model iMM904.cmd: 2.903927229037031E-4
Cycle 565
Total biomass:
Model iAF1260.cmd: 57.309586564203634
Model iJN1463.cmd: 0.006909507963129766
Model iMM904.cmd: 2.954011258264592E-4
Cycle 566
Total biomass:
Model iAF1260.cmd: 57.39129050624578
Model iJN1463.cmd: 0.006957322946221585
Model iMM904.cmd: 2.980118118914603E-4
Cycle 567
Total biomass:
Model iAF1260.cmd: 57.446689495124
Model iJN1463.cmd: 0.007053365231803794
Model iMM904.cmd: 3.0343813719563046E-4
Cycle 568
Total biomass:
Model iAF1260.cmd: 57.518862295271276
Model iJN1463.cmd: 0.007139854639196185
Model iMM904.cmd: 3.080370965906545E-4
Cycle 569
Total biomass:
Model iAF1260.cmd: 57.60005700619108
Model iJN1463.cmd: 0.007229677045043551
Model iMM904.cmd: 3.1285743881130217E-4
Cycle 570
Total biomass:
Model iAF1260.cmd: 57.65638628679772
Model iJN1463.cmd: 0.007229604748273104
Model iMM904.cmd: 3.128543146307154E-4
Cycle 571
Total biomass:
Model iAF1260.cmd: 57.7117564447604
Model iJN1463.cmd: 0.007270806193890015
Model iMM904.cmd: 3.14858022712732E-4
Cycle 572
Total biomass:
Model iAF1260.cmd: 57.81172198736644
Model iJN1463.cmd: 0.007322799773535636
Model iMM904.cmd: 3.1797098886067834E-4
Cycle 573
Total biomass:
Model iAF1260.cmd: 57.87383328778617
Model iJN1463.cmd: 0.007419311490516511
Model iMM904.cmd: 3.2327914847603544E-4
Cycle 574
Total biomass:
Model iAF1260.cmd: 57.92273738434892
Model iJN1463.cmd: 0.00750916590385183
Model iMM904.cmd: 3.282022976574647E-4
Cycle 575
Total biomass:
Model iAF1260.cmd: 57.97067379162707
Model iJN1463.cmd: 0.007556427820595398
Model iMM904.cmd: 3.3085632125172523E-4
Cycle 576
Total biomass:
Model iAF1260.cmd: 58.010585220101134
Model iJN1463.cmd: 0.007617583503918383
Model iMM904.cmd: 3.3457193200686793E-4
Cycle 577
Total biomass:
Model iAF1260.cmd: 58.03359450897723
Model iJN1463.cmd: 0.007803873088211838
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Model iMM904.cmd: 3.441259858994678E-4
Cycle 578
Total biomass:
Model iAF1260.cmd: 58.14592590648057
Model iJN1463.cmd: 0.007909854624443522
Model iMM904.cmd: 3.5035114900572485E-4
Cycle 579
Total biomass:
Model iAF1260.cmd: 58.23787329835481
Model iJN1463.cmd: 0.008019602514598694
Model iMM904.cmd: 3.568567739529584E-4
Cycle 580
Total biomass:
Model iAF1260.cmd: 58.32145523438372
Model iJN1463.cmd: 0.008188039361236446
Model iMM904.cmd: 3.6724137078395126E-4
Cycle 581
Total biomass:
Model iAF1260.cmd: 58.394223528527895
Model iJN1463.cmd: 0.008247048017498974
Model iMM904.cmd: 3.7087522426903195E-4
Cycle 582
Total biomass:
Model iAF1260.cmd: 58.45073681958224
Model iJN1463.cmd: 0.008399201546069369
Model iMM904.cmd: 3.802543297039783E-4
Cycle 583
Total biomass:
Model iAF1260.cmd: 58.4963995460499
Model iJN1463.cmd: 0.008513010598767546
Model iMM904.cmd: 3.8823845419028044E-4
Cycle 584
Total biomass:
Model iAF1260.cmd: 58.51518199792664
Model iJN1463.cmd: 0.008560243599946631
Model iMM904.cmd: 3.9076885055931216E-4
Cycle 585
Total biomass:
Model iAF1260.cmd: 58.60322782890806
Model iJN1463.cmd: 0.008682734026682508
Model iMM904.cmd: 3.983090091643831E-4
Cycle 586
Total biomass:
Model iAF1260.cmd: 58.66270341510375
Model iJN1463.cmd: 0.008812307221874186
Model iMM904.cmd: 4.070246878780601E-4
Cycle 587
Total biomass:
Model iAF1260.cmd: 58.70382458892927
Model iJN1463.cmd: 0.008932639465062562
Model iMM904.cmd: 4.1461809711547946E-4
Cycle 588
Total biomass:
Model iAF1260.cmd: 58.73282269920059
Model iJN1463.cmd: 0.008932550159373321
Model iMM904.cmd: 4.146139637847753E-4
Cycle 589
Total biomass:
Model iAF1260.cmd: 58.779659071838466
Model iJN1463.cmd: 0.009024737948046794
Model iMM904.cmd: 4.1811333579301813E-4
Cycle 590
Total biomass:
Model iAF1260.cmd: 58.82800145966991
Model iJN1463.cmd: 0.009095004196149071
Model iMM904.cmd: 4.226767430087143E-4
Cycle 591
Total biomass:
Model iAF1260.cmd: 58.91335303752871
Model iJN1463.cmd: 0.009228669165226883
Model iMM904.cmd: 4.3110363019279867E-4
Cycle 592
Total biomass:
Model iAF1260.cmd: 58.969056227904744
Model iJN1463.cmd: 0.009304183577090147
Model iMM904.cmd: 4.3603785791330817E-4
Cycle 593
Total biomass:
Model iAF1260.cmd: 59.05375738861342
Model iJN1463.cmd: 0.009304090535254385
Model iMM904.cmd: 4.3603349916835E-4
Cycle 594
Total biomass:
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Model iAF1260.cmd: 59.15767246418942
Model iJN1463.cmd: 0.009303997494349039
Model iMM904.cmd: 4.360291391380812E-4
Cycle 595
Total biomass:
Model iAF1260.cmd: 59.23076584464918
Model iJN1463.cmd: 0.009306536391966618
Model iMM904.cmd: 4.366763090206535E-4
Cycle 596
Total biomass:
Model iAF1260.cmd: 59.30999310035244
Model iJN1463.cmd: 0.009306443326602699
Model iMM904.cmd: 4.366719428522795E-4
Cycle 597
Total biomass:
Model iAF1260.cmd: 59.39316097180033
Model iJN1463.cmd: 0.00930635026216944
Model iMM904.cmd: 4.3666757634793407E-4
Cycle 598
Total biomass:
Model iAF1260.cmd: 59.49961867179456
Model iJN1463.cmd: 0.009431931982429857
Model iMM904.cmd: 4.442238122710928E-4
Cycle 599
Total biomass:
Model iAF1260.cmd: 59.59393226842537
Model iJN1463.cmd: 0.009499009196507705
Model iMM904.cmd: 4.483034930649621E-4
Cycle 600
Total biomass:
Model iAF1260.cmd: 59.64240478036976
Model iJN1463.cmd: 0.00964175899954333
Model iMM904.cmd: 4.5734804028152524E-4
Cycle 601
Total biomass:
Model iAF1260.cmd: 59.708045274007574
Model iJN1463.cmd: 0.009641662582644204
Model iMM904.cmd: 4.573434672088316E-4
Cycle 602
Total biomass:
Model iAF1260.cmd: 59.7882753204756
Model iJN1463.cmd: 0.009726211504907689
Model iMM904.cmd: 4.6303203938784167E-4
Cycle 603
Total biomass:
Model iAF1260.cmd: 59.854048445991516
Model iJN1463.cmd: 0.009881332312787445
Model iMM904.cmd: 4.7302889385966506E-4
Cycle 604
Total biomass:
Model iAF1260.cmd: 59.9301598196139
Model iJN1463.cmd: 0.009881233499464324
Model iMM904.cmd: 4.7302416398179055E-4
Cycle 605
Total biomass:
Model iAF1260.cmd: 59.99430635036069
Model iJN1463.cmd: 0.00994209480816961
Model iMM904.cmd: 4.761850858019419E-4
Cycle 606
Total biomass:
Model iAF1260.cmd: 60.0846526739311
Model iJN1463.cmd: 0.010007036187603978
Model iMM904.cmd: 4.8031870914153437E-4
Cycle 607
Total biomass:
Model iAF1260.cmd: 60.15387503695583
Model iJN1463.cmd: 0.01021376439382288
Model iMM904.cmd: 4.924809439350096E-4
Cycle 608
Total biomass:
Model iAF1260.cmd: 60.20931384685324
Model iJN1463.cmd: 0.010421574068207849
Model iMM904.cmd: 5.053749894946245E-4
Cycle 609
Total biomass:
Model iAF1260.cmd: 60.303169992818084
Model iJN1463.cmd: 0.01049165400196252
Model iMM904.cmd: 5.100753273877916E-4
Cycle 610
Total biomass:
Model iAF1260.cmd: 60.37108033858187
Model iJN1463.cmd: 0.010760445136821067
Model iMM904.cmd: 5.275523678831307E-4
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Cycle 611
Total biomass:
Model iAF1260.cmd: 60.41858016919759
Model iJN1463.cmd: 0.010851774900914237
Model iMM904.cmd: 5.335832753175257E-4
Cycle 612
Total biomass:
Model iAF1260.cmd: 60.51853520611331
Model iJN1463.cmd: 0.010851666383165237
Model iMM904.cmd: 5.335779395677158E-4
Cycle 613
Total biomass:
Model iAF1260.cmd: 60.564330016466094
Model iJN1463.cmd: 0.011001211155026754
Model iMM904.cmd: 5.419513781954601E-4
Cycle 614
Total biomass:
Model iAF1260.cmd: 60.60811030985141
Model iJN1463.cmd: 0.011184759614503034
Model iMM904.cmd: 5.499343874312995E-4
Cycle 615
Total biomass:
Model iAF1260.cmd: 60.659217868549895
Model iJN1463.cmd: 0.011251643330726478
Model iMM904.cmd: 5.539992067857166E-4
Cycle 616
Total biomass:
Model iAF1260.cmd: 60.723808088655645
Model iJN1463.cmd: 0.01139611807789588
Model iMM904.cmd: 5.630524470689845E-4
Cycle 617
Total biomass:
Model iAF1260.cmd: 60.792922042957414
Model iJN1463.cmd: 0.011565768323246947
Model iMM904.cmd: 5.739652616269459E-4
Cycle 618
Total biomass:
Model iAF1260.cmd: 60.83568922614317
Model iJN1463.cmd: 0.01171875447026575
Model iMM904.cmd: 5.835925813446778E-4
Cycle 619
Total biomass:
Model iAF1260.cmd: 60.89573020326822
Model iJN1463.cmd: 0.011897088024152052
Model iMM904.cmd: 5.957593434876457E-4
Cycle 620
Total biomass:
Model iAF1260.cmd: 60.96514834627004
Model iJN1463.cmd: 0.012058946813402041
Model iMM904.cmd: 6.067862385853506E-4
Cycle 621
Total biomass:
Model iAF1260.cmd: 61.049010336387454
Model iJN1463.cmd: 0.012142992081336079
Model iMM904.cmd: 6.12727780615365E-4
Cycle 622
Total biomass:
Model iAF1260.cmd: 61.14198932119099
Model iJN1463.cmd: 0.012220239585115695
Model iMM904.cmd: 6.17532065477638E-4
Cycle 623
Total biomass:
Model iAF1260.cmd: 61.198839249873785
Model iJN1463.cmd: 0.012220117382719846
Model iMM904.cmd: 6.175258901964382E-4
Cycle 624
Total biomass:
Model iAF1260.cmd: 61.292702446897074
Model iJN1463.cmd: 0.012377726694532704
Model iMM904.cmd: 6.268456749917779E-4
Cycle 625
Total biomass:
Model iAF1260.cmd: 61.3416280447805
Model iJN1463.cmd: 0.012477818557952896
Model iMM904.cmd: 6.317744184847089E-4
Cycle 626
Total biomass:
Model iAF1260.cmd: 61.39776245164329
Model iJN1463.cmd: 0.012711927399285498
Model iMM904.cmd: 6.460337560506534E-4
Cycle 627
Total biomass:
Model iAF1260.cmd: 61.464748637682526
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Model iJN1463.cmd: 0.012794724435579323
Model iMM904.cmd: 6.511078856339641E-4
Cycle 628
Total biomass:
Model iAF1260.cmd: 61.525393457251155
Model iJN1463.cmd: 0.012883889121697448
Model iMM904.cmd: 6.564715134006454E-4
Cycle 629
Total biomass:
Model iAF1260.cmd: 61.59586239073488
Model iJN1463.cmd: 0.01288376028280624
Model iMM904.cmd: 6.564649487532935E-4
Cycle 630
Total biomass:
Model iAF1260.cmd: 61.66620194315256
Model iJN1463.cmd: 0.012980091352599988
Model iMM904.cmd: 6.620718401615303E-4
Cycle 631
Total biomass:
Model iAF1260.cmd: 61.764443594529624
Model iJN1463.cmd: 0.013159133637683852
Model iMM904.cmd: 6.719809690741154E-4
Cycle 632
Total biomass:
Model iAF1260.cmd: 61.83083765206856
Model iJN1463.cmd: 0.013416564216038856
Model iMM904.cmd: 6.874595012475433E-4
Cycle 633
Total biomass:
Model iAF1260.cmd: 61.86880923399553
Model iJN1463.cmd: 0.013580077277990923
Model iMM904.cmd: 6.966521035301332E-4
Cycle 634
Total biomass:
Model iAF1260.cmd: 61.949758187578865
Model iJN1463.cmd: 0.01384392538615501
Model iMM904.cmd: 7.111089790254867E-4
Cycle 635
Total biomass:
Model iAF1260.cmd: 62.06316233263051
Model iJN1463.cmd: 0.014027846230530744
Model iMM904.cmd: 7.215728174407813E-4
Cycle 636
Total biomass:
Model iAF1260.cmd: 62.147741408789315
Model iJN1463.cmd: 0.014222384895714757
Model iMM904.cmd: 7.324844818172335E-4
Cycle 637
Total biomass:
Model iAF1260.cmd: 62.20441951226703
Model iJN1463.cmd: 0.014329150033858937
Model iMM904.cmd: 7.388270700029425E-4
Cycle 638
Total biomass:
Model iAF1260.cmd: 62.23849516258516
Model iJN1463.cmd: 0.01450551468647039
Model iMM904.cmd: 7.484706370342973E-4
Cycle 639
Total biomass:
Model iAF1260.cmd: 62.301005898043826
Model iJN1463.cmd: 0.014600877926471613
Model iMM904.cmd: 7.538444427574049E-4
Cycle 640
Total biomass:
Model iAF1260.cmd: 62.364795818582714
Model iJN1463.cmd: 0.014942279933080102
Model iMM904.cmd: 7.714887882013693E-4
Cycle 641
Total biomass:
Model iAF1260.cmd: 62.46670545714524
Model iJN1463.cmd: 0.015119449914949087
Model iMM904.cmd: 7.813765912466055E-4
Cycle 642
Total biomass:
Model iAF1260.cmd: 62.54400261744656
Model iJN1463.cmd: 0.015119298721771934
Model iMM904.cmd: 7.813687774819331E-4
Cycle 643
Total biomass:
Model iAF1260.cmd: 62.60220378982378
Model iJN1463.cmd: 0.015305698515134542
Model iMM904.cmd: 7.906916843360725E-4
Cycle 644
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Total biomass:
Model iAF1260.cmd: 62.70841964807512
Model iJN1463.cmd: 0.015415972339605444
Model iMM904.cmd: 7.966183396723759E-4
Cycle 645
Total biomass:
Model iAF1260.cmd: 62.78552942039613
Model iJN1463.cmd: 0.015620485957666812
Model iMM904.cmd: 8.075025497987017E-4
Cycle 646
Total biomass:
Model iAF1260.cmd: 62.881469820020406
Model iJN1463.cmd: 0.01562032975280724
Model iMM904.cmd: 8.074944747745399E-4
Cycle 647
Total biomass:
Model iAF1260.cmd: 62.911909706685236
Model iJN1463.cmd: 0.015917092328425593
Model iMM904.cmd: 8.22447381518278E-4
Cycle 648
Total biomass:
Model iAF1260.cmd: 63.00693456563522
Model iJN1463.cmd: 0.01604092696085811
Model iMM904.cmd: 8.292498043380446E-4
Cycle 649
Total biomass:
Model iAF1260.cmd: 63.11727510404742
Model iJN1463.cmd: 0.01616913307620409
Model iMM904.cmd: 8.358855058541665E-4
Cycle 650
Total biomass:
Model iAF1260.cmd: 63.14684998094097
Model iJN1463.cmd: 0.016476208325638224
Model iMM904.cmd: 8.51774953700624E-4
Cycle 651
Total biomass:
Model iAF1260.cmd: 63.24545257558948
Model iJN1463.cmd: 0.01656887012367392
Model iMM904.cmd: 8.570185260232596E-4
Cycle 652
Total biomass:
Model iAF1260.cmd: 63.364740041326314
Model iJN1463.cmd: 0.0165687044349727
Model iMM904.cmd: 8.570099558391703E-4
Cycle 653
Total biomass:
Model iAF1260.cmd: 63.45524511930224
Model iJN1463.cmd: 0.016778267671412085
Model iMM904.cmd: 8.674325502716153E-4
Cycle 654
Total biomass:
Model iAF1260.cmd: 63.51002459529111
Model iJN1463.cmd: 0.01688751026313468
Model iMM904.cmd: 8.730955217274134E-4
Cycle 655
Total biomass:
Model iAF1260.cmd: 63.61019202164031
Model iJN1463.cmd: 0.01721776426072358
Model iMM904.cmd: 8.896502012834393E-4
Cycle 656
Total biomass:
Model iAF1260.cmd: 63.673039748677674
Model iJN1463.cmd: 0.017620185896446806
Model iMM904.cmd: 9.114588749424226E-4
Cycle 657
Total biomass:
Model iAF1260.cmd: 63.7177616398573
Model iJN1463.cmd: 0.01795714637544531
Model iMM904.cmd: 9.295033449255685E-4
Cycle 658
Total biomass:
Model iAF1260.cmd: 63.767403147595545
Model iJN1463.cmd: 0.017956966803981567
Model iMM904.cmd: 9.294940498921195E-4
Cycle 659
Total biomass:
Model iAF1260.cmd: 63.84018730545733
Model iJN1463.cmd: 0.01825744656450065
Model iMM904.cmd: 9.450346589475068E-4
Cycle 660
Total biomass:
Model iAF1260.cmd: 63.92222380834735
Model iJN1463.cmd: 0.018445356930647975
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Model iMM904.cmd: 9.556045165023033E-4
Cycle 661
Total biomass:
Model iAF1260.cmd: 63.97434915821151
Model iJN1463.cmd: 0.018445172477078674
Model iMM904.cmd: 9.555949607588274E-4
Cycle 662
Total biomass:
Model iAF1260.cmd: 64.05277319522503
Model iJN1463.cmd: 0.018530140477967555
Model iMM904.cmd: 9.600124670833553E-4
Cycle 663
Total biomass:
Model iAF1260.cmd: 64.1372395487097
Model iJN1463.cmd: 0.01890720665611478
Model iMM904.cmd: 9.787401894103672E-4
Cycle 664
Total biomass:
Model iAF1260.cmd: 64.25027995956792
Model iJN1463.cmd: 0.01905578892710006
Model iMM904.cmd: 9.86263258309433E-4
Cycle 665
Total biomass:
Model iAF1260.cmd: 64.31694010696854
Model iJN1463.cmd: 0.019169080460585585
Model iMM904.cmd: 9.922660541176057E-4
Cycle 666
Total biomass:
Model iAF1260.cmd: 64.40182410069895
Model iJN1463.cmd: 0.019256661322759123
Model iMM904.cmd: 9.975101992383555E-4
Cycle 667
Total biomass:
Model iAF1260.cmd: 64.49001840420006
Model iJN1463.cmd: 0.01957681388771764
Model iMM904.cmd: 0.0010111481123859086
Cycle 668
Total biomass:
Model iAF1260.cmd: 64.51971122727315
Model iJN1463.cmd: 0.0195766181195788774
Model iMM904.cmd: 0.001011138005488077
Cycle 669
Total biomass:
Model iAF1260.cmd: 64.60609858122535
Model iJN1463.cmd: 0.01957642235339759
Model iMM904.cmd: 0.00101112790289999908
Cycle 670
Total biomass:
Model iAF1260.cmd: 64.72131328616774
Model iJN1463.cmd: 0.01957622658917406
Model iMM904.cmd: 0.001011117802203484
Cycle 671
Total biomass:
Model iAF1260.cmd: 64.78677469063052
Model iJN1463.cmd: 0.019788724713840015
Model iMM904.cmd: 0.0010227053458265471
Cycle 672
Total biomass:
Model iAF1260.cmd: 64.8804085036576
Model iJN1463.cmd: 0.019922115230221683
Model iMM904.cmd: 0.0010298213043841826
Cycle 673
Total biomass:
Model iAF1260.cmd: 64.91450645501244
Model iJN1463.cmd: 0.020322997855630208
Model iMM904.cmd: 0.0010501135446996555
Cycle 674
Total biomass:
Model iAF1260.cmd: 65.0178591917598
Model iJN1463.cmd: 0.020485089265633694
Model iMM904.cmd: 0.001058043840789118
Cycle 675
Total biomass:
Model iAF1260.cmd: 65.10826287075058
Model iJN1463.cmd: 0.020781942948010772
Model iMM904.cmd: 0.0010725054747517115
Cycle 676
Total biomass:
Model iAF1260.cmd: 65.19069878110112
Model iJN1463.cmd: 0.020955356460653225
Model iMM904.cmd: 0.001080954427683445
Cycle 677
Total biomass:
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Model iAF1260.cmd: 65.28967309160325
Model iJN1463.cmd: 0.021095653614073548
Model iMM904.cmd: 0.0010896847765234313
Cycle 678
Total biomass:
Model iAF1260.cmd: 65.38030981598348
Model iJN1463.cmd: 0.021328584649163453
Model iMM904.cmd: 0.0011046486732927661
Cycle 679
Total biomass:
Model iAF1260.cmd: 65.41782918559146
Model iJN1463.cmd: 0.021718798474151577
Model iMM904.cmd: 0.00112964716868299
Cycle 680
Total biomass:
Model iAF1260.cmd: 65.50540769527947
Model iJN1463.cmd: 0.021718581286166844
Model iMM904.cmd: 0.001129635884017099
Cycle 681
Total biomass:
Model iAF1260.cmd: 65.58478076837771
Model iJN1463.cmd: 0.02187081435905847
Model iMM904.cmd: 0.0011373399089355568
Cycle 682
Total biomass:
Model iAF1260.cmd: 65.64644919149126
Model iJN1463.cmd: 0.022217493188518376
Model iMM904.cmd: 0.00115793947999665
Cycle 683
Total biomass:
Model iAF1260.cmd: 65.69081088571356
Model iJN1463.cmd: 0.022345509575499863
Model iMM904.cmd: 0.0011658921112094062
Cycle 684
Total biomass:
Model iAF1260.cmd: 65.7591744660699
Model iJN1463.cmd: 0.02234528612040411
Model iMM904.cmd: 0.0011658804546034786
Cycle 685
Total biomass:
Model iAF1260.cmd: 65.86293953152082
Model iJN1463.cmd: 0.022345062667542916
Model iMM904.cmd: 0.0011658687995027006
Cycle 686
Total biomass:
Model iAF1260.cmd: 65.90405688485431
Model iJN1463.cmd: 0.022857705998279756
Model iMM904.cmd: 0.0011966345869642843
Cycle 687
Total biomass:
Model iAF1260.cmd: 65.98167528702824
Model iJN1463.cmd: 0.023228379930427374
Model iMM904.cmd: 0.0012185288190480468
Cycle 688
Total biomass:
Model iAF1260.cmd: 66.03408021469819
Model iJN1463.cmd: 0.023514713377350793
Model iMM904.cmd: 0.0012366688239452475
Cycle 689
Total biomass:
Model iAF1260.cmd: 66.10243549325473
Model iJN1463.cmd: 0.02368857955780827
Model iMM904.cmd: 0.0012471347338446868
Cycle 690
Total biomass:
Model iAF1260.cmd: 66.17876276352133
Model iJN1463.cmd: 0.024339927736123673
Model iMM904.cmd: 0.001287086508602819
Cycle 691
Total biomass:
Model iAF1260.cmd: 66.29506298689503
Model iJN1463.cmd: 0.024597074405295398
Model iMM904.cmd: 0.001297793921916799
Cycle 692
Total biomass:
Model iAF1260.cmd: 66.40848091873384
Model iJN1463.cmd: 0.02475470409831143
Model iMM904.cmd: 0.0013059303921562429
Cycle 693
Total biomass:
Model iAF1260.cmd: 66.44859158309565
Model iJN1463.cmd: 0.02491754079116862
Model iMM904.cmd: 0.0013143603091806452
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Cycle 694
Total biomass:
Model iAF1260.cmd: 66.5126795601085
Model iJN1463.cmd: 0.025086105575394098
Model iMM904.cmd: 0.0013228257818676135
Cycle 695
Total biomass:
Model iAF1260.cmd: 66.5844749274603
Model iJN1463.cmd: 0.025261745088445923
Model iMM904.cmd: 0.0013311854301976426
Cycle 696
Total biomass:
Model iAF1260.cmd: 66.65298805960745
Model iJN1463.cmd: 0.025261492471539762
Model iMM904.cmd: 0.0013311721222486138
Cycle 697
Total biomass:
Model iAF1260.cmd: 66.73479665922707
Model iJN1463.cmd: 0.025440852412694295
Model iMM904.cmd: 0.001339520799592763
Cycle 698
Total biomass:
Model iAF1260.cmd: 66.77460768156404
Model iJN1463.cmd: 0.02600599948351034
Model iMM904.cmd: 0.0013667025927715682
Cycle 699
Total biomass:
Model iAF1260.cmd: 66.8451140409999
Model iJN1463.cmd: 0.02621949039888196
Model iMM904.cmd: 0.0013765699990240818
Cycle 700
Total biomass:
Model iAF1260.cmd: 66.90179417833636
Model iJN1463.cmd: 0.026632599108150638
Model iMM904.cmd: 0.0013952043773295256
Cycle 701
Total biomass:
Model iAF1260.cmd: 66.96022257352169
Model iJN1463.cmd: 0.026914231411876304
Model iMM904.cmd: 0.0014095344825506132
Cycle 702
Total biomass:
Model iAF1260.cmd: 67.05869114202468
Model iJN1463.cmd: 0.027301297017926027
Model iMM904.cmd: 0.0014269632650312448
Cycle 703
Total biomass:
Model iAF1260.cmd: 67.16097723536176
Model iJN1463.cmd: 0.027380550060236868
Model iMM904.cmd: 0.0014269489953985957
Cycle 704
Total biomass:
Model iAF1260.cmd: 67.25137969292233
Model iJN1463.cmd: 0.02802625769029062
Model iMM904.cmd: 0.0014640601307873116
Cycle 705
Total biomass:
Model iAF1260.cmd: 67.29535611133204
Model iJN1463.cmd: 0.02844160892213673
Model iMM904.cmd: 0.0014843144901249444
Cycle 706
Total biomass:
Model iAF1260.cmd: 67.34007273300428
Model iJN1463.cmd: 0.028492442653857628
Model iMM904.cmd: 0.0014842996469800437
Cycle 707
Total biomass:
Model iAF1260.cmd: 67.39221249371062
Model iJN1463.cmd: 0.02894211425157897
Model iMM904.cmd: 0.001507646306545604
Cycle 708
Total biomass:
Model iAF1260.cmd: 67.47309947325232
Model iJN1463.cmd: 0.02928997546705818
Model iMM904.cmd: 0.001524496045157686
Cycle 709
Total biomass:
Model iAF1260.cmd: 67.5245384877522
Model iJN1463.cmd: 0.029598572115262747
Model iMM904.cmd: 0.0015396842871436384
Cycle 710
Total biomass:
Model iAF1260.cmd: 67.64543340211172
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Model iJN1463.cmd: 0.029807290275153654
Model iMM904.cmd: 0.0015494034268421935
Cycle 711
Total biomass:
Model iAF1260.cmd: 67.73961049233283
Model iJN1463.cmd: 0.03038651243712766
Model iMM904.cmd: 0.0015758130324026872
Cycle 712
Total biomass:
Model iAF1260.cmd: 67.83462394767365
Model iJN1463.cmd: 0.030864651780358316
Model iMM904.cmd: 0.0015971103778002244
Cycle 713
Total biomass:
Model iAF1260.cmd: 67.9069418989444
Model iJN1463.cmd: 0.031119705360137032
Model iMM904.cmd: 0.0016101759068577089
Cycle 714
Total biomass:
Model iAF1260.cmd: 68.0060487964201
Model iJN1463.cmd: 0.031389585353126845
Model iMM904.cmd: 0.0016216351575363175
Cycle 715
Total biomass:
Model iAF1260.cmd: 68.06782498969974
Model iJN1463.cmd: 0.03165391710307842
Model iMM904.cmd: 0.0016346493011908092
Cycle 716
Total biomass:
Model iAF1260.cmd: 68.12521937786939
Model iJN1463.cmd: 0.03180101435906261
Model iMM904.cmd: 0.001641770269391382
Cycle 717
Total biomass:
Model iAF1260.cmd: 68.18152853207249
Model iJN1463.cmd: 0.03236922403841999
Model iMM904.cmd: 0.0016679151803415154
Cycle 718
Total biomass:
Model iAF1260.cmd: 68.2456320134997
Model iJN1463.cmd: 0.03274646681509357
Model iMM904.cmd: 0.0016886139587557884
Cycle 719
Total biomass:
Model iAF1260.cmd: 68.2889459064853
Model iJN1463.cmd: 0.03321149665709413
Model iMM904.cmd: 0.0017102920472011963
Cycle 720
Total biomass:
Model iAF1260.cmd: 68.40971882146586
Model iJN1463.cmd: 0.033340314603905324
Model iMM904.cmd: 0.0017167759493829618
Cycle 721
Total biomass:
Model iAF1260.cmd: 68.45723602652673
Model iJN1463.cmd: 0.033496121087693294
Model iMM904.cmd: 0.0017241615312688448
Cycle 722
Total biomass:
Model iAF1260.cmd: 68.51607199452388
Model iJN1463.cmd: 0.03365822884018081
Model iMM904.cmd: 0.0017318549943629497
Cycle 723
Total biomass:
Model iAF1260.cmd: 68.57229153032284
Model iJN1463.cmd: 0.03390192753450814
Model iMM904.cmd: 0.0017423927475264493
Cycle 724
Total biomass:
Model iAF1260.cmd: 68.65068850007614
Model iJN1463.cmd: 0.03417207789742767
Model iMM904.cmd: 0.0017539140543720376
Cycle 725
Total biomass:
Model iAF1260.cmd: 68.74183782460153
Model iJN1463.cmd: 0.034402687458305686
Model iMM904.cmd: 0.0017641097523704789
Cycle 726
Total biomass:
Model iAF1260.cmd: 68.83838649107267
Model iJN1463.cmd: 0.03516584713682484
Model iMM904.cmd: 0.0017975864055083503
Cycle 727
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Total biomass:
Model iAF1260.cmd: 68.90629435519965
Model iJN1463.cmd: 0.03556645265187745
Model iMM904.cmd: 0.0018199233193743661
Cycle 728
Total biomass:
Model iAF1260.cmd: 68.99362800435875
Model iJN1463.cmd: 0.03594987277394291
Model iMM904.cmd: 0.001834872876518224
Cycle 729
Total biomass:
Model iAF1260.cmd: 69.06552082366792
Model iJN1463.cmd: 0.03621962848496124
Model iMM904.cmd: 0.0018486982007692953
Cycle 730
Total biomass:
Model iAF1260.cmd: 69.12609725584822
Model iJN1463.cmd: 0.03650813073607571
Model iMM904.cmd: 0.0018568182494901238
Cycle 731
Total biomass:
Model iAF1260.cmd: 69.2318625967745
Model iJN1463.cmd: 0.036507765654974024
Model iMM904.cmd: 0.0018567998192105222
Cycle 732
Total biomass:
Model iAF1260.cmd: 69.26304315612032
Model iJN1463.cmd: 0.037047887465391935
Model iMM904.cmd: 0.001878856986552394
Cycle 733
Total biomass:
Model iAF1260.cmd: 69.32330422712971
Model iJN1463.cmd: 0.037468207391019574
Model iMM904.cmd: 0.0018977135132308175
Cycle 734
Total biomass:
Model iAF1260.cmd: 69.43763817526467
Model iJN1463.cmd: 0.03761145431789372
Model iMM904.cmd: 0.0019048743895122035
Cycle 735
Total biomass:
Model iAF1260.cmd: 69.54280677695313
Model iJN1463.cmd: 0.038172352163603866
Model iMM904.cmd: 0.0019278907007618063
Cycle 736
Total biomass:
Model iAF1260.cmd: 69.60988398364108
Model iJN1463.cmd: 0.038345794231678734
Model iMM904.cmd: 0.0019361217162109066
Cycle 737
Total biomass:
Model iAF1260.cmd: 69.70431937691912
Model iJN1463.cmd: 0.03892404042976586
Model iMM904.cmd: 0.0019779326920429776
Cycle 738
Total biomass:
Model iAF1260.cmd: 69.78433382022097
Model iJN1463.cmd: 0.039180273538942094
Model iMM904.cmd: 0.0019931071166258444
Cycle 739
Total biomass:
Model iAF1260.cmd: 69.90649295138235
Model iJN1463.cmd: 0.03967166240490904
Model iMM904.cmd: 0.002027405979103785
Cycle 740
Total biomass:
Model iAF1260.cmd: 70.00136555314216
Model iJN1463.cmd: 0.040230911669959644
Model iMM904.cmd: 0.00205379993629938
Cycle 741
Total biomass:
Model iAF1260.cmd: 70.09069356971558
Model iJN1463.cmd: 0.04052023796241684
Model iMM904.cmd: 0.002066389978236308
Cycle 742
Total biomass:
Model iAF1260.cmd: 70.20514087048186
Model iJN1463.cmd: 0.04081806327645352
Model iMM904.cmd: 0.0020788760066937012
Cycle 743
Total biomass:
Model iAF1260.cmd: 70.26345647794541
Model iJN1463.cmd: 0.041336607788326214
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Model iMM904.cmd: 0.002101266025841114
Cycle 744
Total biomass:
Model iAF1260.cmd: 70.31697763077506
Model iJN1463.cmd: 0.0416736724169165
Model iMM904.cmd: 0.00211098299886818
Cycle 745
Total biomass:
Model iAF1260.cmd: 70.40661170389214
Model iJN1463.cmd: 0.041971673093990014
Model iMM904.cmd: 0.0021242345903943094
Cycle 746
Total biomass:
Model iAF1260.cmd: 70.46500809259385
Model iJN1463.cmd: 0.042762596576745034
Model iMM904.cmd: 0.0021576534208918178
Cycle 747
Total biomass:
Model iAF1260.cmd: 70.54873189953062
Model iJN1463.cmd: 0.04321454834032901
Model iMM904.cmd: 0.002172789752488265
Cycle 748
Total biomass:
Model iAF1260.cmd: 70.6352162775457
Model iJN1463.cmd: 0.043901859574665644
Model iMM904.cmd: 0.0022268619325957317
Cycle 749
Total biomass:
Model iAF1260.cmd: 70.7062218991875
Model iJN1463.cmd: 0.04430434815171467
Model iMM904.cmd: 0.002240270573260965
Cycle 750
Total biomass:
Model iAF1260.cmd: 70.76441422244604
Model iJN1463.cmd: 0.044320427241723186
Model iMM904.cmd: 0.0022402481748814477
Cycle 751
Total biomass:
Model iAF1260.cmd: 70.80275560333095
Model iJN1463.cmd: 0.04483918193531964
Model iMM904.cmd: 0.0022624367127992446
Cycle 752
Total biomass:
Model iAF1260.cmd: 70.86165113404716
Model iJN1463.cmd: 0.045486509661574866
Model iMM904.cmd: 0.002289002044527778
Cycle 753
Total biomass:
Model iAF1260.cmd: 70.94286804253461
Model iJN1463.cmd: 0.045980911375669356
Model iMM904.cmd: 0.002310275135969212
Cycle 754
Total biomass:
Model iAF1260.cmd: 70.99725991393484
Model iJN1463.cmd: 0.04633003066759148
Model iMM904.cmd: 0.0023241655647984784
Cycle 755
Total biomass:
Model iAF1260.cmd: 71.09021600231641
Model iJN1463.cmd: 0.04702324232453042
Model iMM904.cmd: 0.0023524668158404695
Cycle 756
Total biomass:
Model iAF1260.cmd: 71.1812399126966
Model iJN1463.cmd: 0.04811345580566624
Model iMM904.cmd: 0.002400012809172866
Cycle 757
Total biomass:
Model iAF1260.cmd: 71.29669567389642
Model iJN1463.cmd: 0.04833754503102669
Model iMM904.cmd: 0.002410388134726561
Cycle 758
Total biomass:
Model iAF1260.cmd: 71.36396550367085
Model iJN1463.cmd: 0.048505303168753074
Model iMM904.cmd: 0.002418140468788026
Cycle 759
Total biomass:
Model iAF1260.cmd: 71.44034805595365
Model iJN1463.cmd: 0.04923349815902415
Model iMM904.cmd: 0.0024477556641074663
Cycle 760
Total biomass:
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Model iAF1260.cmd: 71.5364730477434
Model iJN1463.cmd: 0.04923324894664481
Model iMM904.cmd: 0.002447816902428403
Cycle 761
Total biomass:
Model iAF1260.cmd: 71.63391024487287
Model iJN1463.cmd: 0.049465624103396416
Model iMM904.cmd: 0.002458059745984282
Cycle 762
Total biomass:
Model iAF1260.cmd: 71.73064217054149
Model iJN1463.cmd: 0.049465129447155386
Model iMM904.cmd: 0.002458035205193007
Cycle 763
Total biomass:
Model iAF1260.cmd: 71.76937426555241
Model iJN1463.cmd: 0.049829687605171126
Model iMM904.cmd: 0.002472189513288689
Cycle 764
Total biomass:
Model iAF1260.cmd: 71.8292118559082
Model iJN1463.cmd: 0.05099798550171321
Model iMM904.cmd: 0.0025206018009447523
Cycle 765
Total biomass:
Model iAF1260.cmd: 71.91740084697358
Model iJN1463.cmd: 0.051623973322031856
Model iMM904.cmd: 0.0025462877703167656
Cycle 766
Total biomass:
Model iAF1260.cmd: 71.99776667074364
Model iJN1463.cmd: 0.052016989581443955
Model iMM904.cmd: 0.002562002353814776
Cycle 767
Total biomass:
Model iAF1260.cmd: 72.08798829610765
Model iJN1463.cmd: 0.052419826996196635
Model iMM904.cmd: 0.0025772613636523035
Cycle 768
Total biomass:
Model iAF1260.cmd: 72.13994009683132
Model iJN1463.cmd: 0.05301401927034732
Model iMM904.cmd: 0.0026012153938649975
Cycle 769
Total biomass:
Model iAF1260.cmd: 72.22939900816284
Model iJN1463.cmd: 0.05338653488514616
Model iMM904.cmd: 0.0026159664584720233
Cycle 770
Total biomass:
Model iAF1260.cmd: 72.33978120963454
Model iJN1463.cmd: 0.054258935222445244
Model iMM904.cmd: 0.002651583522525395
Cycle 771
Total biomass:
Model iAF1260.cmd: 72.4776401123421
Model iJN1463.cmd: 0.054524595474198474
Model iMM904.cmd: 0.0026628620817911587
Cycle 772
Total biomass:
Model iAF1260.cmd: 72.53672692579285
Model iJN1463.cmd: 0.05535348345947942
Model iMM904.cmd: 0.0026942930331383
Cycle 773
Total biomass:
Model iAF1260.cmd: 72.59178934479631
Model iJN1463.cmd: 0.05600195086957212
Model iMM904.cmd: 0.0027195373687835035
Cycle 774
Total biomass:
Model iAF1260.cmd: 72.67186199041002
Model iJN1463.cmd: 0.05627680926767652
Model iMM904.cmd: 0.0027311130406448
Cycle 775
Total biomass:
Model iAF1260.cmd: 72.74226642463674
Model iJN1463.cmd: 0.05627624649958387
Model iMM904.cmd: 0.0027310857397176754
Cycle 776
Total biomass:
Model iAF1260.cmd: 72.86119594492696
Model iJN1463.cmd: 0.056558398869370454
Model iMM904.cmd: 0.0027422716318768383
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Cycle 777
Total biomass:
Model iAF1260.cmd: 72.91974139185653
Model iJN1463.cmd: 0.05714304369511532
Model iMM904.cmd: 0.002766224824338216
Cycle 778
Total biomass:
Model iAF1260.cmd: 73.05259727422516
Model iJN1463.cmd: 0.05753977885314145
Model iMM904.cmd: 0.0027815185500895357
Cycle 779
Total biomass:
Model iAF1260.cmd: 73.13840142585924
Model iJN1463.cmd: 0.05753920345535293
Model iMM904.cmd: 0.0027814907472089997
Cycle 780
Total biomass:
Model iAF1260.cmd: 73.21294931267981
Model iJN1463.cmd: 0.058400159696504604
Model iMM904.cmd: 0.002813364909671469
Cycle 781
Total biomass:
Model iAF1260.cmd: 73.31789415893624
Model iJN1463.cmd: 0.05887428142128051
Model iMM904.cmd: 0.002830368693193586
Cycle 782
Total biomass:
Model iAF1260.cmd: 73.38736131068588
Model iJN1463.cmd: 0.05985996945996616
Model iMM904.cmd: 0.0028682131738991534
Cycle 783
Total biomass:
Model iAF1260.cmd: 73.47935685382089
Model iJN1463.cmd: 0.060268190895585466
Model iMM904.cmd: 0.0028839211803028068
Cycle 784
Total biomass:
Model iAF1260.cmd: 73.58930669170621
Model iJN1463.cmd: 0.060267588584579146
Model iMM904.cmd: 0.002883892724351929
Cycle 785
Total biomass:
Model iAF1260.cmd: 73.67901357273513
Model iJN1463.cmd: 0.06099486728178
Model iMM904.cmd: 0.002913313316432278
Cycle 786
Total biomass:
Model iAF1260.cmd: 73.76106962373954
Model iJN1463.cmd: 0.061496456314521705
Model iMM904.cmd: 0.0029313936223620807
Cycle 787
Total biomass:
Model iAF1260.cmd: 73.83844680264554
Model iJN1463.cmd: 0.06149584134995858
Model iMM904.cmd: 0.002931364346489013
Cycle 788
Total biomass:
Model iAF1260.cmd: 73.93026842347552
Model iJN1463.cmd: 0.06245662433562183
Model iMM904.cmd: 0.0029650357317483715
Cycle 789
Total biomass:
Model iAF1260.cmd: 73.97727646035898
Model iJN1463.cmd: 0.06277069380031212
Model iMM904.cmd: 0.0029776539123971585
Cycle 790
Total biomass:
Model iAF1260.cmd: 74.040425554068
Model iJN1463.cmd: 0.06309640383325973
Model iMM904.cmd: 0.002990158407208006
Cycle 791
Total biomass:
Model iAF1260.cmd: 74.12953187231429
Model iJN1463.cmd: 0.06364700104918782
Model iMM904.cmd: 0.0030118910652522494
Cycle 792
Total biomass:
Model iAF1260.cmd: 74.18875364419817
Model iJN1463.cmd: 0.06462679373766213
Model iMM904.cmd: 0.003050895529869346
Cycle 793
Total biomass:
Model iAF1260.cmd: 74.24980712208891
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Model iJN1463.cmd: 0.0650766794831825
Model iMM904.cmd: 0.00368009453894632
Cycle 794
Total biomass:
Model iAF1260.cmd: 74.29910747248437
Model iJN1463.cmd: 0.06554248456709597
Model iMM904.cmd: 0.0030849913126338633
Cycle 795
Total biomass:
Model iAF1260.cmd: 74.39443879800491
Model iJN1463.cmd: 0.06577060216796209
Model iMM904.cmd: 0.003094579849300334
Cycle 796
Total biomass:
Model iAF1260.cmd: 74.50127254005481
Model iJN1463.cmd: 0.0657699444633434
Model iMM904.cmd: 0.003094548929145393
Cycle 797
Total biomass:
Model iAF1260.cmd: 74.64146517770023
Model iJN1463.cmd: 0.06618671495547027
Model iMM904.cmd: 0.0031120103845317924
Cycle 798
Total biomass:
Model iAF1260.cmd: 74.70442471784412
Model iJN1463.cmd: 0.06618605308840185
Model iMM904.cmd: 0.003111979288302981
Cycle 799
Total biomass:
Model iAF1260.cmd: 74.78413238210241
Model iJN1463.cmd: 0.06689556054640022
Model iMM904.cmd: 0.0031381160876608636
Cycle 800
Total biomass:
Model iAF1260.cmd: 74.89107825278988
Model iJN1463.cmd: 0.06739033873361103
Model iMM904.cmd: 0.0031559877461968693
Cycle 801
Total biomass:
Model iAF1260.cmd: 74.99400105955309
Model iJN1463.cmd: 0.06763522584991785
Model iMM904.cmd: 0.0031660367933587664
Cycle 802
Total biomass:
Model iAF1260.cmd: 75.10124634759805
Model iJN1463.cmd: 0.06840144543895371
Model iMM904.cmd: 0.0031937958189264316
Cycle 803
Total biomass:
Model iAF1260.cmd: 75.21896978448471
Model iJN1463.cmd: 0.06891494347382562
Model iMM904.cmd: 0.0032114937147582276
Cycle 804
Total biomass:
Model iAF1260.cmd: 75.33499406406625
Model iJN1463.cmd: 0.06926927445032237
Model iMM904.cmd: 0.003224764597924517
Cycle 805
Total biomass:
Model iAF1260.cmd: 75.40633029120148
Model iJN1463.cmd: 0.06926858177472973
Model iMM904.cmd: 0.003224732359698478
Cycle 806
Total biomass:
Model iAF1260.cmd: 75.50012191658774
Model iJN1463.cmd: 0.06979283720847945
Model iMM904.cmd: 0.0032420432696715577
Cycle 807
Total biomass:
Model iAF1260.cmd: 75.5600989763602
Model iJN1463.cmd: 0.07074631173620484
Model iMM904.cmd: 0.003276555503182725
Cycle 808
Total biomass:
Model iAF1260.cmd: 75.66189492939142
Model iJN1463.cmd: 0.07155449983450489
Model iMM904.cmd: 0.003307689700477331
Cycle 809
Total biomass:
Model iAF1260.cmd: 75.72940634602702
Model iJN1463.cmd: 0.07266063782249362
Model iMM904.cmd: 0.003345269122835375
Cycle 810
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Total biomass:
Model iAF1260.cmd: 75.80218386337967
Model iJN1463.cmd: 0.07322128274097724
Model iMM904.cmd: 0.0033807069911864353
Cycle 811
Total biomass:
Model iAF1260.cmd: 75.91576997748689
Model iJN1463.cmd: 0.07424445816268357
Model iMM904.cmd: 0.0034181737944397367
Cycle 812
Total biomass:
Model iAF1260.cmd: 76.0171921371834
Model iJN1463.cmd: 0.07510694061954193
Model iMM904.cmd: 0.0034509761465808552
Cycle 813
Total biomass:
Model iAF1260.cmd: 76.07052511073337
Model iJN1463.cmd: 0.0760454770933642
Model iMM904.cmd: 0.003484750592849356
Cycle 814
Total biomass:
Model iAF1260.cmd: 76.17422419893326
Model iJN1463.cmd: 0.07702255091566575
Model iMM904.cmd: 0.0035490079386842404
Cycle 815
Total biomass:
Model iAF1260.cmd: 76.2479014040338
Model iJN1463.cmd: 0.07702178069015661
Model iMM904.cmd: 0.003548972473128236
Cycle 816
Total biomass:
Model iAF1260.cmd: 76.34241881484488
Model iJN1463.cmd: 0.07741212435379784
Model iMM904.cmd: 0.003563369805103908
Cycle 817
Total biomass:
Model iAF1260.cmd: 76.4027496189551
Model iJN1463.cmd: 0.07802797482158608
Model iMM904.cmd: 0.003583770357112775
Cycle 818
Total biomass:
Model iAF1260.cmd: 76.4808615433876
Model iJN1463.cmd: 0.0795279669818097
Model iMM904.cmd: 0.00363662564809102
Cycle 819
Total biomass:
Model iAF1260.cmd: 76.589534393086
Model iJN1463.cmd: 0.08018010877002398
Model iMM904.cmd: 0.00365859192890944
Cycle 820
Total biomass:
Model iAF1260.cmd: 76.70019062697041
Model iJN1463.cmd: 0.08017930696893631
Model iMM904.cmd: 0.00365855535118882
Cycle 821
Total biomass:
Model iAF1260.cmd: 76.79680961679716
Model iJN1463.cmd: 0.08085907676059825
Model iMM904.cmd: 0.003681333985676979
Cycle 822
Total biomass:
Model iAF1260.cmd: 76.88889120492983
Model iJN1463.cmd: 0.08235680214318794
Model iMM904.cmd: 0.003736613921340032
Cycle 823
Total biomass:
Model iAF1260.cmd: 76.99810884831625
Model iJN1463.cmd: 0.08263539384727679
Model iMM904.cmd: 0.0037480366546461144
Cycle 824
Total biomass:
Model iAF1260.cmd: 77.09097931068264
Model iJN1463.cmd: 0.08263456749333836
Model iMM904.cmd: 0.0037479993950347143
Cycle 825
Total biomass:
Model iAF1260.cmd: 77.18387602449778
Model iJN1463.cmd: 0.08292071453089167
Model iMM904.cmd: 0.003759478970143064
Cycle 826
Total biomass:
Model iAF1260.cmd: 77.26900635303977
Model iJN1463.cmd: 0.08445320640812519
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Model iMM904.cmd: 0.0038131296602762097
Cycle 827
Total biomass:
Model iAF1260.cmd: 77.36230255888385
Model iJN1463.cmd: 0.08583635230322127
Model iMM904.cmd: 0.003863311587749482
Cycle 828
Total biomass:
Model iAF1260.cmd: 77.4371722414023
Model iJN1463.cmd: 0.08652471258643374
Model iMM904.cmd: 0.003885558442019795
Cycle 829
Total biomass:
Model iAF1260.cmd: 77.48931569521197
Model iJN1463.cmd: 0.08729833363168774
Model iMM904.cmd: 0.003935969981476373
Cycle 830
Total biomass:
Model iAF1260.cmd: 77.551840315994
Model iJN1463.cmd: 0.08779893253755078
Model iMM904.cmd: 0.003954799008038442
Cycle 831
Total biomass:
Model iAF1260.cmd: 77.67596799237865
Model iJN1463.cmd: 0.08850248843846444
Model iMM904.cmd: 0.003977019690773027
Cycle 832
Total biomass:
Model iAF1260.cmd: 77.76816222293037
Model iJN1463.cmd: 0.08915972550135645
Model iMM904.cmd: 0.003999282234212817
Cycle 833
Total biomass:
Model iAF1260.cmd: 77.81331844712274
Model iJN1463.cmd: 0.090576120972039
Model iMM904.cmd: 0.004046730871332526
Cycle 834
Total biomass:
Model iAF1260.cmd: 77.9110580478003
Model iJN1463.cmd: 0.0918108359485385
Model iMM904.cmd: 0.004091707858429846
Cycle 835
Total biomass:
Model iAF1260.cmd: 78.03400768800273
Model iJN1463.cmd: 0.0923265696635221
Model iMM904.cmd: 0.004111996097998077
Cycle 836
Total biomass:
Model iAF1260.cmd: 78.12645950950935
Model iJN1463.cmd: 0.09309753155559737
Model iMM904.cmd: 0.004137459960704384
Cycle 837
Total biomass:
Model iAF1260.cmd: 78.22606075856375
Model iJN1463.cmd: 0.09358535750287222
Model iMM904.cmd: 0.004156075075398713
Cycle 838
Total biomass:
Model iAF1260.cmd: 78.28603088689552
Model iJN1463.cmd: 0.09485020573854602
Model iMM904.cmd: 0.0042062079234052195
Cycle 839
Total biomass:
Model iAF1260.cmd: 78.35144390898691
Model iJN1463.cmd: 0.09568390778549445
Model iMM904.cmd: 0.004238194351878596
Cycle 840
Total biomass:
Model iAF1260.cmd: 78.47063020634116
Model iJN1463.cmd: 0.09655572571425669
Model iMM904.cmd: 0.0042706092700008673
Cycle 841
Total biomass:
Model iAF1260.cmd: 78.54284213493072
Model iJN1463.cmd: 0.09655476253975809
Model iMM904.cmd: 0.0042705678196909135
Cycle 842
Total biomass:
Model iAF1260.cmd: 78.64336616195075
Model iJN1463.cmd: 0.09783412851209285
Model iMM904.cmd: 0.004311937124961353
Cycle 843
Total biomass:
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Model iAF1260.cmd: 78.74197595223693
Model iJN1463.cmd: 0.09783315017151573
Model iMM904.cmd: 0.004311894159061457
Cycle 844
Total biomass:
Model iAF1260.cmd: 78.85937033479104
Model iJN1463.cmd: 0.09919468969362233
Model iMM904.cmd: 0.004354741683603857
Cycle 845
Total biomass:
Model iAF1260.cmd: 78.95780206874511
Model iJN1463.cmd: 0.09971741429393745
Model iMM904.cmd: 0.004373939874061698
Cycle 846
Total biomass:
Model iAF1260.cmd: 79.06129093277154
Model iJN1463.cmd: 0.101073071934627390
Model iMM904.cmd: 0.004423966285858181
Cycle 847
Total biomass:
Model iAF1260.cmd: 79.15256512353183
Model iJN1463.cmd: 0.10190685831337158
Model iMM904.cmd: 0.004449616905787916
Cycle 848
Total biomass:
Model iAF1260.cmd: 79.25126376330073
Model iJN1463.cmd: 0.10379862634711336
Model iMM904.cmd: 0.004515580000091981
Cycle 849
Total biomass:
Model iAF1260.cmd: 79.33766182866597
Model iJN1463.cmd: 0.104767398021647
Model iMM904.cmd: 0.004550674167354914
Cycle 850
Total biomass:
Model iAF1260.cmd: 79.45957686757436
Model iJN1463.cmd: 0.10541360271486482
Model iMM904.cmd: 0.0045734540211877575
Cycle 851
Total biomass:
Model iAF1260.cmd: 79.55936962477753
Model iJN1463.cmd: 0.1061754121608613
Model iMM904.cmd: 0.004598773038563614
Cycle 852
Total biomass:
Model iAF1260.cmd: 79.69494123389048
Model iJN1463.cmd: 0.106174350040676887
Model iMM904.cmd: 0.004598727675735456
Cycle 853
Total biomass:
Model iAF1260.cmd: 79.80532523976197
Model iJN1463.cmd: 0.10782371068050205
Model iMM904.cmd: 0.004649334368856728
Cycle 854
Total biomass:
Model iAF1260.cmd: 79.87710150320659
Model iJN1463.cmd: 0.1084893935345408
Model iMM904.cmd: 0.0046715213716144064
Cycle 855
Total biomass:
Model iAF1260.cmd: 79.96109517980759
Model iJN1463.cmd: 0.1098944446966983
Model iMM904.cmd: 0.004717514925170391
Cycle 856
Total biomass:
Model iAF1260.cmd: 80.01477554187139
Model iJN1463.cmd: 0.11228578600614773
Model iMM904.cmd: 0.0047927884272806354
Cycle 857
Total biomass:
Model iAF1260.cmd: 80.07864871515665
Model iJN1463.cmd: 0.1135435326956187
Model iMM904.cmd: 0.004834352436949776
Cycle 858
Total biomass:
Model iAF1260.cmd: 80.15290762633397
Model iJN1463.cmd: 0.113542397260047849
Model iMM904.cmd: 0.004834305301130563
Cycle 859
Total biomass:
Model iAF1260.cmd: 80.22358389327482
Model iJN1463.cmd: 0.11508050983847488
Model iMM904.cmd: 0.004887902211992012
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Cycle 860
Total biomass:
Model iAF1260.cmd: 80.376049653122
Model iJN1463.cmd: 0.11594506407953405
Model iMM904.cmd: 0.0049164328807034825
Cycle 861
Total biomass:
Model iAF1260.cmd: 80.47106284936687
Model iJN1463.cmd: 0.11594390462891338
Model iMM904.cmd: 0.004916384023944774
Cycle 862
Total biomass:
Model iAF1260.cmd: 80.51527418794676
Model iJN1463.cmd: 0.11753720614786542
Model iMM904.cmd: 0.004966522017709206
Cycle 863
Total biomass:
Model iAF1260.cmd: 80.6256103860051
Model iJN1463.cmd: 0.11850072746177676
Model iMM904.cmd: 0.004995169937079171
Cycle 864
Total biomass:
Model iAF1260.cmd: 80.70293024903734
Model iJN1463.cmd: 0.11887409887951379
Model iMM904.cmd: 0.005009179636241458
Cycle 865
Total biomass:
Model iAF1260.cmd: 80.75896670133326
Model iJN1463.cmd: 0.11959647356592076
Model iMM904.cmd: 0.005031285353257661
Cycle 866
Total biomass:
Model iAF1260.cmd: 80.88763817284286
Model iJN1463.cmd: 0.12096780890149363
Model iMM904.cmd: 0.005075820758334323
Cycle 867
Total biomass:
Model iAF1260.cmd: 80.98264153927911
Model iJN1463.cmd: 0.1223835569356029
Model iMM904.cmd: 0.005122050717971482
Cycle 868
Total biomass:
Model iAF1260.cmd: 81.10447999597335
Model iJN1463.cmd: 0.12238233310003359
Model iMM904.cmd: 0.005121999748874803
Cycle 869
Total biomass:
Model iAF1260.cmd: 81.17108119617326
Model iJN1463.cmd: 0.12448105805793579
Model iMM904.cmd: 0.005190944703087699
Cycle 870
Total biomass:
Model iAF1260.cmd: 81.21078556513281
Model iJN1463.cmd: 0.1257132693613321
Model iMM904.cmd: 0.005232693710740603
Cycle 871
Total biomass:
Model iAF1260.cmd: 81.30269276198455
Model iJN1463.cmd: 0.12754794789076027
Model iMM904.cmd: 0.00528665929042074
Cycle 872
Total biomass:
Model iAF1260.cmd: 81.42115745381949
Model iJN1463.cmd: 0.12843343682648564
Model iMM904.cmd: 0.005313889307278966
Cycle 873
Total biomass:
Model iAF1260.cmd: 81.48242375149886
Model iJN1463.cmd: 0.12885109768119252
Model iMM904.cmd: 0.00532883242618513
Cycle 874
Total biomass:
Model iAF1260.cmd: 81.58358839320982
Model iJN1463.cmd: 0.12985407160080265
Model iMM904.cmd: 0.0053573805935846815
Cycle 875
Total biomass:
Model iAF1260.cmd: 81.7025815994889
Model iJN1463.cmd: 0.1305174912884043
Model iMM904.cmd: 0.005380145492400663
Cycle 876
Total biomass:
Model iAF1260.cmd: 81.80997628924366
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Model iJN1463.cmd: 0.1309499959004092
Model iMM904.cmd: 0.005396104825619934
Cycle 877
Total biomass:
Model iAF1260.cmd: 81.96197779682498
Model iJN1463.cmd: 0.13256668604761251
Model iMM904.cmd: 0.0054472909875107785
Cycle 878
Total biomass:
Model iAF1260.cmd: 82.11473608559498
Model iJN1463.cmd: 0.13359911829090237
Model iMM904.cmd: 0.005476551772134231
Cycle 879
Total biomass:
Model iAF1260.cmd: 82.22864454435779
Model iJN1463.cmd: 0.133597782230102223
Model iMM904.cmd: 0.005476497335803919
Cycle 880
Total biomass:
Model iAF1260.cmd: 82.3143948994448
Model iJN1463.cmd: 0.1347786407874317
Model iMM904.cmd: 0.005514831569726186
Cycle 881
Total biomass:
Model iAF1260.cmd: 82.38839084177384
Model iJN1463.cmd: 0.13648427632198504
Model iMM904.cmd: 0.0055673805090935375
Cycle 882
Total biomass:
Model iAF1260.cmd: 82.45227041857646
Model iJN1463.cmd: 0.1394272764217318
Model iMM904.cmd: 0.00566108291929902
Cycle 883
Total biomass:
Model iAF1260.cmd: 82.54353491874308
Model iJN1463.cmd: 0.14154467904492038
Model iMM904.cmd: 0.005727375392646486
Cycle 884
Total biomass:
Model iAF1260.cmd: 82.681680196728
Model iJN1463.cmd: 0.14259713977684357
Model iMM904.cmd: 0.00575850911398568
Cycle 885
Total biomass:
Model iAF1260.cmd: 82.8021723192194
Model iJN1463.cmd: 0.14415291232942715
Model iMM904.cmd: 0.005806557561668476
Cycle 886
Total biomass:
Model iAF1260.cmd: 82.92079669864118
Model iJN1463.cmd: 0.14526651678375022
Model iMM904.cmd: 0.0058386146933634584
Cycle 887
Total biomass:
Model iAF1260.cmd: 82.98544052212763
Model iJN1463.cmd: 0.14769782623192362
Model iMM904.cmd: 0.005920906293359222
Cycle 888
Total biomass:
Model iAF1260.cmd: 83.12065349373906
Model iJN1463.cmd: 0.14962412835385233
Model iMM904.cmd: 0.005979501503874302
Cycle 889
Total biomass:
Model iAF1260.cmd: 83.2082760516719
Model iJN1463.cmd: 0.15053269738470135
Model iMM904.cmd: 0.006028755713483892
Cycle 890
Total biomass:
Model iAF1260.cmd: 83.26697825076896
Model iJN1463.cmd: 0.1514734327304582
Model iMM904.cmd: 0.006056545204726819
Cycle 891
Total biomass:
Model iAF1260.cmd: 83.3133781383597
Model iJN1463.cmd: 0.1551676532201679
Model iMM904.cmd: 0.006164616970345218
Cycle 892
Total biomass:
Model iAF1260.cmd: 83.4091793633885
Model iJN1463.cmd: 0.15758447106067403
Model iMM904.cmd: 0.006232847811602307
Cycle 893
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Total biomass:
Model iAF1260.cmd: 83.533872986423
Model iJN1463.cmd: 0.1581733836667345
Model iMM904.cmd: 0.006259698696386992
Cycle 894
Total biomass:
Model iAF1260.cmd: 83.6400574484561
Model iJN1463.cmd: 0.15944485038733017
Model iMM904.cmd: 0.006293615388186168
Cycle 895
Total biomass:
Model iAF1260.cmd: 83.69835258695305
Model iJN1463.cmd: 0.1599902319702159
Model iMM904.cmd: 0.006311863736580244
Cycle 896
Total biomass:
Model iAF1260.cmd: 83.82321101490086
Model iJN1463.cmd: 0.16205837082245192
Model iMM904.cmd: 0.006373668316383812
Cycle 897
Total biomass:
Model iAF1260.cmd: 83.88455385279589
Model iJN1463.cmd: 0.16617995487486606
Model iMM904.cmd: 0.006492132583484216
Cycle 898
Total biomass:
Model iAF1260.cmd: 83.94561630215378
Model iJN1463.cmd: 0.16717428976521798
Model iMM904.cmd: 0.006521655353433234
Cycle 899
Total biomass:
Model iAF1260.cmd: 84.07135998151533
Model iJN1463.cmd: 0.16820379116325443
Model iMM904.cmd: 0.006551252956080301
Cycle 900
Total biomass:
Model iAF1260.cmd: 84.15269990426073
Model iJN1463.cmd: 0.16956639630642184
Model iMM904.cmd: 0.006587689294886829
Cycle 901
Total biomass:
Model iAF1260.cmd: 84.22018757565102
Model iJN1463.cmd: 0.17123092785787408
Model iMM904.cmd: 0.006637852793429131
Cycle 902
Total biomass:
Model iAF1260.cmd: 84.343799834311
Model iJN1463.cmd: 0.17122921711194586
Model iMM904.cmd: 0.0066377877025205
Cycle 903
Total biomass:
Model iAF1260.cmd: 84.46893626605049
Model iJN1463.cmd: 0.17211088949266665
Model iMM904.cmd: 0.00666359949502082
Cycle 904
Total biomass:
Model iAF1260.cmd: 84.5457628787493
Model iJN1463.cmd: 0.17480260823734958
Model iMM904.cmd: 0.006733212027264336
Cycle 905
Total biomass:
Model iAF1260.cmd: 84.65653387749364
Model iJN1463.cmd: 0.17622850939145993
Model iMM904.cmd: 0.006769332317727562
Cycle 906
Total biomass:
Model iAF1260.cmd: 84.72651510321624
Model iJN1463.cmd: 0.17684556749876074
Model iMM904.cmd: 0.0067889125034442275
Cycle 907
Total biomass:
Model iAF1260.cmd: 84.87954297257795
Model iJN1463.cmd: 0.17684379904335104
Model iMM904.cmd: 0.0067888448082124185
Cycle 908
Total biomass:
Model iAF1260.cmd: 84.99120000495027
Model iJN1463.cmd: 0.17684203060536066
Model iMM904.cmd: 0.0067887770841117825
Cycle 909
Total biomass:
Model iAF1260.cmd: 85.1137038290761
Model iJN1463.cmd: 0.17820590586078155
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Model iMM904.cmd: 0.006824385850077654
Cycle 910
Total biomass:
Model iAF1260.cmd: 85.2442889611754
Model iJN1463.cmd: 0.1805140914749452
Model iMM904.cmd: 0.0068884955136595035
Cycle 911
Total biomass:
Model iAF1260.cmd: 85.2990519735089
Model iJN1463.cmd: 0.1839177793069265
Model iMM904.cmd: 0.006985616526633302
Cycle 912
Total biomass:
Model iAF1260.cmd: 85.36739811407433
Model iJN1463.cmd: 0.18793069273697743
Model iMM904.cmd: 0.007096330047797912
Cycle 913
Total biomass:
Model iAF1260.cmd: 85.43723721402422
Model iJN1463.cmd: 0.19192554215752602
Model iMM904.cmd: 0.0072071696579381755
Cycle 914
Total biomass:
Model iAF1260.cmd: 85.54022119723277
Model iJN1463.cmd: 0.1929312891650278
Model iMM904.cmd: 0.007237382639930309
Cycle 915
Total biomass:
Model iAF1260.cmd: 85.6868298623637
Model iJN1463.cmd: 0.19292935985252427
Model iMM904.cmd: 0.007237310305025417
Cycle 916
Total biomass:
Model iAF1260.cmd: 85.78188143510909
Model iJN1463.cmd: 0.19292743055892675
Model iMM904.cmd: 0.007237237954325084
Cycle 917
Total biomass:
Model iAF1260.cmd: 85.85669166052735
Model iJN1463.cmd: 0.19602879535709544
Model iMM904.cmd: 0.007312555168259909
Cycle 918
Total biomass:
Model iAF1260.cmd: 85.96681397401473
Model iJN1463.cmd: 0.19761534695137556
Model iMM904.cmd: 0.007354222529343439
Cycle 919
Total biomass:
Model iAF1260.cmd: 86.07287608805218
Model iJN1463.cmd: 0.20041115901219086
Model iMM904.cmd: 0.007438667956426342
Cycle 920
Total biomass:
Model iAF1260.cmd: 86.19470771929348
Model iJN1463.cmd: 0.20199766678266967
Model iMM904.cmd: 0.0074796725736173495
Cycle 921
Total biomass:
Model iAF1260.cmd: 86.29884372172437
Model iJN1463.cmd: 0.20266035769788188
Model iMM904.cmd: 0.0074993956704246965
Cycle 922
Total biomass:
Model iAF1260.cmd: 86.45653809544946
Model iJN1463.cmd: 0.20383910863616728
Model iMM904.cmd: 0.007536452844210873
Cycle 923
Total biomass:
Model iAF1260.cmd: 86.51871681316432
Model iJN1463.cmd: 0.20627626930331303
Model iMM904.cmd: 0.00759805986902305
Cycle 924
Total biomass:
Model iAF1260.cmd: 86.59534816527757
Model iJN1463.cmd: 0.2078733254299046
Model iMM904.cmd: 0.00764089746754862
Cycle 925
Total biomass:
Model iAF1260.cmd: 86.72352272700756
Model iJN1463.cmd: 0.20945975857871924
Model iMM904.cmd: 0.0076802633467033254
Cycle 926
Total biomass:
```

```
Model iAF1260.cmd: 86.80308067232603
Model iJN1463.cmd: 0.2106558687415226
Model iMM904.cmd: 0.007711846032370656
Cycle 927
Total biomass:
Model iAF1260.cmd: 86.98918400460647
Model iJN1463.cmd: 0.21136202127564951
Model iMM904.cmd: 0.007733623424655037
Cycle 928
Total biomass:
Model iAF1260.cmd: 87.05158052499935
Model iJN1463.cmd: 0.21259842927399147
Model iMM904.cmd: 0.007766154442103477
Cycle 929
Total biomass:
Model iAF1260.cmd: 87.13219147196843
Model iJN1463.cmd: 0.21546886682804708
Model iMM904.cmd: 0.007841769375558373
Cycle 930
Total biomass:
Model iAF1260.cmd: 87.19132952203024
Model iJN1463.cmd: 0.2191194000249975
Model iMM904.cmd: 0.007940494752568056
Cycle 931
Total biomass:
Model iAF1260.cmd: 87.27570413045264
Model iJN1463.cmd: 0.2194160576087219
Model iMM904.cmd: 0.007940415353516852
Cycle 932
Total biomass:
Model iAF1260.cmd: 87.40032092014245
Model iJN1463.cmd: 0.2194138634481459
Model iMM904.cmd: 0.00794033595934746
Cycle 933
Total biomass:
Model iAF1260.cmd: 87.51089825701769
Model iJN1463.cmd: 0.22344778334444984
Model iMM904.cmd: 0.008046539218947987
Cycle 934
Total biomass:
Model iAF1260.cmd: 87.60690446005381
Model iJN1463.cmd: 0.22503406074868534
Model iMM904.cmd: 0.008092136954841301
Cycle 935
Total biomass:
Model iAF1260.cmd: 87.69608745579477
Model iJN1463.cmd: 0.2264574033209462
Model iMM904.cmd: 0.008128200756775037
Cycle 936
Total biomass:
Model iAF1260.cmd: 87.82846293952798
Model iJN1463.cmd: 0.22804365062898196
Model iMM904.cmd: 0.008178682572576404
Cycle 937
Total biomass:
Model iAF1260.cmd: 87.93189077781395
Model iJN1463.cmd: 0.2288122930173718
Model iMM904.cmd: 0.008204262634059347
Cycle 938
Total biomass:
Model iAF1260.cmd: 87.97491841040659
Model iJN1463.cmd: 0.23266088289222783
Model iMM904.cmd: 0.00831380950305106
Cycle 939
Total biomass:
Model iAF1260.cmd: 88.05220957373264
Model iJN1463.cmd: 0.23424706816553825
Model iMM904.cmd: 0.008360631005882092
Cycle 940
Total biomass:
Model iAF1260.cmd: 88.15633310646716
Model iJN1463.cmd: 0.236866802307183
Model iMM904.cmd: 0.008429177483716289
Cycle 941
Total biomass:
Model iAF1260.cmd: 88.25089245141677
Model iJN1463.cmd: 0.2400109829736994
Model iMM904.cmd: 0.008520086400148886
Cycle 942
Total biomass:
Model iAF1260.cmd: 88.3272055666683
Model iJN1463.cmd: 0.24242876404294997
Model iMM904.cmd: 0.00858807493940244
```

```
Cycle 943
Total biomass:
Model iAF1260.cmd: 88.42199723463777
Model iJN1463.cmd: 0.24603830315648717
Model iMM904.cmd: 0.008691513303549768
Cycle 944
Total biomass:
Model iAF1260.cmd: 88.56691760317837
Model iJN1463.cmd: 0.24921286653759345
Model iMM904.cmd: 0.008775085240091782
Cycle 945
Total biomass:
Model iAF1260.cmd: 88.67771122187266
Model iJN1463.cmd: 0.2532831635118514
Model iMM904.cmd: 0.008885057867590146
Cycle 946
Total biomass:
Model iAF1260.cmd: 88.79528134792547
Model iJN1463.cmd: 0.25578997766964534
Model iMM904.cmd: 0.00895252120642225
Cycle 947
Total biomass:
Model iAF1260.cmd: 88.88226008705571
Model iJN1463.cmd: 0.26015142705242267
Model iMM904.cmd: 0.009080871798247438
Cycle 948
Total biomass:
Model iAF1260.cmd: 88.98841495704777
Model iJN1463.cmd: 0.2613750786889501
Model iMM904.cmd: 0.009116048932029814
Cycle 949
Total biomass:
Model iAF1260.cmd: 89.14582135501912
Model iJN1463.cmd: 0.2642419603619884
Model iMM904.cmd: 0.009195193672262823
Cycle 950
Total biomass:
Model iAF1260.cmd: 89.25598072166008
Model iJN1463.cmd: 0.2658278298244539
Model iMM904.cmd: 0.009238896766795335
Cycle 951
Total biomass:
Model iAF1260.cmd: 89.28476090224694
Model iJN1463.cmd: 0.26900219531029346
Model iMM904.cmd: 0.009330636452853668
Cycle 952
Total biomass:
Model iAF1260.cmd: 89.38743970142852
Model iJN1463.cmd: 0.2705880171704093
Model iMM904.cmd: 0.009375513124167687
Cycle 953
Total biomass:
Model iAF1260.cmd: 89.48058694692524
Model iJN1463.cmd: 0.27350268518436005
Model iMM904.cmd: 0.0094577918808008013
Cycle 954
Total biomass:
Model iAF1260.cmd: 89.58102697594954
Model iJN1463.cmd: 0.27508846203957726
Model iMM904.cmd: 0.009502324489317615
Cycle 955
Total biomass:
Model iAF1260.cmd: 89.65191300194486
Model iJN1463.cmd: 0.27667422303702577
Model iMM904.cmd: 0.009549558224137554
Cycle 956
Total biomass:
Model iAF1260.cmd: 89.75354287531691
Model iJN1463.cmd: 0.28059671620309046
Model iMM904.cmd: 0.009657244364759662
Cycle 957
Total biomass:
Model iAF1260.cmd: 89.84025651653583
Model iJN1463.cmd: 0.2821824221179974
Model iMM904.cmd: 0.009702322369276355
Cycle 958
Total biomass:
Model iAF1260.cmd: 89.9536746802178
Model iJN1463.cmd: 0.285205732157034
Model iMM904.cmd: 0.00979254483615336
Cycle 959
Total biomass:
Model iAF1260.cmd: 90.08551290125696
```

```
Model iJN1463.cmd: 0.28679139198178144
Model iMM904.cmd: 0.009847282731799386
Cycle 960
Total biomass:
Model iAF1260.cmd: 90.24007673752884
Model iJN1463.cmd: 0.2867885240678617
Model iMM904.cmd: 0.009847184347869638
Cycle 961
Total biomass:
Model iAF1260.cmd: 90.35670271475561
Model iJN1463.cmd: 0.28837416806473115
Model iMM904.cmd: 0.009897244475557522
Cycle 962
Total biomass:
Model iAF1260.cmd: 90.44473773345517
Model iJN1463.cmd: 0.2909756021122702
Model iMM904.cmd: 0.009973080075451661
Cycle 963
Total biomass:
Model iAF1260.cmd: 90.52968852619829
Model iJN1463.cmd: 0.29256120423831816
Model iMM904.cmd: 0.010020081921381752
Cycle 964
Total biomass:
Model iAF1260.cmd: 90.65930787049582
Model iJN1463.cmd: 0.29361201070419046
Model iMM904.cmd: 0.010048568216662054
Cycle 965
Total biomass:
Model iAF1260.cmd: 90.72773619943086
Model iJN1463.cmd: 0.2978832570094785
Model iMM904.cmd: 0.010181197894825742
Cycle 966
Total biomass:
Model iAF1260.cmd: 90.83187336562244
Model iJN1463.cmd: 0.30060696143122817
Model iMM904.cmd: 0.010265821309504087
Cycle 967
Total biomass:
Model iAF1260.cmd: 90.92267929527331
Model iJN1463.cmd: 0.3033767263710569
Model iMM904.cmd: 0.010349525863968872
Cycle 968
Total biomass:
Model iAF1260.cmd: 91.02405841330337
Model iJN1463.cmd: 0.3061925583272032
Model iMM904.cmd: 0.010449406293936028
Cycle 969
Total biomass:
Model iAF1260.cmd: 91.11575915947768
Model iJN1463.cmd: 0.3106797528854381
Model iMM904.cmd: 0.01062300192617549
Cycle 970
Total biomass:
Model iAF1260.cmd: 91.24356726898856
Model iJN1463.cmd: 0.3137339790256859
Model iMM904.cmd: 0.010717883968839546
Cycle 971
Total biomass:
Model iAF1260.cmd: 91.35828649317565
Model iJN1463.cmd: 0.31690786545003347
Model iMM904.cmd: 0.010825734999684027
Cycle 972
Total biomass:
Model iAF1260.cmd: 91.47223180111573
Model iJN1463.cmd: 0.3197217494619773
Model iMM904.cmd: 0.010896701838785286
Cycle 973
Total biomass:
Model iAF1260.cmd: 91.5827464245507
Model iJN1463.cmd: 0.32108758625954087
Model iMM904.cmd: 0.0109322322229168814
Cycle 974
Total biomass:
Model iAF1260.cmd: 91.68684250569089
Model iJN1463.cmd: 0.322672887270099
Model iMM904.cmd: 0.010989232464421938
Cycle 975
Total biomass:
Model iAF1260.cmd: 91.76916629717721
Model iJN1463.cmd: 0.3256816336179028
Model iMM904.cmd: 0.01108208291966426
Cycle 976
```

```
Total biomass:
Model iAF1260.cmd: 91.88149958282659
Model iJN1463.cmd: 0.32726468299489
Model iMM904.cmd: 0.011121886609794079
Cycle 977
Total biomass:
Model iAF1260.cmd: 91.98573943227358
Model iJN1463.cmd: 0.33043843411907364
Model iMM904.cmd: 0.011216162511043161
Cycle 978
Total biomass:
Model iAF1260.cmd: 92.10047666254083
Model iJN1463.cmd: 0.33202364161994863
Model iMM904.cmd: 0.011275570077475197
Cycle 979
Total biomass:
Model iAF1260.cmd: 92.22200217056266
Model iJN1463.cmd: 0.3336088332686044
Model iMM904.cmd: 0.011319975391850728
Cycle 980
Total biomass:
Model iAF1260.cmd: 92.2785861940586
Model iJN1463.cmd: 0.33519400906520996
Model iMM904.cmd: 0.011382121706017
Cycle 981
Total biomass:
Model iAF1260.cmd: 92.38955410334026
Model iJN1463.cmd: 0.33836768089473346
Model iMM904.cmd: 0.011498743908431393
Cycle 982
Total biomass:
Model iAF1260.cmd: 92.49593599809334
Model iJN1463.cmd: 0.3399528091024566
Model iMM904.cmd: 0.011554374018135794
Cycle 983
Total biomass:
Model iAF1260.cmd: 92.5914956664188
Model iJN1463.cmd: 0.3431264333432464
Model iMM904.cmd: 0.011665568380598462
Cycle 984
Total biomass:
Model iAF1260.cmd: 92.64901366408
Model iJN1463.cmd: 0.3477576414821052
Model iMM904.cmd: 0.011809333463179332
Cycle 985
Total biomass:
Model iAF1260.cmd: 92.82671764680249
Model iJN1463.cmd: 0.3508655773532865
Model iMM904.cmd: 0.011961667548227545
Cycle 986
Total biomass:
Model iAF1260.cmd: 92.91352492598834
Model iJN1463.cmd: 0.3556054225801786
Model iMM904.cmd: 0.012230152379092425
Cycle 987
Total biomass:
Model iAF1260.cmd: 93.02677616415282
Model iJN1463.cmd: 0.3556018665259528
Model iMM904.cmd: 0.012230030102988117
Cycle 988
Total biomass:
Model iAF1260.cmd: 93.11654663754112
Model iJN1463.cmd: 0.35718682239076466
Model iMM904.cmd: 0.01229294460044148
Cycle 989
Total biomass:
Model iAF1260.cmd: 93.24916897559574
Model iJN1463.cmd: 0.36036027428935147
Model iMM904.cmd: 0.012404818048294143
Cycle 990
Total biomass:
Model iAF1260.cmd: 93.2900331061475
Model iJN1463.cmd: 0.3619451825698845
Model iMM904.cmd: 0.012444378409787595
Cycle 991
Total biomass:
Model iAF1260.cmd: 93.45623979368276
Model iJN1463.cmd: 0.36194156311805914
Model iMM904.cmd: 0.012444253986223173
Cycle 992
Total biomass:
Model iAF1260.cmd: 93.50269047425205
Model iJN1463.cmd: 0.36670347935214376
```

```
Model iMM904.cmd: 0.01260664447026848
Cycle 993
Total biomass:
Model iAF1260.cmd: 93.59189963970417
Model iJN1463.cmd: 0.3714653479665137
Model iMM904.cmd: 0.012769945684626987
Cycle 994
Total biomass:
Model iAF1260.cmd: 93.74711482215486
Model iJN1463.cmd: 0.374386570788737
Model iMM904.cmd: 0.01289361181432516
Cycle 995
Total biomass:
Model iAF1260.cmd: 93.86597627138876
Model iJN1463.cmd: 0.37463491069232036
Model iMM904.cmd: 0.012893482880774894
Cycle 996
Total biomass:
Model iAF1260.cmd: 93.95557818502822
Model iJN1463.cmd: 0.37621967622608893
Model iMM904.cmd: 0.012942908845159131
Cycle 997
Total biomass:
Model iAF1260.cmd: 94.12643184194495
Model iJN1463.cmd: 0.37939293779497435
Model iMM904.cmd: 0.013050363128626629
Cycle 998
Total biomass:
Model iAF1260.cmd: 94.23819744999273
Model iJN1463.cmd: 0.37938914386559647
Model iMM904.cmd: 0.013050232624995703
Cycle 999
Total biomass:
Model iAF1260.cmd: 94.33903056339174
Model iJN1463.cmd: 0.38097386185692006
Model iMM904.cmd: 0.013104850665975986
Cycle 1000
Total biomass:
Model iAF1260.cmd: 94.43104999203794
Model iJN1463.cmd: 0.3825585640010269
Model iMM904.cmd: 0.01315769020883426
Cycle 1001
End of simulation
Total time = 1179.504s

STDERR empty.
```
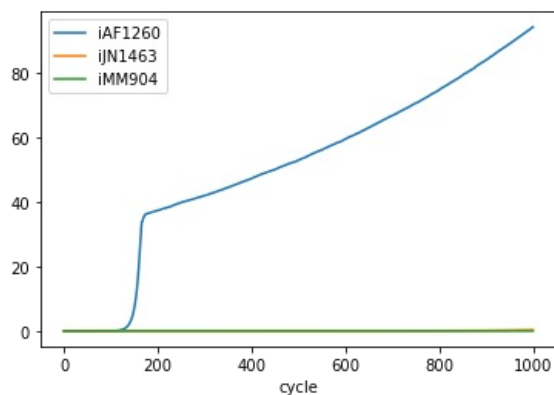
Para revisar la biomasa total

In [20]:
```python
sim.total_biomass.plot(x = "cycle")
```

Out[20]: <AxesSubplot:xlabel='cycle'>

Graficamos los resultados de biomasa y demás metabolitos interesantes en el grid:

In [21]:
```python
im = sim.get_biomass_image('iAF1260', params.all_params['maxCycles'])
im2 = sim.get_biomass_image('iJN1463',params.all_params['maxCycles'])
im3 = sim.get_biomass_image('iMM904',params.all_params['maxCycles'])

final = np.zeros((grid_size,grid_size,3))
```
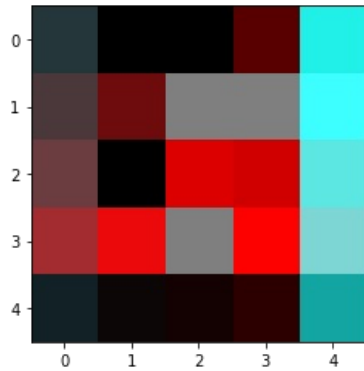
```
final[:,:,0] = im / np.max(im)
final[:,:,1] = im2 / np.max(im2)
final[:,:,2] = im3 / np.max(im3)
for rock in rock_locs:
    final[rock[0],rock[1],0:3] = 0.5
from matplotlib import pyplot as plt
plt.imshow(final)
```
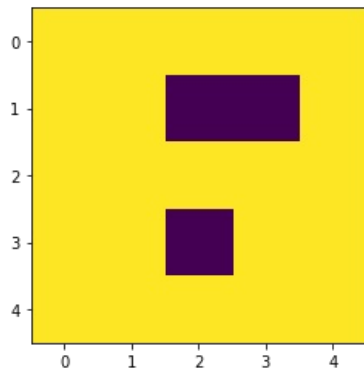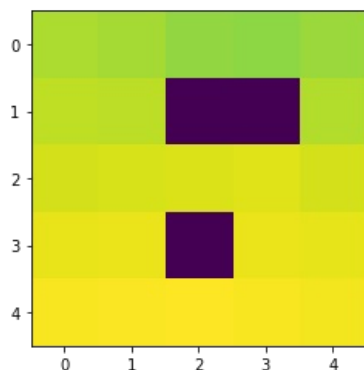
Out[21]: <matplotlib.image.AxesImage at 0x262dcdf8e20>

In [22]:
```
plt.imshow(sim.get_metabolite_image("succ_e",params.all_params['maxCycles']))
```

Out[22]: <matplotlib.image.AxesImage at 0x262dce2bf70>

In [23]:
```
plt.imshow(sim.get_metabolite_image("ac_e",params.all_params['maxCycles']))
```
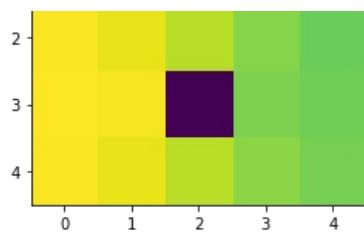
Out[23]: <matplotlib.image.AxesImage at 0x262dcea9430>

In [24]:
```
plt.imshow(sim.get_metabolite_image("nh4_e",params.all_params['maxCycles']))
```
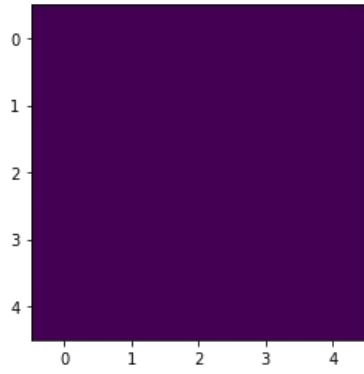
Out[24]: <matplotlib.image.AxesImage at 0x262dced8880>

In [21]: `plt.imshow(sim.get_metabolite_image("m_xyl_e",params.all_params['maxCycles']))`

Out[21]: `<matplotlib.image.AxesImage at 0x16fb711b3d0>`

In [ ]: