**Test of DSSAT-ORYZA2000 linkage** May 25, 2011

Potential production – dry season file

ORYZA2000 Filename: IR72DSP.T92

DSSAT File name: IRMA9202.RIX

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\* EXPERIMENTAL DATA FILE \*

\* \*

\* File name : IR72DS2.T92 \*

\* Crop : Oryza sativa cv. IR72 \*

\* Year/Season : 1992, dry season \*

\* Experimental site: IRRI farm, Field M10, 14.22N, 121.25E, 23m \*

\* Fertilizer : 225 kg N \*

\* 60 (transpl), 60 (mid-til), 60 (PI), 45 (flow) \*

\* People : Kropff/Cassman/Libbon/Torres \*

\* Address : IRRI, MCPO 3127, 1271 Makati City, Philippines \*

\* Additional info : Potential production experiment \*

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\* 1. Selection of modes of running \*

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\*-- RICETYPE is to selcet lowland rice or aerobic/upland rice

RICETYPE = 'LOWLAND' ! Lowland rice

\*RICETYPE = 'AEROBIC' ! Upland or aerobic rice

\*-- RUNMODE: mode of running ORYZA

RUNMODE = 'EXPERIMENT' ! ORYZA simulates particular experiment

\*RUNMODE ='EXPLORATION' ! ORYZA used for exploraton

\*-- PRODENV = Water production situation setting

PRODENV = 'POTENTIAL' ! Potential production

\*PRODENV = 'WATER BALANCE' ! Production may be water-limited

\*-- WATBAL is Choice of water balance

\* needs only be given when PRODENV = 'WATER BALANCE'

WATBAL = 'PADDY' ! PADDY water balance (for lowland soils)

\*WATBAL = 'SAHEL' ! SAHEL water balance (for freely draining upland soils)

\*WATBAL = 'SAWAH' ! SAWAH water balance (for lowland or upland soils)

\*-- NITROENV = Nitrogen production situation setting

NITROENV = 'POTENTIAL' ! Potential production

\*NITROENV = 'NITROGEN BALANCE' ! Production may be nitrogen-limited

\* WARNING: NITROGEN AND WATER LIMITATIONS AT SAME TIME IS AS

\* YET UN UNVALIDATED OPTION IN ORYZA2000!!!!

\*-- ETMOD is method for evapotranspiration calculation:

ETMOD = 'PENMAN' ! Penman-based (Van Kraalingen & Stol,1996)

\*ETMOD = 'PRIESTLY TAYLOR' ! Priestly-Taylor (")

\*ETMOD = 'MAKKINK' ! Makkink (Van Kraalingen & Stol, 1996)

\*DSSAT: EVAPO = ‘P’

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\* 2. Timer data for simulation \*

\*--------------------------------------------------------------------\*

IYEAR = 1992 ! Start year of simulation (year)

STTIME = 4. ! Start time (day number)

FINTIM = 1000. ! Finish time (days after start)

DELT = 1. ! Time step (day)

\*DSSAT: YRSIM = 92004

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\* 3. Weather station and climatic data for simulation \*

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WTRDIR = 'D:\Projects\VirtualCrop\RunExamples\IRRI\WEATHER\' ! Directory of weather data

CNTR = 'PHIL' ! Country code

ISTN = 1 ! Station code

ANGA = 0.29 ! Angstrom A parameter

ANGB = 0.45 ! Angstrom B parameter

TMCTB = 0., 0., ! Table for temperature increase

366., 0. ! Climatic Change studies

FAOF = 1. ! MultipL. factor for pot. evapotranspiration (FAO)

! Value Murty & Tuong

TMPSB = 0. ! Temperature increase in seed-bed due to cover:

! Zero when no cover over seed-bed; 9.5 with seed-bed

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\* 4. Establishment data

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\*-- ESTAB is method of establishment: 'TRANSPLANT' or 'DIRECT-SEED'

ESTAB='TRANSPLANT'

\*ESTAB='DIRECT-SEED'

\*DSSAT: PLME = ‘T’

\* Transplanting date January 16, 1992; sowing date Jan. 4.

EMD = 4 ! Day of emergence (either direct, or in seed-bed)

EMYR = 1992 ! Year of emergence

SBDUR = 12 ! Seedbed duration (days between emerging and transplanting)

\*DSSAT: PDATE = 92016

\* PAGE = 12

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\* 5. Management parameters \*

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NPLH = 5. ! Number of plants per hill

NH = 25. ! Number of hills

NPLSB = 1000. ! Number of plants in seed-bed (???)

NPLDS = 125. ! Number of plants/m2 direct-seeded

\*DSSAT: PPOP = 1000. plants / m2 in seed bed

\* PPOE = 5 \* 25 = 125 plants / m2 transplanted

\* PLDS = ‘H’

\* PLRS = 1 / SQRT(PPOE) = 8.9

\* PLPH = 5

\*\*PLANTING DETAILS

\*@P PDATE EDATE PPOP PPOE PLME PLDS PLRS PLRD PLDP PLWT PAGE PENV \*PLPH SPRL

\* 1 92016 -99 999. 125 T H 8.9 0 5 0 12 25 5 0

\*-- Initial data at emergence, for either direct-seeding or seed-bed

\* Standard data used.

LAPE = 0.0001 ! Initial leaf area per plant

DVSI = 0.0 ! Initial development stage

WLVGI = 0.0 ! Initial leaf weight

WSTI = 0.0 ! Initial stem weight

WRTI = 0.0 ! Initial stem weight

WSOI = 0.0 ! Initial weight storage organs

ZRTI = 0.0001 ! Initial root depth (m)

\*-- Re-initialization at transplanting (standard data used)

ZRTTR = 0.05 ! Root depth at transplanting (m)

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\* 6. Irrigation parameters

\* Need only to be filled-in when PRODENV = 'WATER BALANCE'

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\* No data (potential production mode)

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\* 7. Nitrogen parameters \*

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\* No data (potential production mode)

\*TWO SOIL C AND N DYNAMICS

NUTRIENT = 'GENERAL SOM' !USE GENERAL SOIL ORGANIC C AND N MODULE TO HANDLE THE NUTRIENT CHANGES

\*NUTRIENT = 'APSIM SOILN' !USE APSIM SOIL C AND N MODULE TO HANDLE THE NUTRIENT CHANGES, IT CONSISTED

!BY SOILN, POND AND SURFACEOM MODULES

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\* 8. Measured data for model calibration and comparison \*

\* And option to force measured LAI during simulation \*

\* (instead of using simulated values) \*

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\* Observed phenology: only required if program DRATES is run!!

IDOYTR = 16 ! Day of transplanting (give 0 if direct-seeded)

IYRTR = 1992 ! Year of transplanting (give 0 if direct-seeded)

IDOYPI = 58 ! Day of panicle initiation (give -99 if not observed)

IYRPI = 1992 ! Year of panicle initiation (give -99 if not observed)

IDOYFL = 83 ! Day of flowering

IYRFL = 1992 ! Year of flowering

IDOYM = 114 ! Day of maturity

IYRM = 1992 ! Year of maturity

\*DSSAT: FILEA IDAT = 92058

\* FILEA ADAT = 92083

\* FILEA MDAT = 92114

\*Leaf Area Index (m2 leaf / m2 ground):

LAI\_OBS =

1992., 4., 0.00,

1992., 16., 0.03,

1992., 34., 0.46,

1992., 58., 5.22,

1992., 68., 5.97,

1992., 83., 5.88,

1992., 97., 4.82,

1992., 114., 2.45

\*DSSAT: FILET LAID

\*-- Parameter to set forcing of observed LAI during simulation

LAI\_FRC = 0 ! No forcing

\*LAI\_FRC = 2 ! Forcing

\*Green leaf dry wt (kg/ha)

WLVG\_OBS =

1992., 4., 0.,

1992., 16., 6.,

1992., 34., 138.,

1992., 58., 1874.,

1992., 68., 2840.,

1992., 83., 3030.,

1992., 97., 2828.,

1992., 114., 1432.

\*DSSAT: FILET LWAD

\*Dead leaf dry wt (kg/ha)

WLVD\_OBS =

1992., 4., 0.,

1992., 16., 0.,

1992., 34., 0.,

1992., 58., 47.,

1992., 68., 234.,

1992., 83., 660.,

1992., 97., 1448.,

1992., 114., 2269.

\*DSSAT: FILET SNW0C

\*Stem dry wt (kg/ha)

WST\_OBS =

1992., 4., 0.,

1992., 16., 5.,

1992., 34., 109.,

1992., 58., 1577.,

1992., 68., 2902.,

1992., 83., 4771.,

1992., 97., 4373.,

1992., 114., 4243.

\*DSSAT: FILET SWAD

\*Panicle dry wt (kg/ha)

WSO\_OBS =

1992., 4., 0.,

1992., 16., 0.,

1992., 34., 0.,

1992., 58., 0.,

1992., 68., 0.,

1992., 83., 1558.,

1992., 97., 5932.,

1992., 114., 9843.

\*DSSAT: FILET PWAD

\*total dry wt (kg/ha)

WAGT\_OBS =

1992., 5., 0.,

1992., 16., 11.,

1992., 34., 247.,

1992., 58., 3498.,

1992., 68., 5976.,

1992., 83.,10019.,

1992., 97.,14580.,

1992., 114.,17787.

\*DSSAT: FILET CWAD

\*Leaf N (g N/g leaf):

FNLV\_OBS =

1992., 4., 0.027,

1992., 16., 0.027,

1992., 34., 0.051,

1992., 58., 0.034,

1992., 68., 0.033,

1992., 83., 0.025,

1992., 97., 0.023,

1992., 114., 0.014

\*DSSAT: FILET LN%D/100.

\*Leaf N (g N/m2 leaf):

NFLV\_OBS =

1992., 4., 0.54,

1992., 16., 0.54,

1992., 34., 1.53,

1992., 58., 1.22,

1992., 68., 1.56,

1992., 83., 1.29,

1992., 97., 1.37,

1992., 114., 0.83

\*DSSAT: FILET LNAD/10.

\*-- Parameter to set forcing of observed NFLV values during simulation

NFLV\_FRC = 0 ! No forcing

\*NFLV\_FRC = 2 ! Forcing