Food and Agriculture Organization of the United Nations

Crop Module 3
Creating crop files

Jorge Alvar-Beltrán

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Content

Day 1

- How do crop models work?
- AquaCrop interface
- AquaCrop: climate and crop modules (AquaCrop modules 1 and 2)

Day 2

- AquaCrop: management and soil modules (AquaCrop modules 3 and 4)
- Run simulations and interpret outputs

Days 2-3

- Input requirements
- Create/import climatic files on AquaCrop

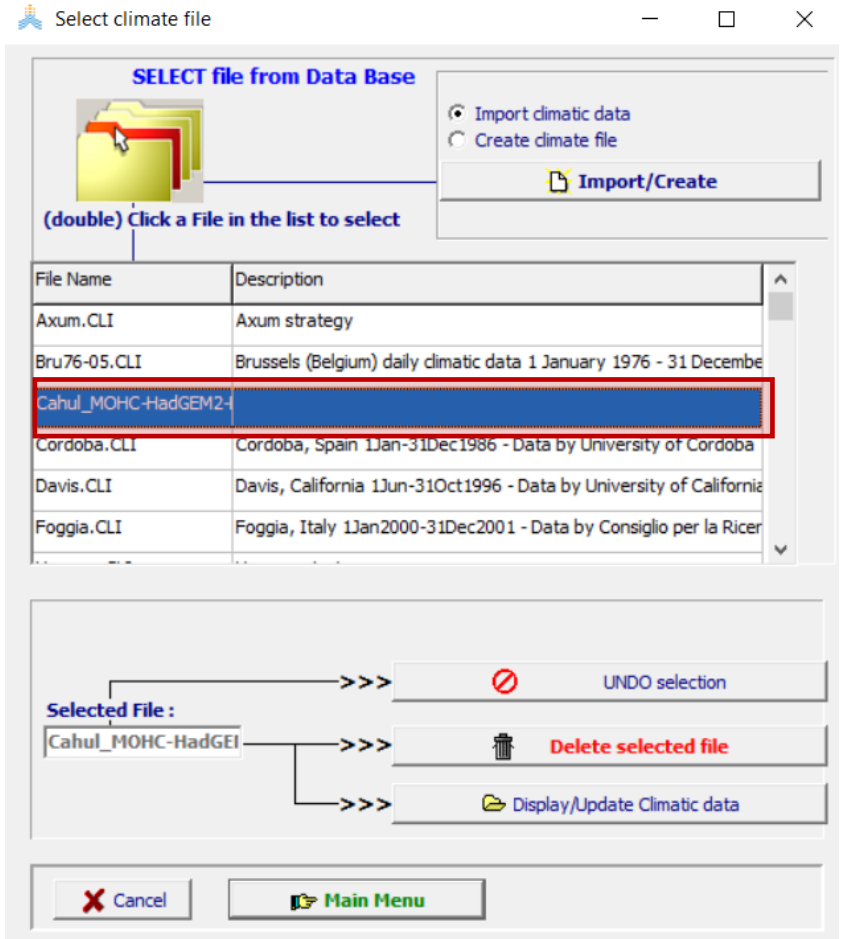
Day 3

- Create a crop file
- Run simulations for maize in Moldova (Cahul)

Create a crop file: maize

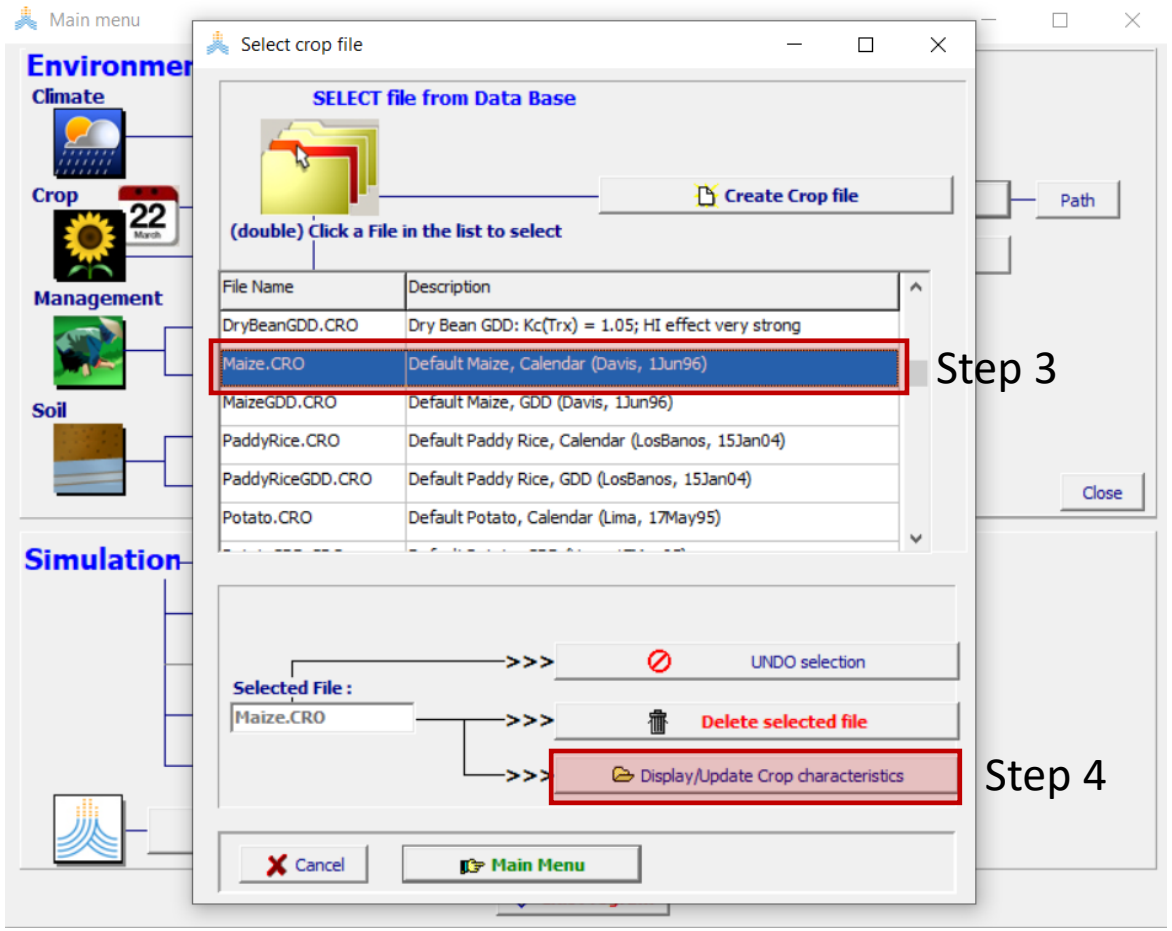
Step 1. Open **AquaCrop**

Step 2. Open the climatic file **Cahul_MOHC-HadGEM2-ES_rcp26**



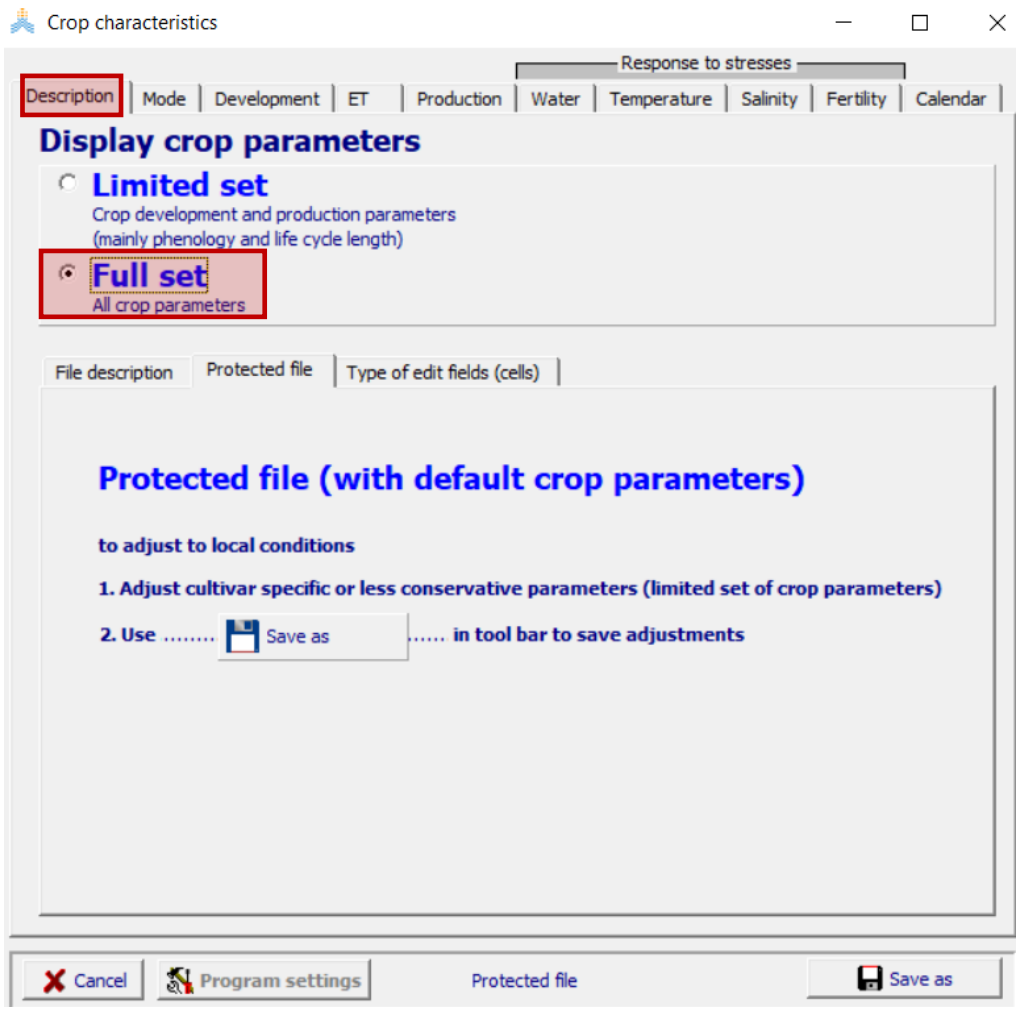
Step 3. Open the default file **Maize.CRO**

Step 4. Click on **Display/Update Crop Characteristics**

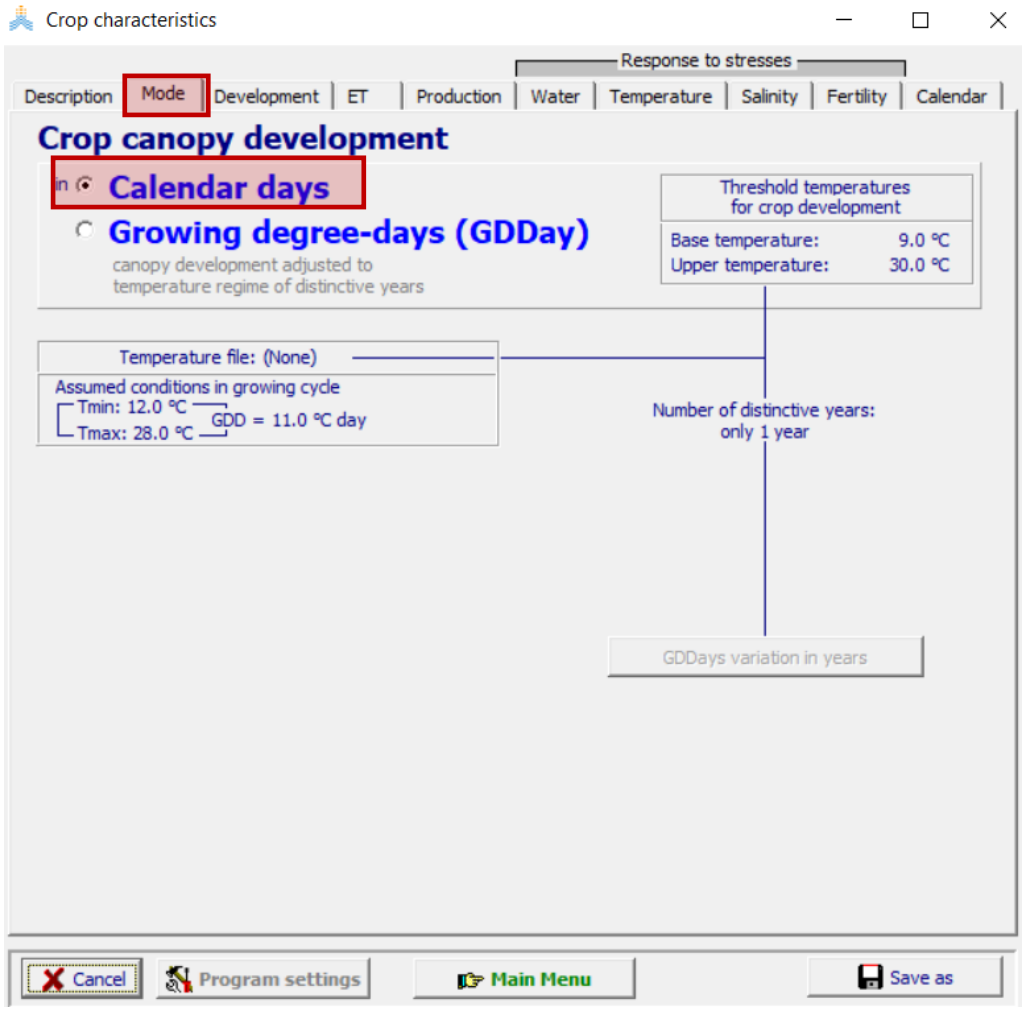


Create a crop file: maize

Step 1. Click on **Description** and select **Full Set**

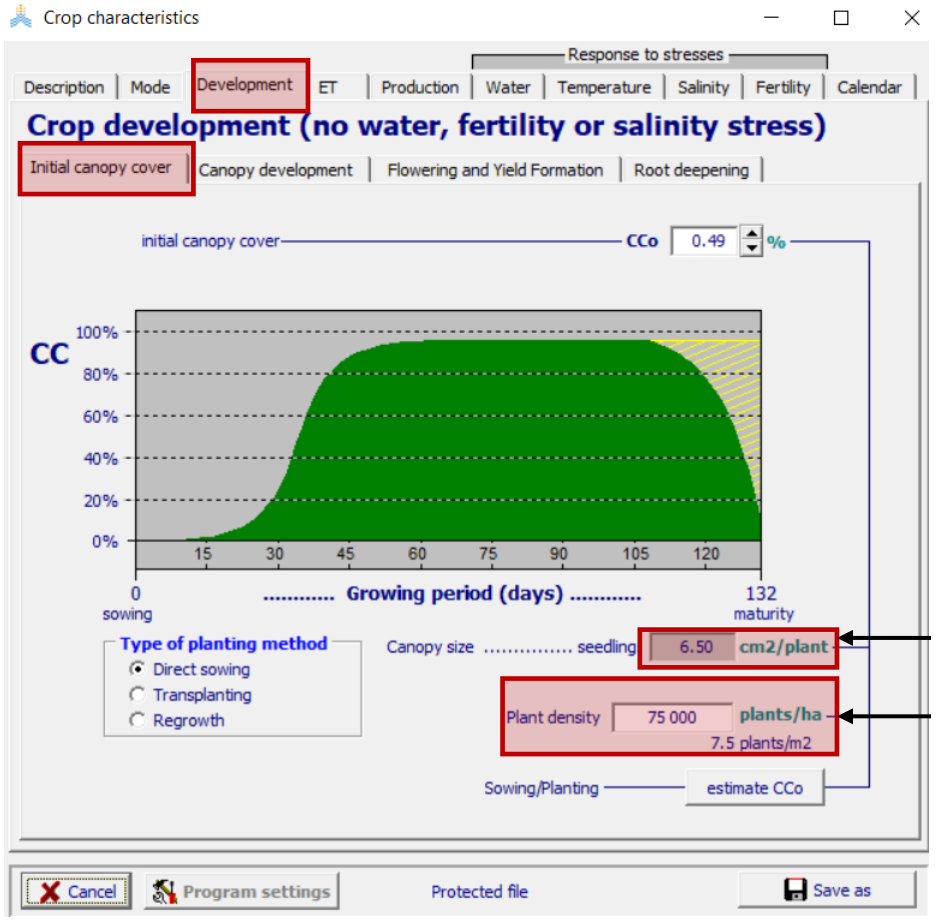


Step 2. Click on **Mode** and select **Calendar days**



Create a crop file: development

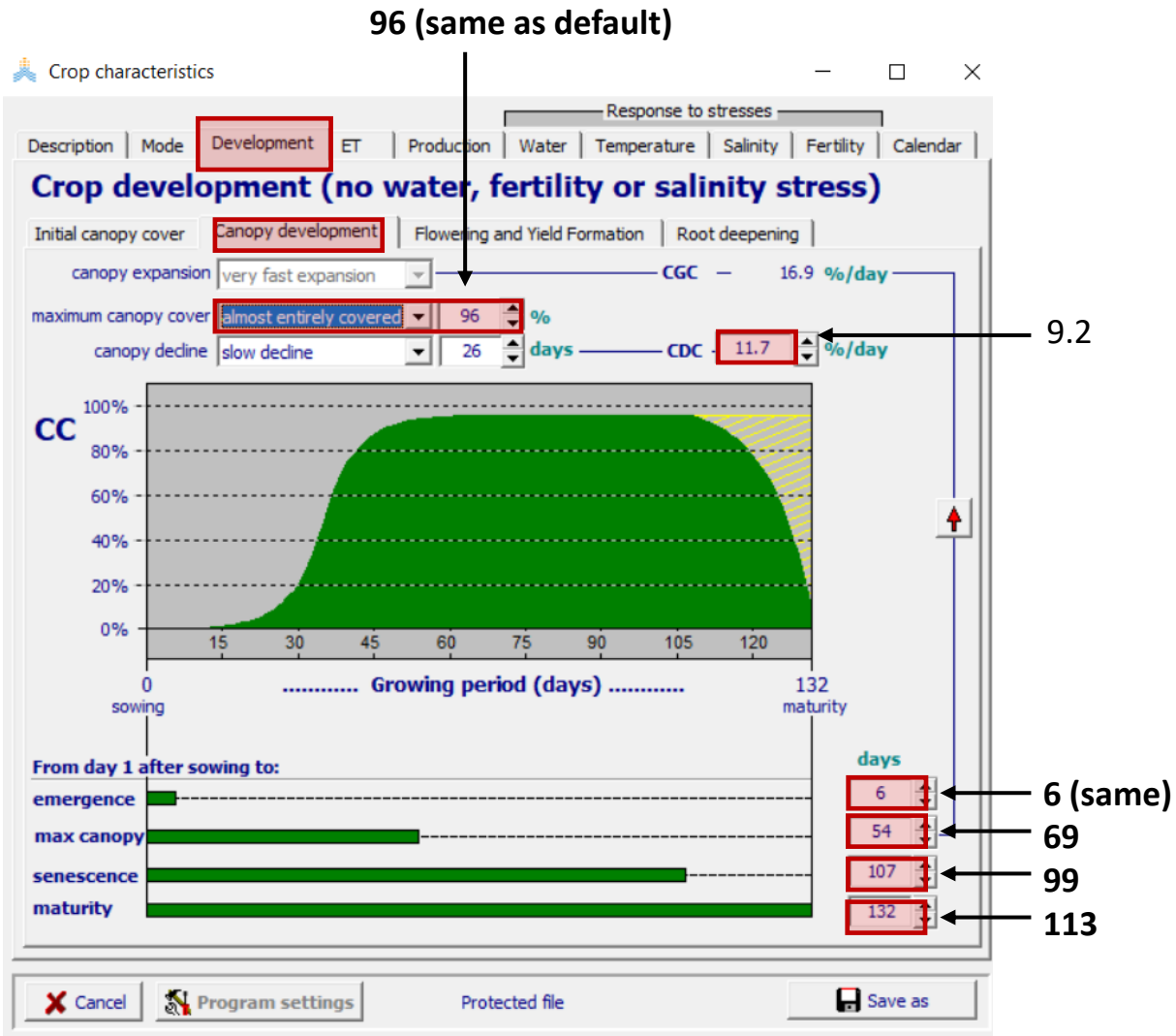
Step 1. Click on **Development** and modify the following **Initial canopy cover** parameters:



6.5 (same)

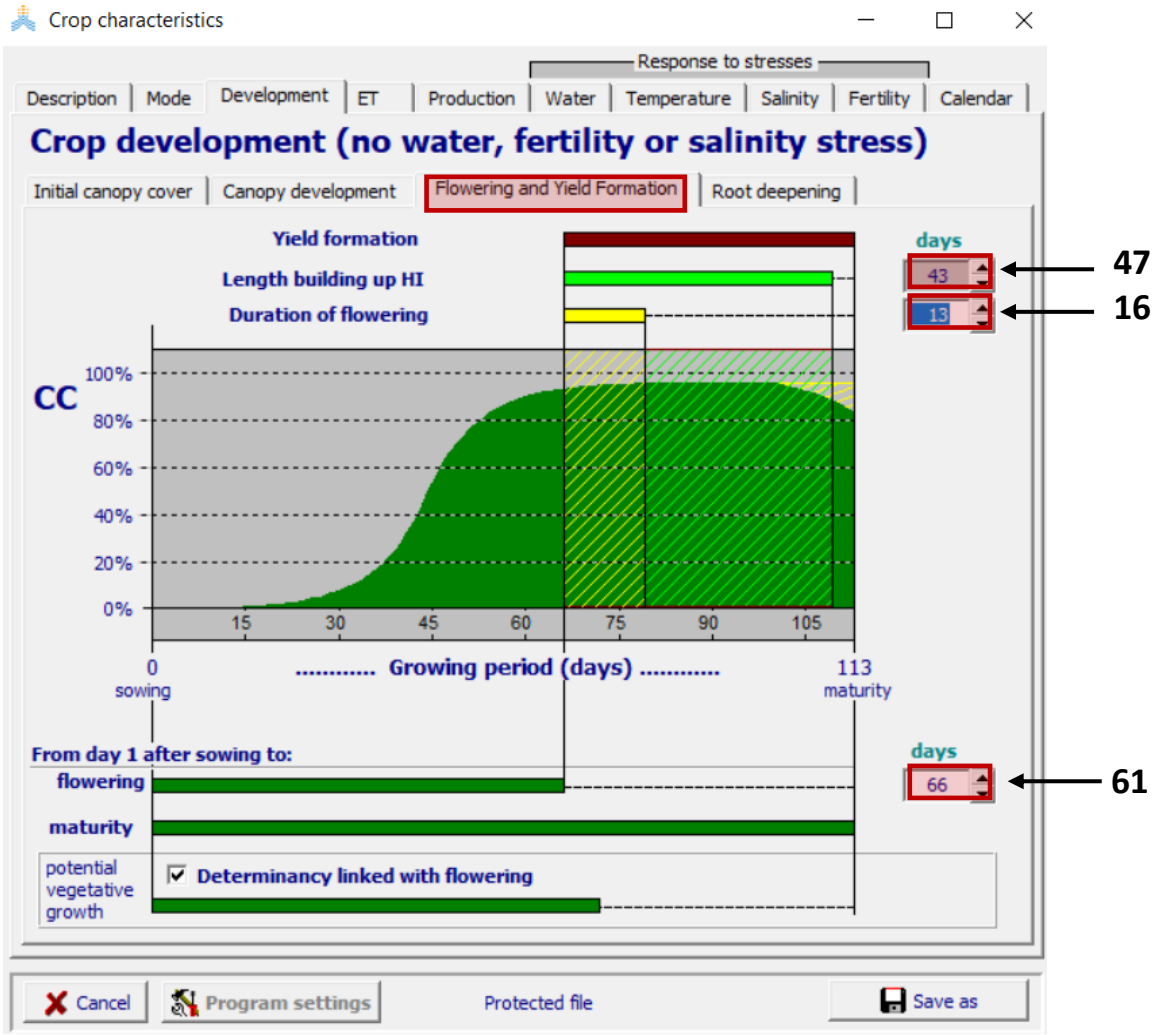
55,000

Step 2. Click on **Canopy Development** and modify the following parameters:



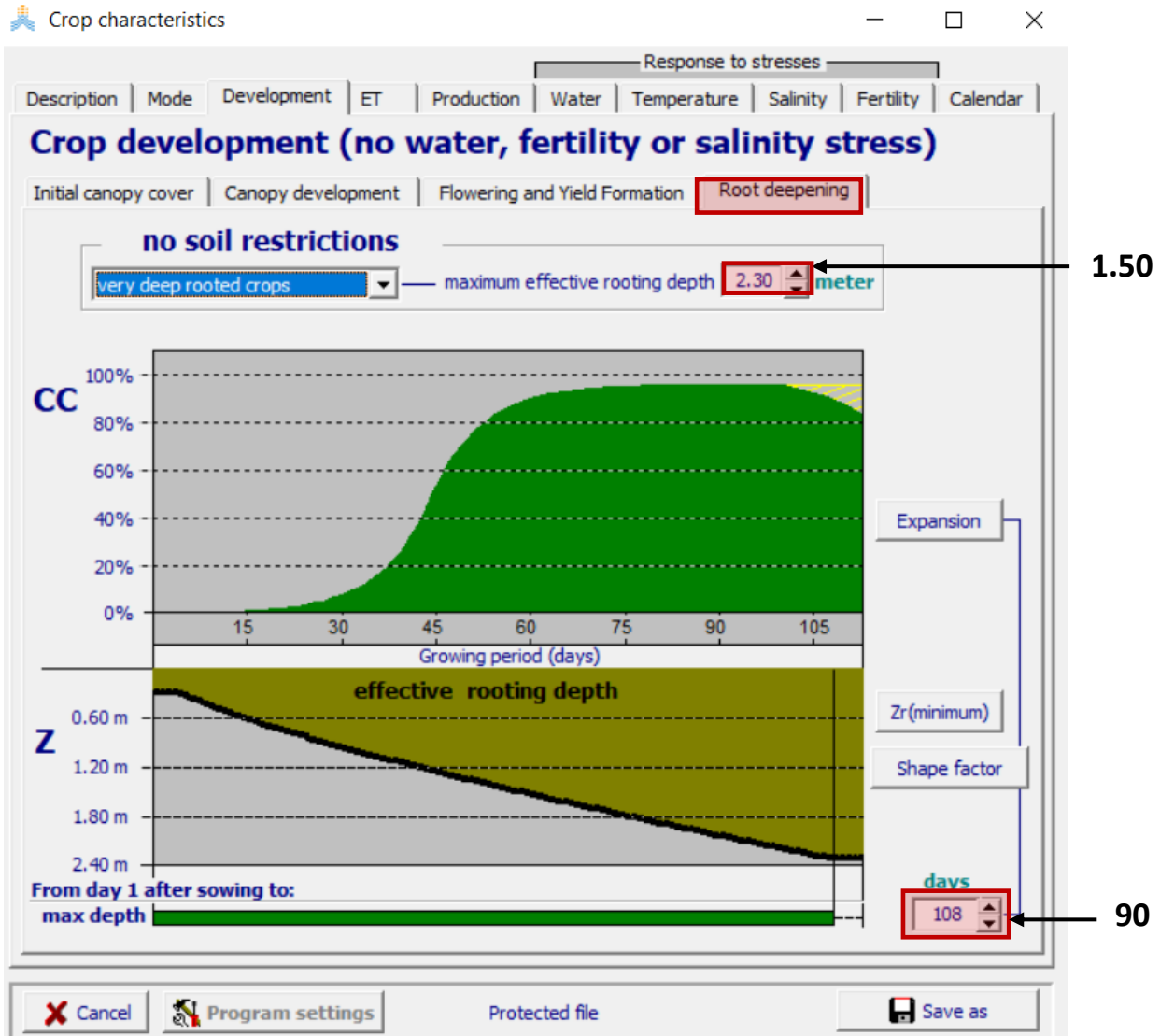
Create a crop file: flowering & yield formation

Step 1. Click on **Flowering and Yield Formation** and modify the following parameters:



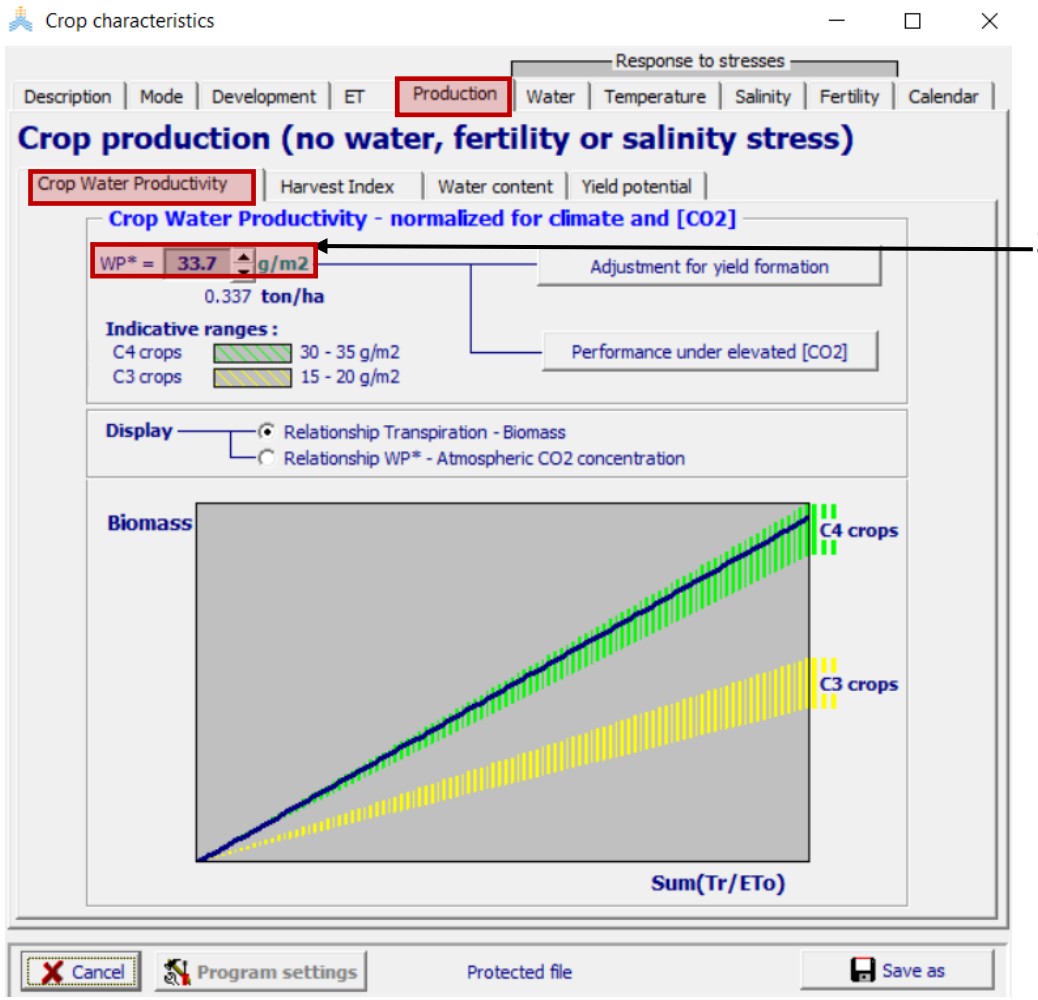
Create a crop file: root deepening

Step 1. Click on **Root Deepening** and modify the following parameters:



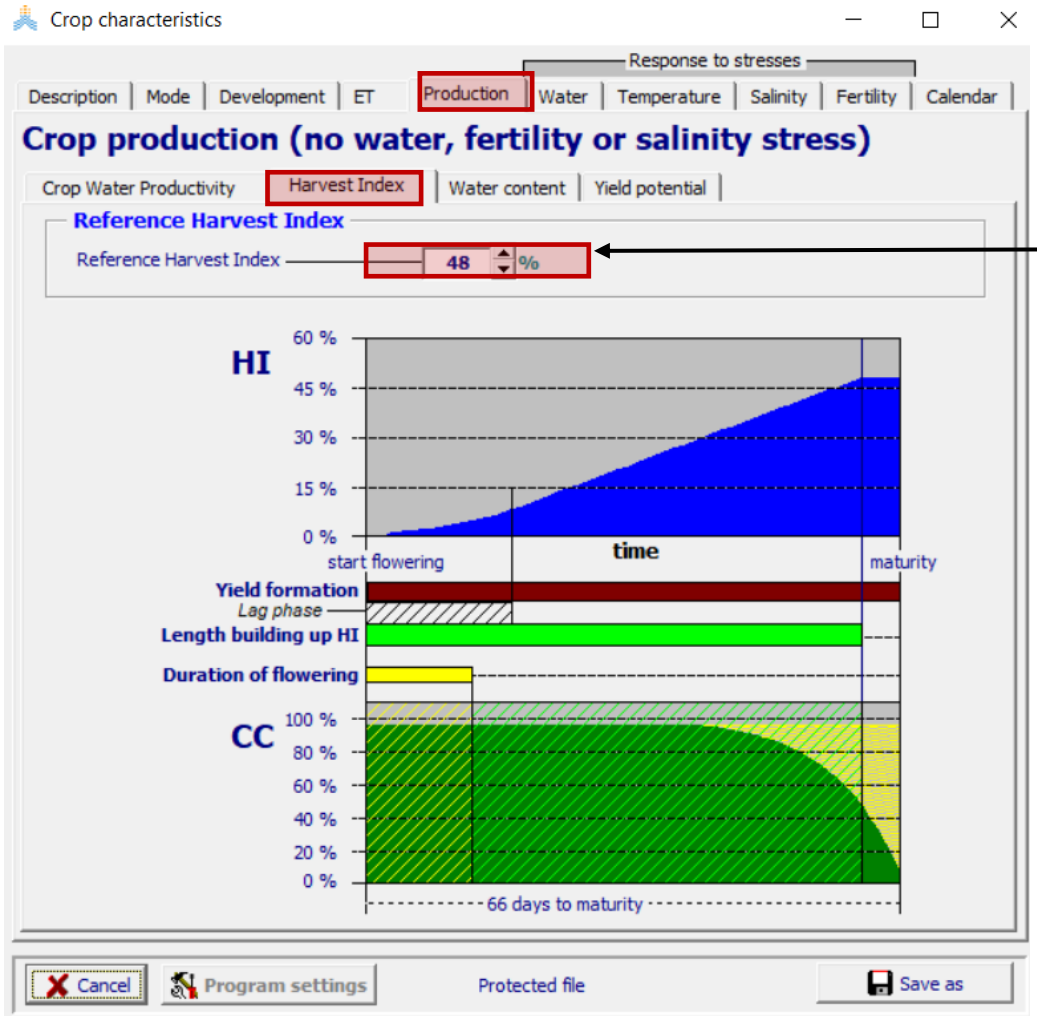
Create a crop file: production

Step 1. Click on **Production** and modify the following **Crop Water Productivity** parameters:



33.0

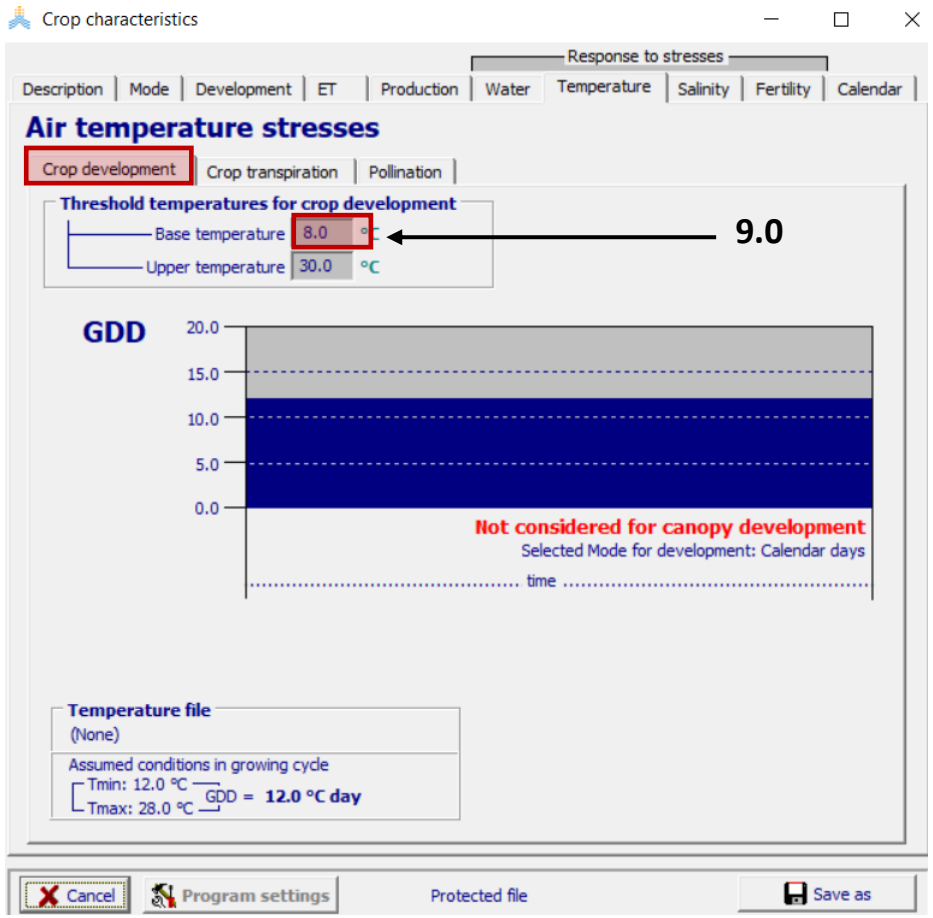
Step 2. Click on **Harvest Index** and modify the following **Reference Harvest Index** parameters:



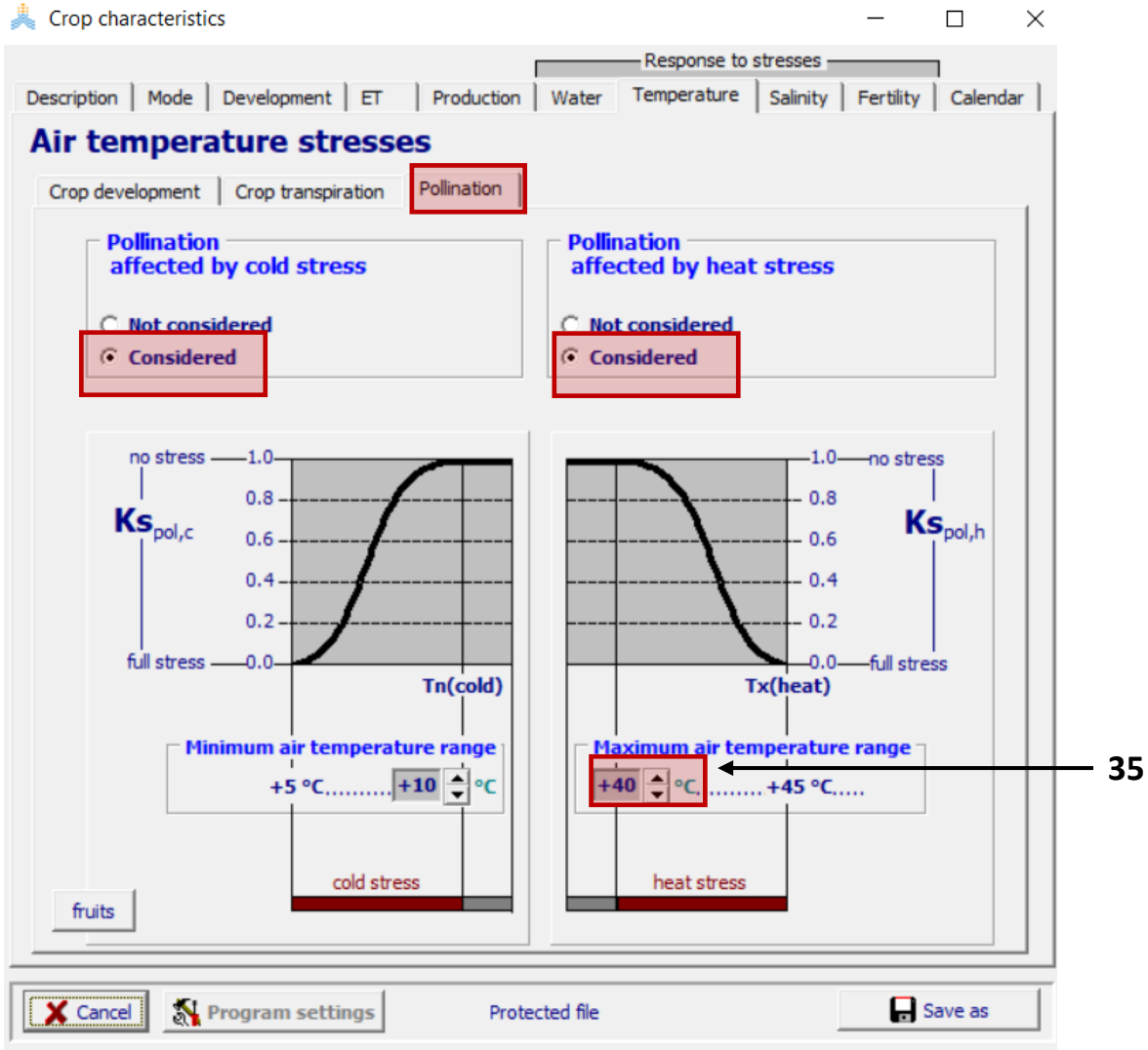
40.0

Create a crop file: air temperature stresses

Step 1. Click on **Crop Development** and modify the following **Base temperature** parameters:

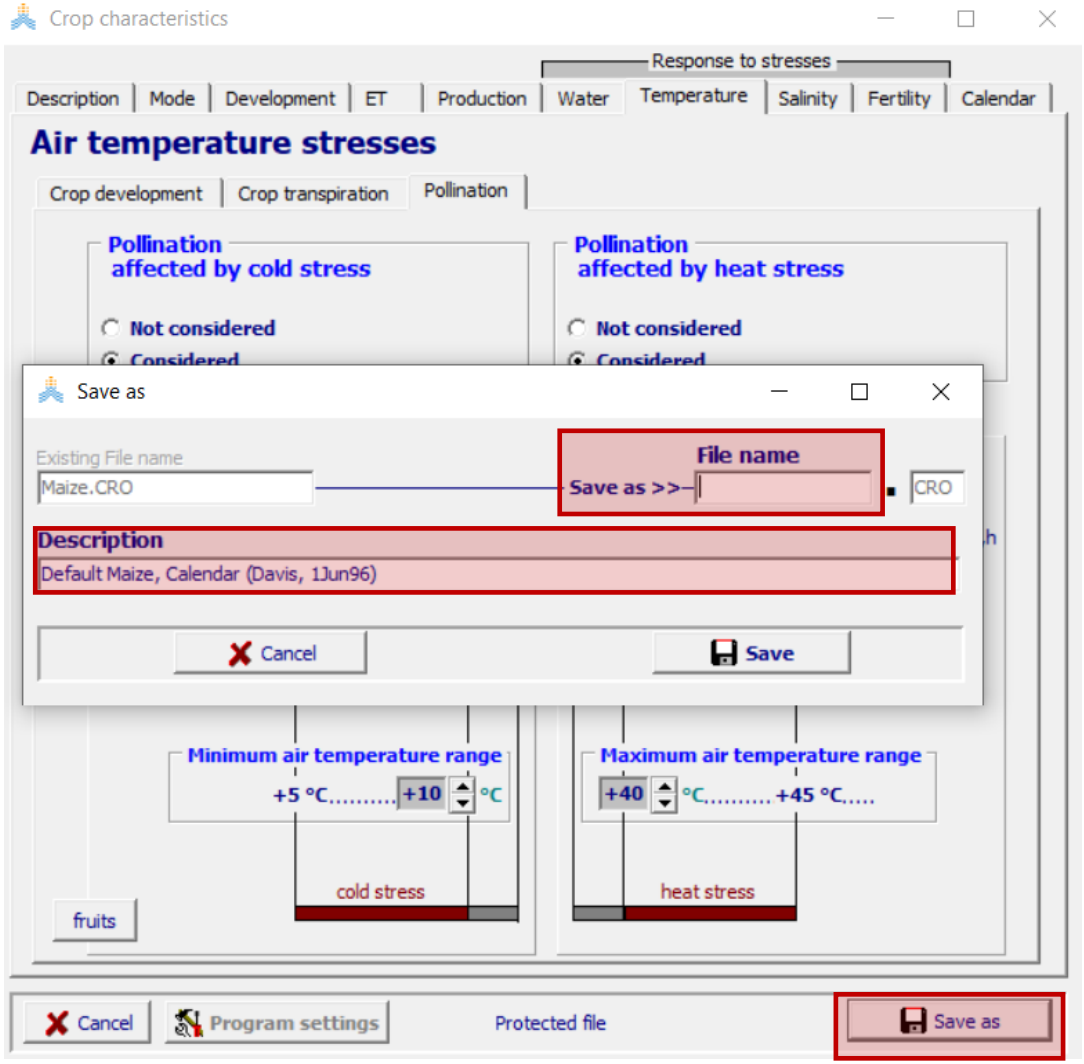


Step 2. Click on **Pollination**, select **consider** (both for cold/heat-stress) and modify **Max. air temp. range**



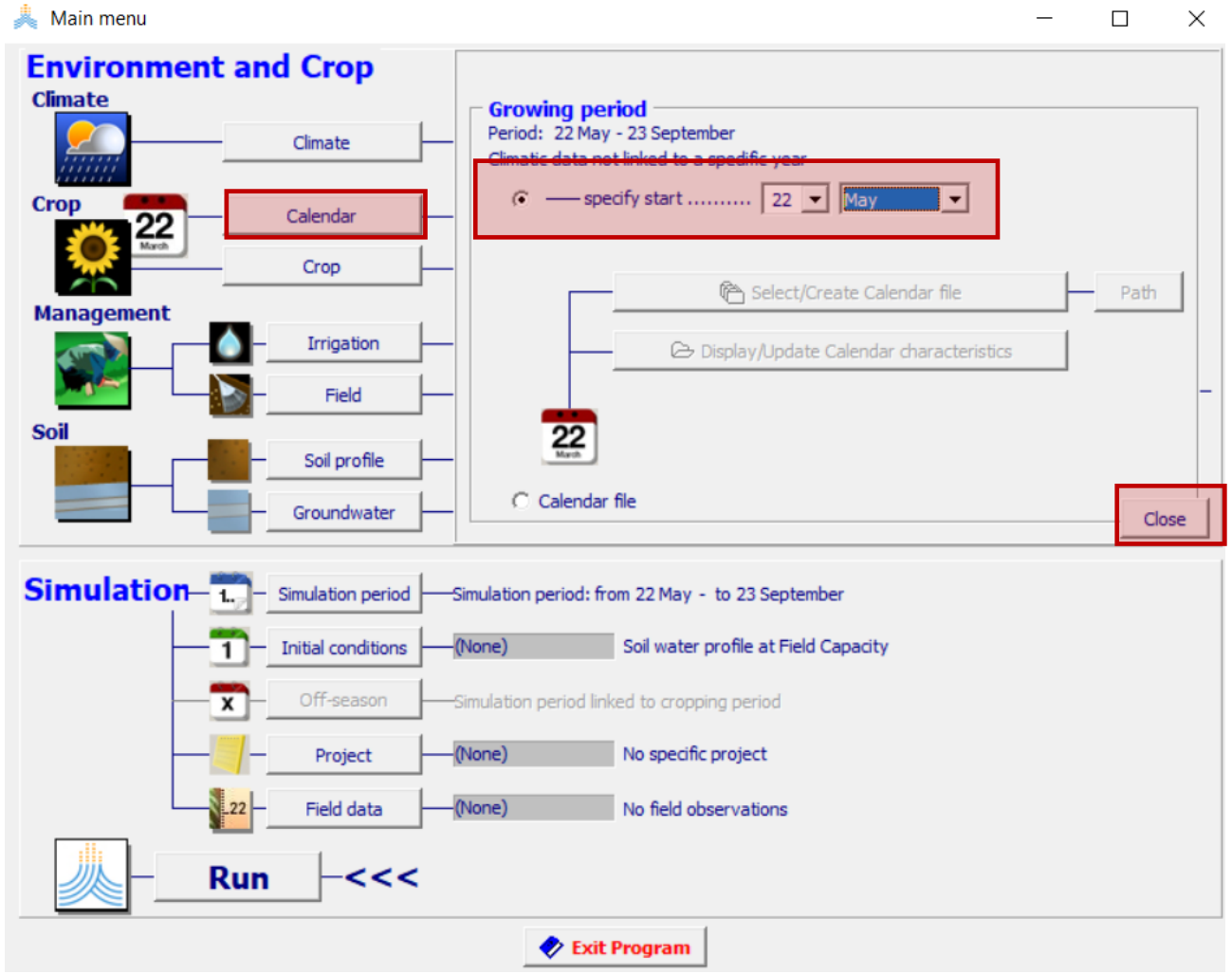
Save the crop file

Step 1. Click on **Save as** (bottom of the screen) and enter the following **File name "Maize-short"** and in **Description "Maize-Cahul"**



Crop Calendar: sowing date

Step 1. Click on **Calendar**, specify the sowing date "**22nd May**" and click on **Close**



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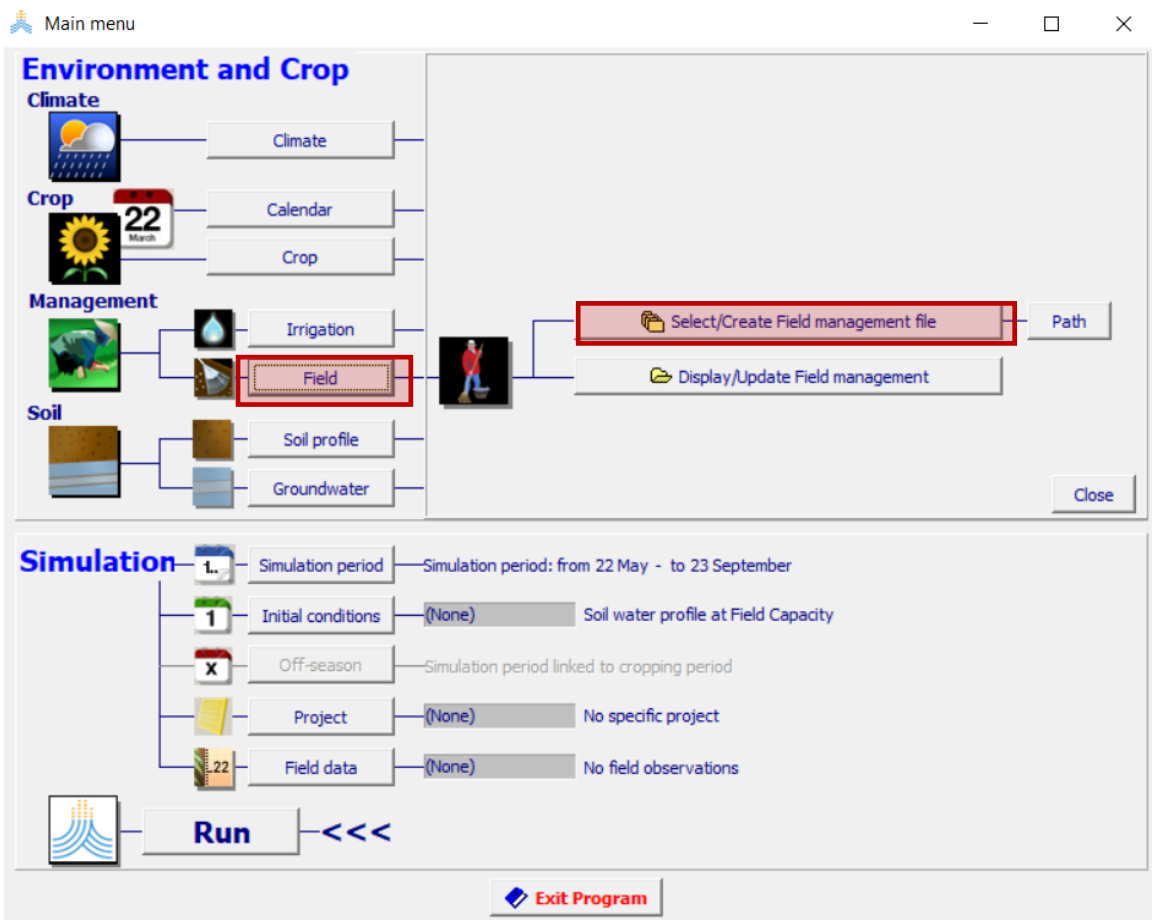
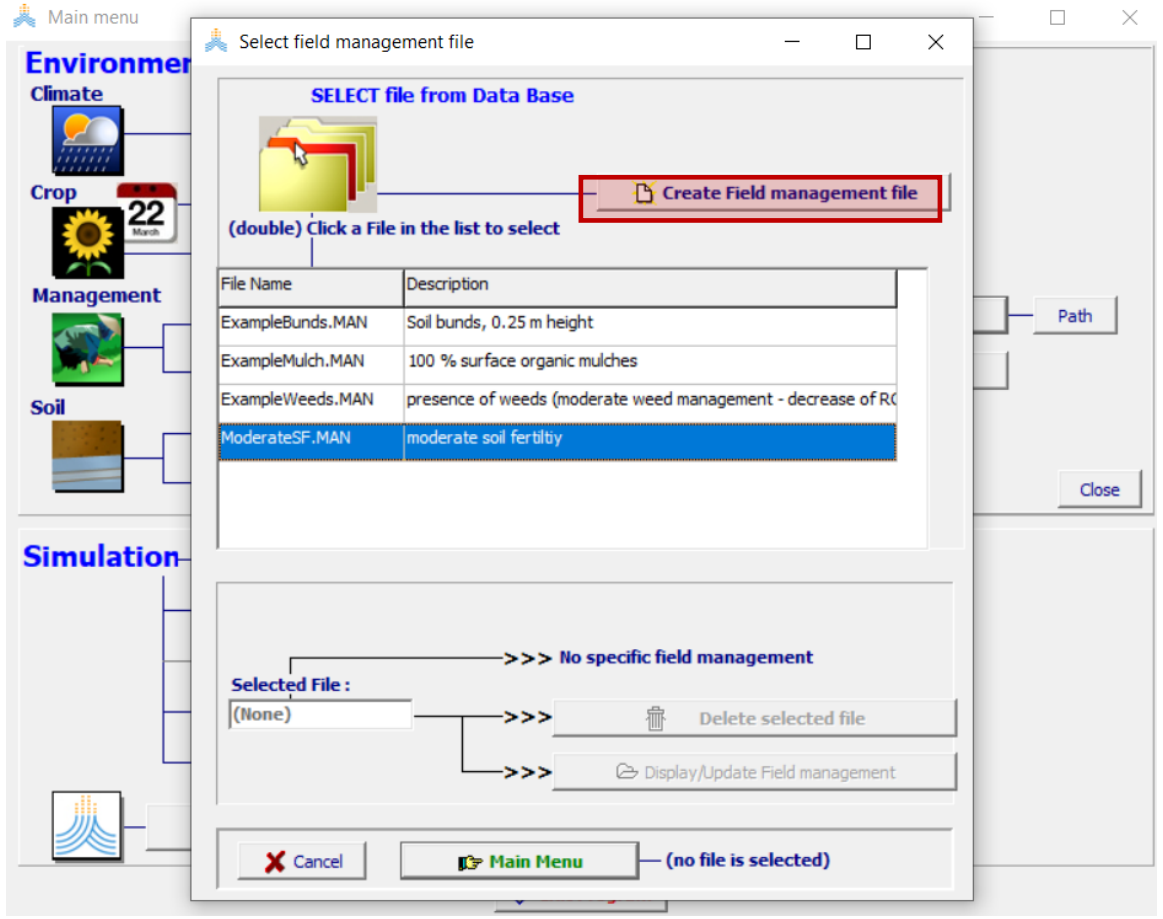
Create a Field management file

Step 1. Click on **Field** and then **Select/Create Field Management file**

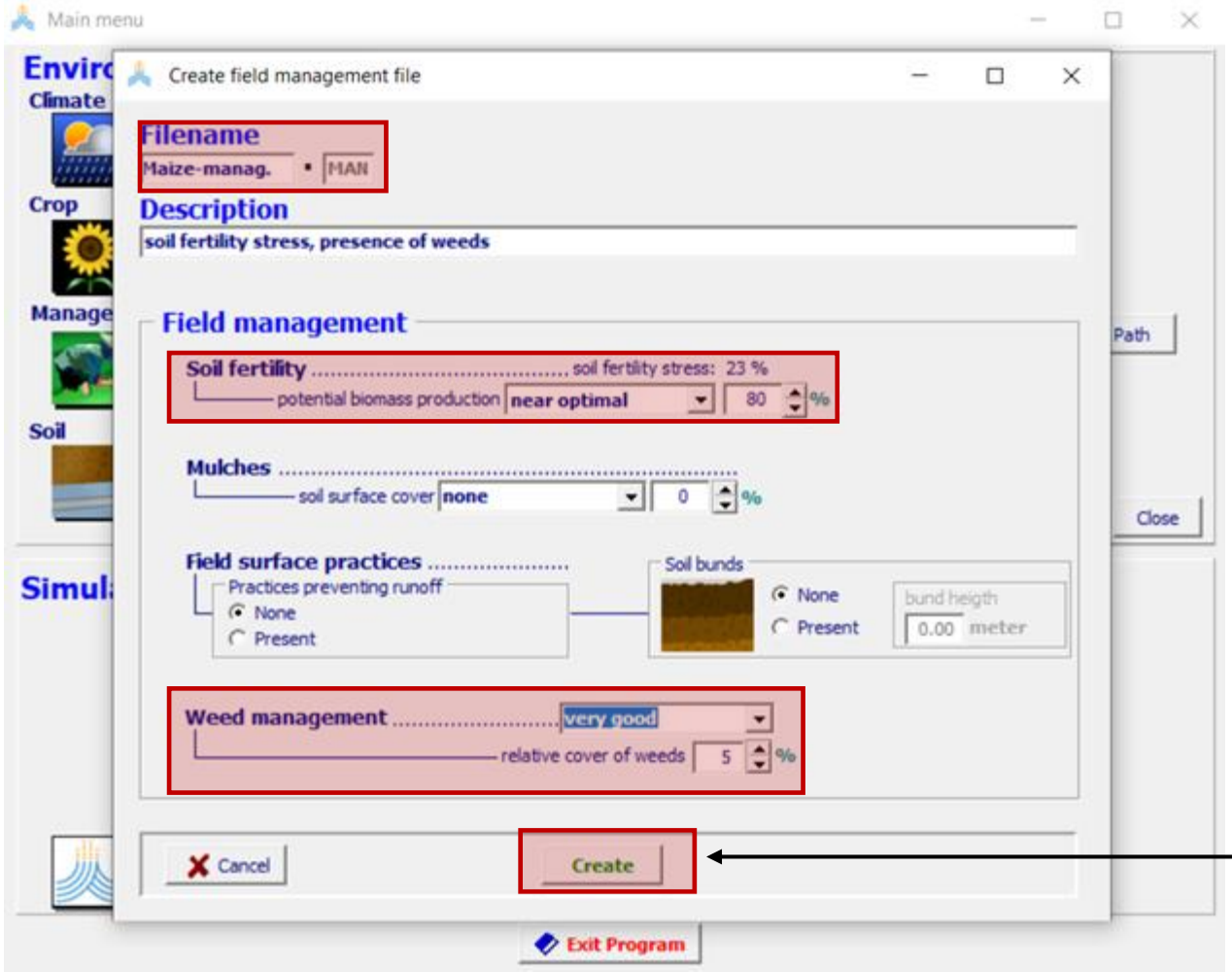


Step 2. Click on **Create Field Management file**



Create a field management file

Step 1. Name the file **"Maize-manag."** and change the **soil fertility conditions** to **"near optimal (80%)"** and **weed management** to **"very good (5%)"**



Step 2. Click on **Create**

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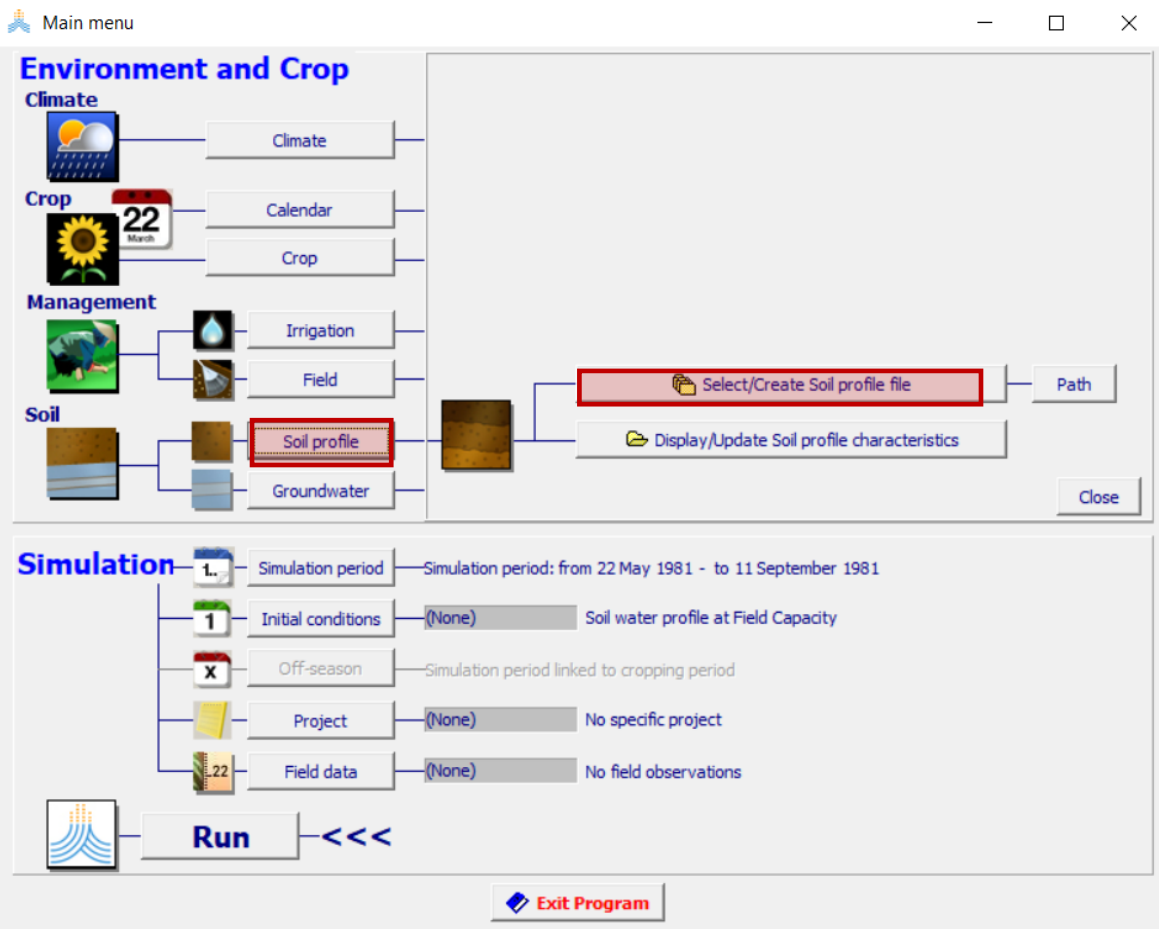
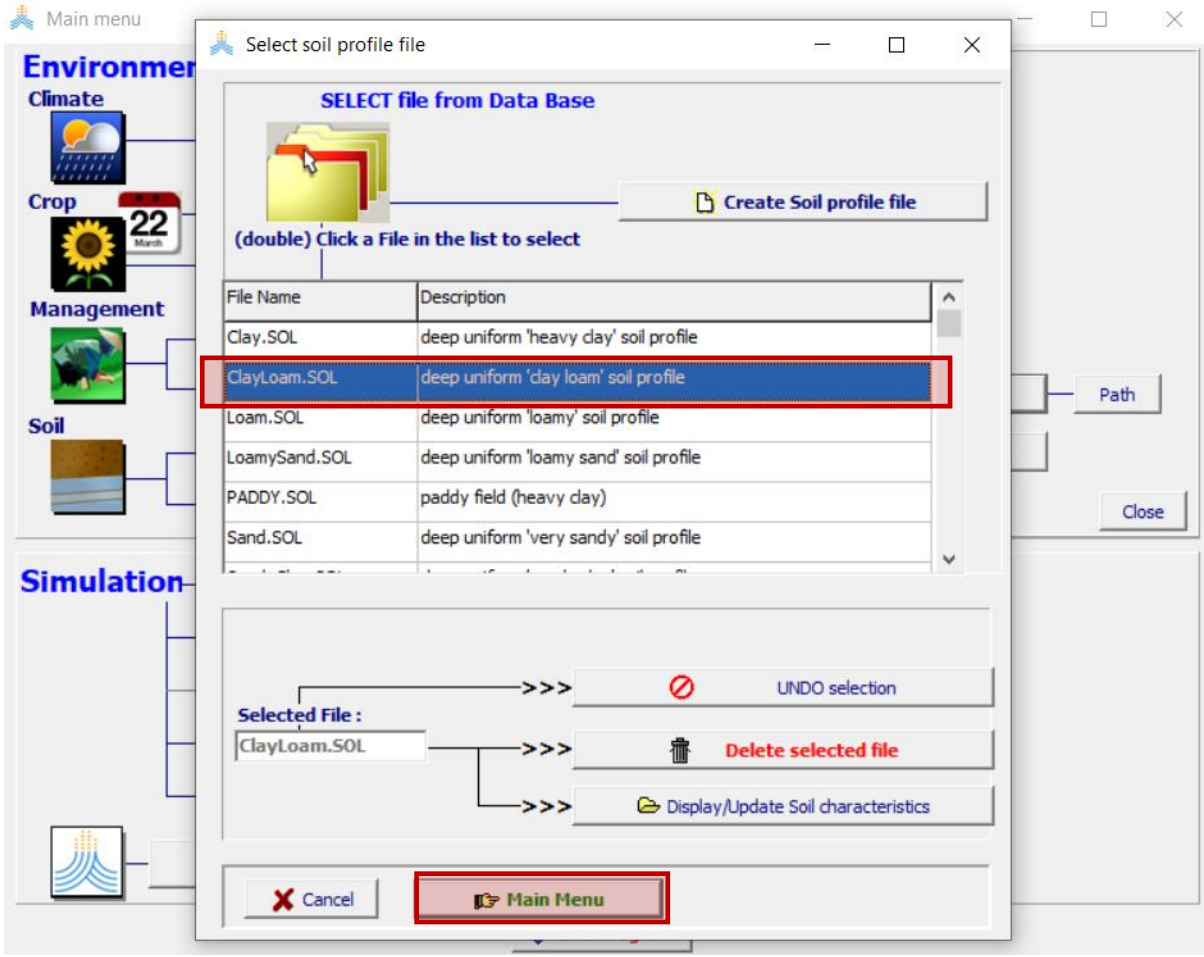
Soil: upload a soil file for Cahul

Step 1. Click on **Soil profile** and on **Select/Create Soil profile**

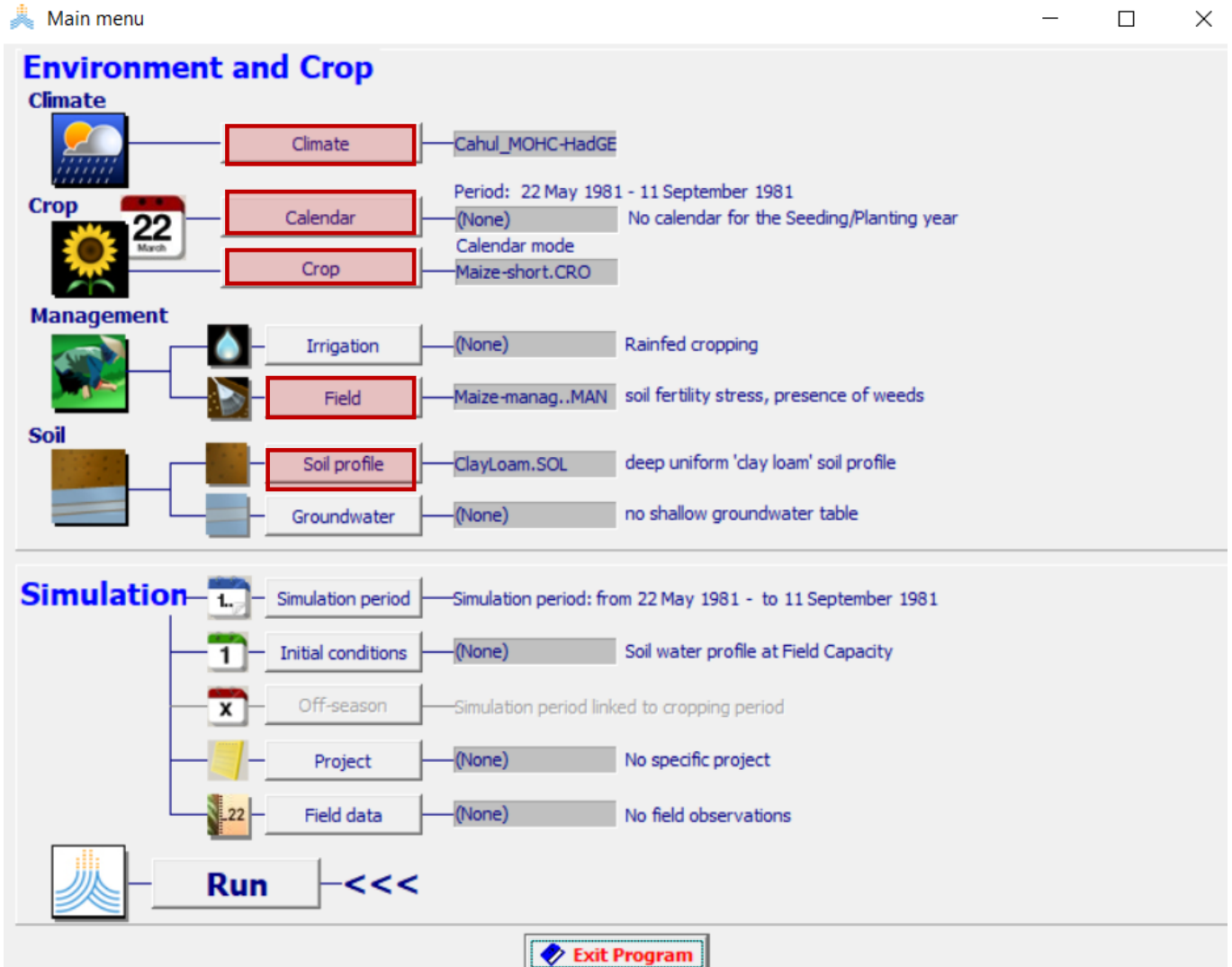


Step 2. Click on **Clay-Loam** and on **Main Menu**



Status: progress made so far

We now have a climatic file (Cahul), a calendar date (22nd May), a crop file (maize), field management file (close to optimal conditions) and soil profile file (clay-loam)!



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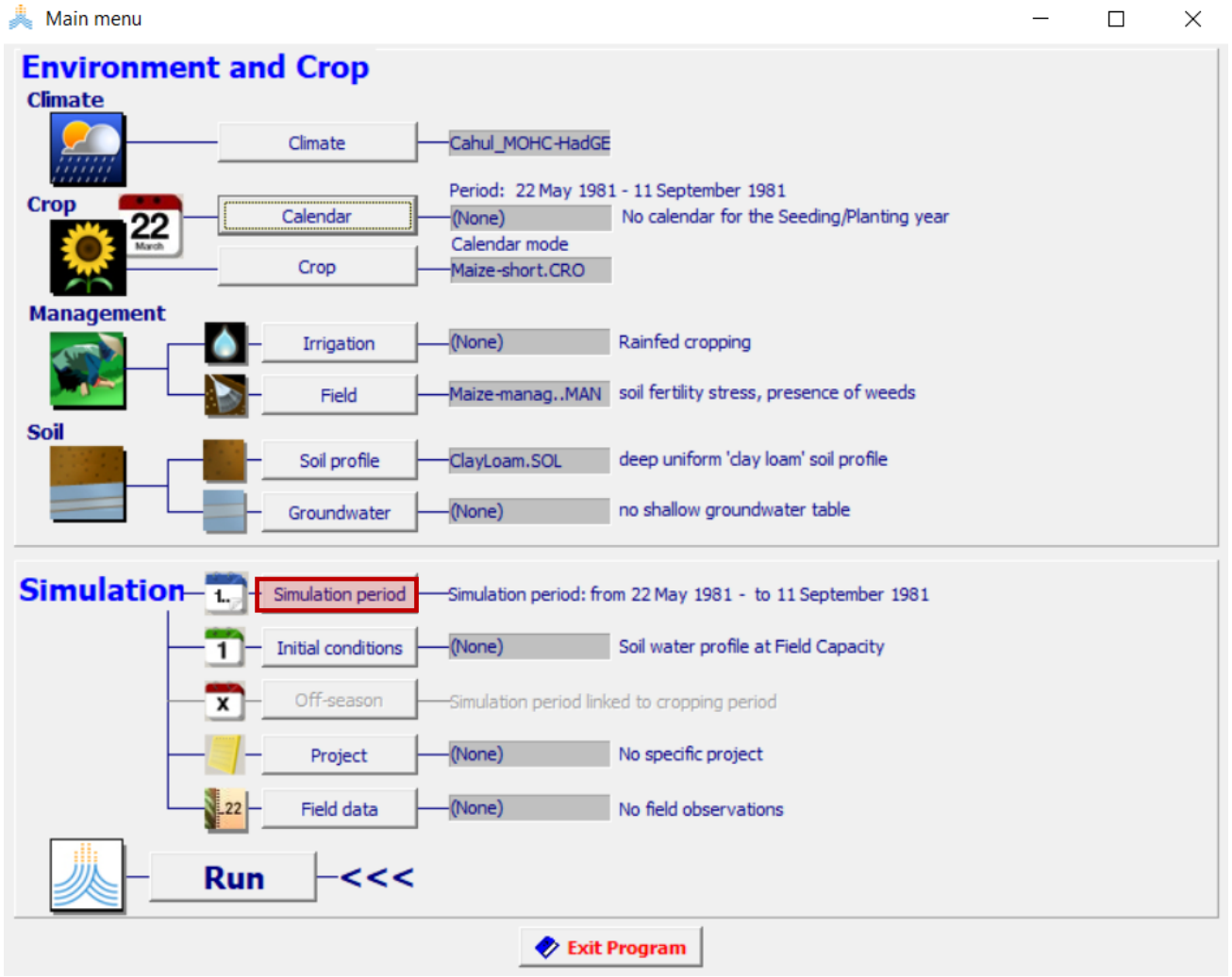
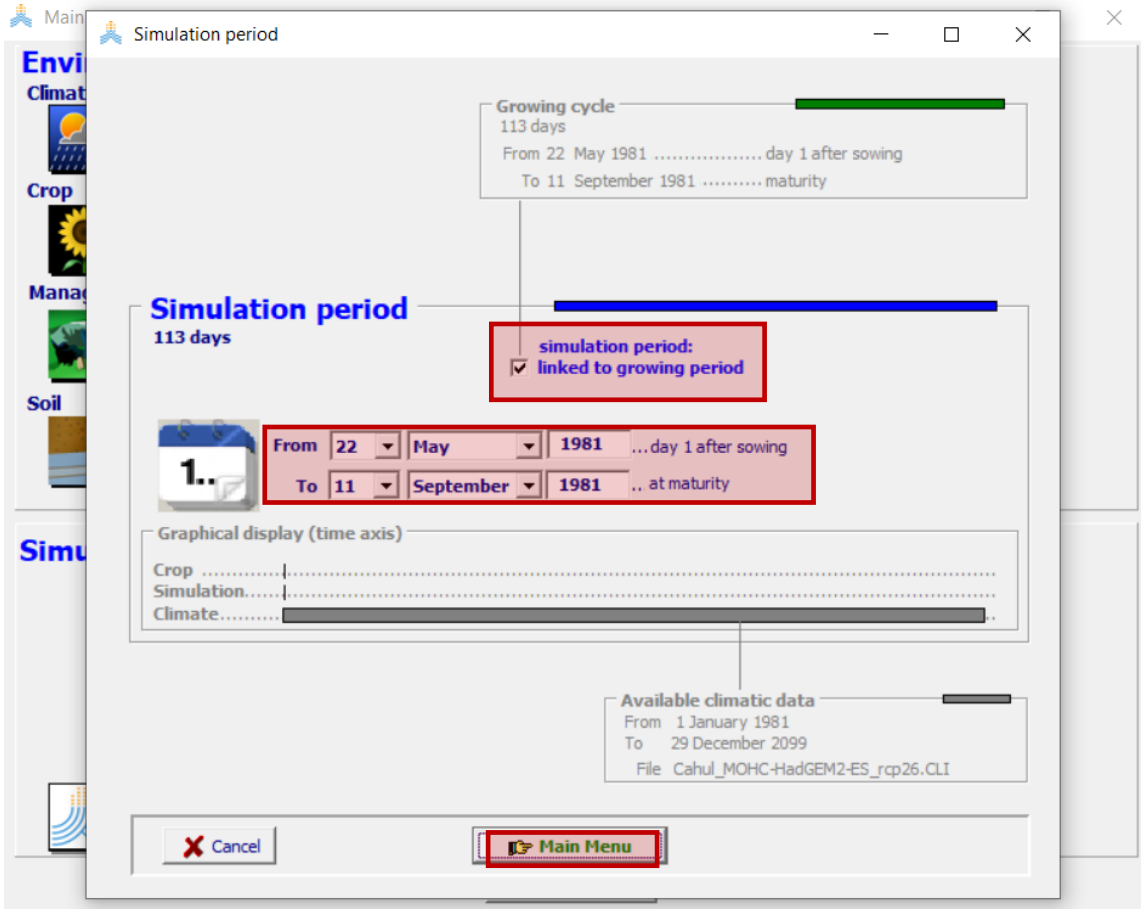
Select a simulation period

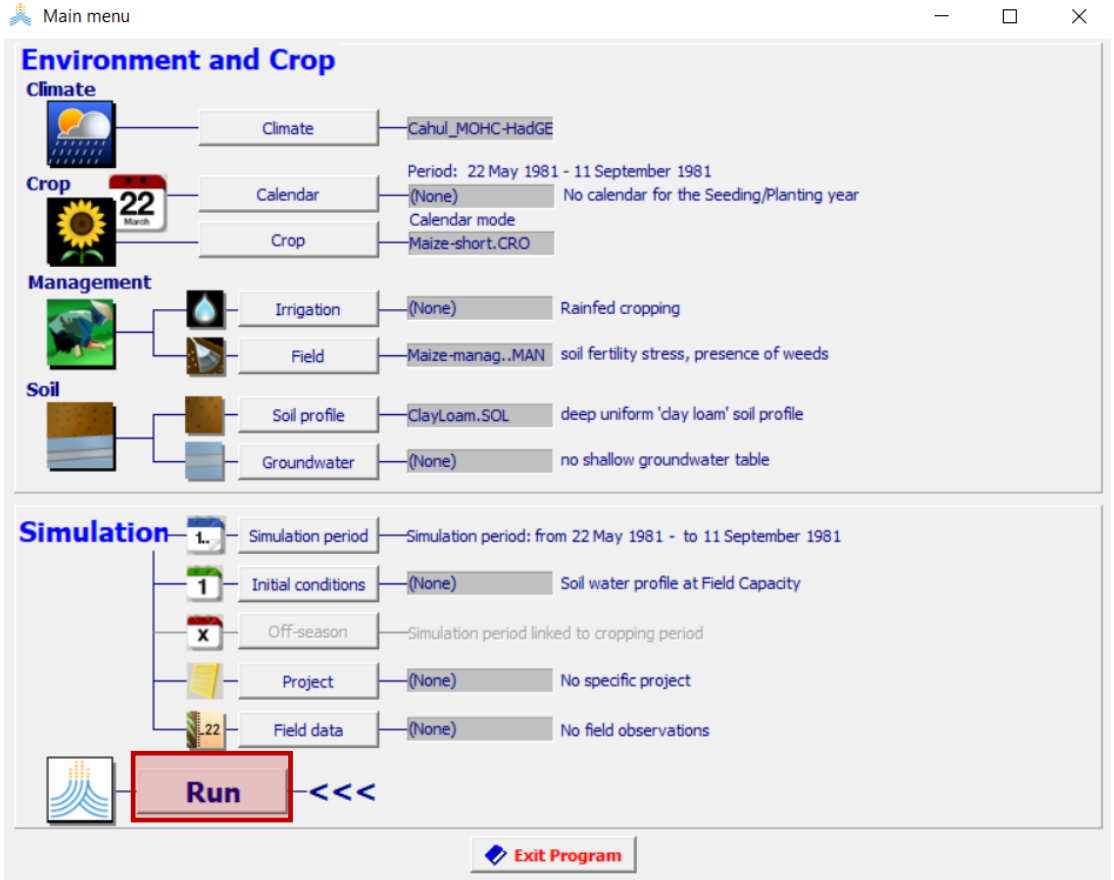
Step 1. Click on **Simulation period** and double check that the simulation period is **linked to the growing period**, then click on **Main Menu**

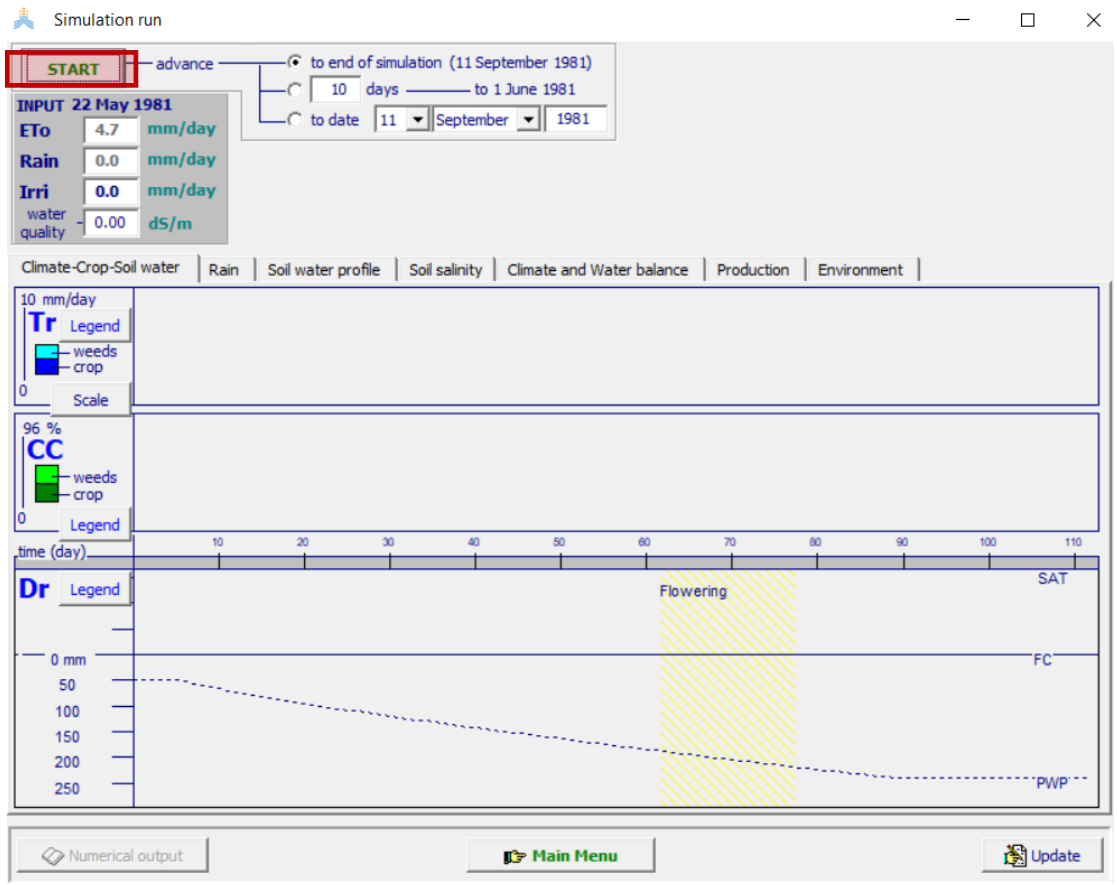




Run the Simulations

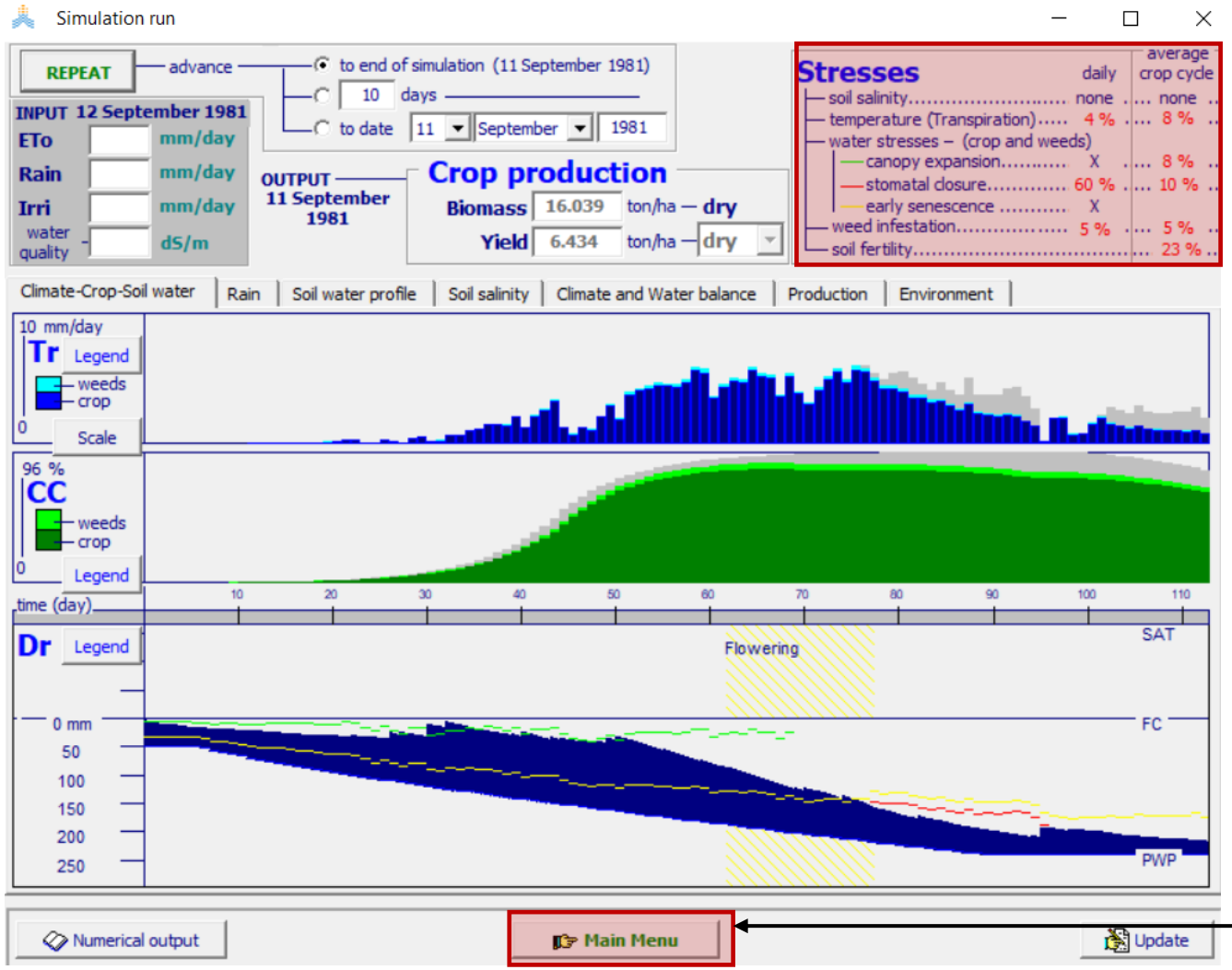
Step 1. Click on **Run** and then click on **START**





Results visualization

In this section, we will look at the yield results emerging for Cahul in 1981, particularly water and temperature stresses



Step 1. Click on **Main Menu** to save the results

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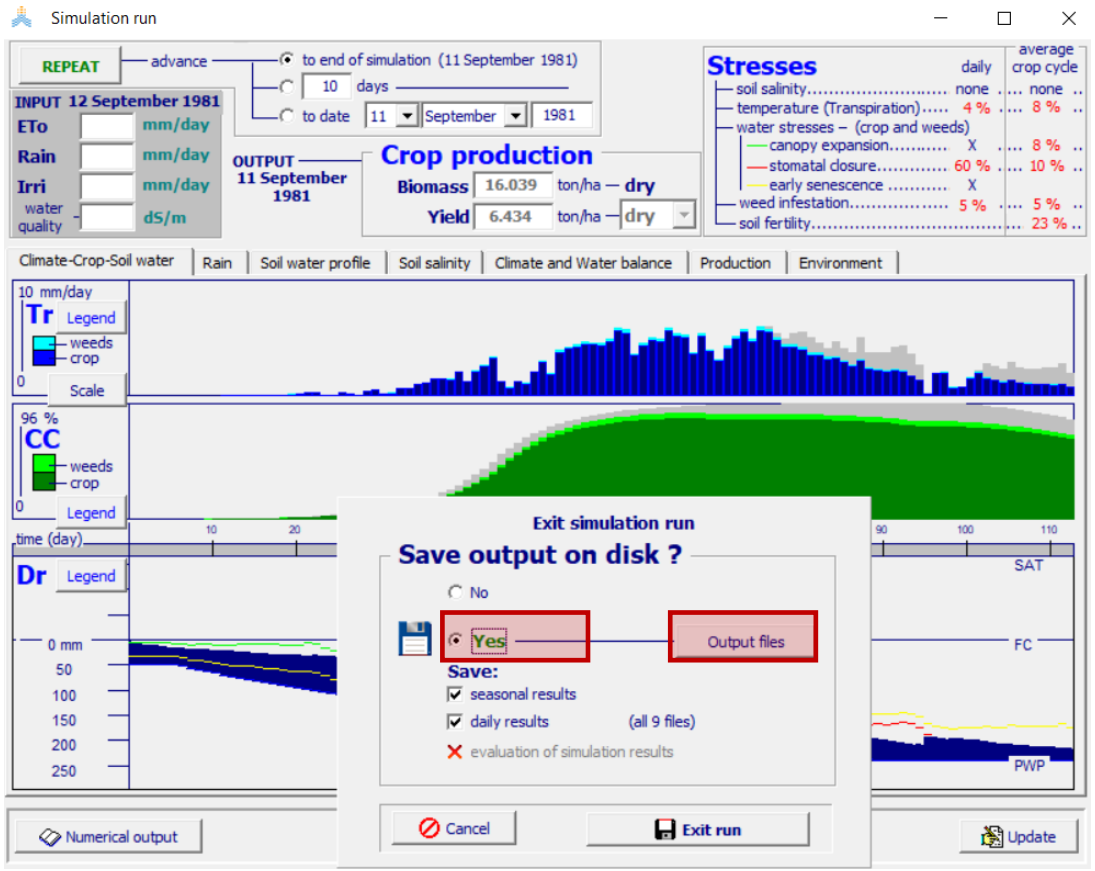
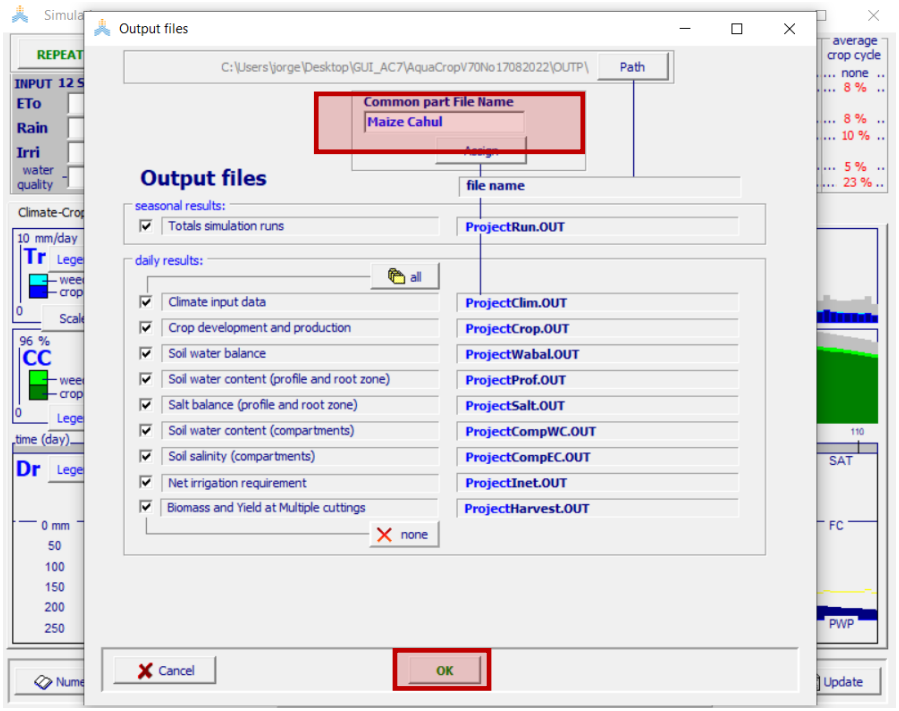
Save the simulation results

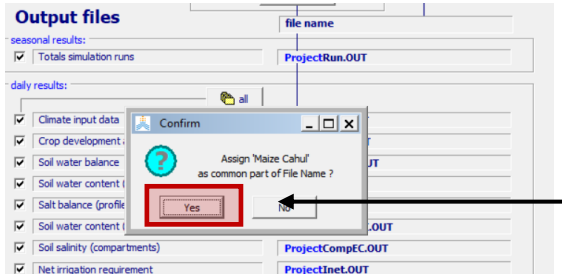
Step 1. Click on **Yes** (make sure that seasonal and daily results are ticked).

Step 2. Click on **Output files**



Step 3. Under **Common part File Name** save the file as **"Maize Cahul"** (make sure that all the output files are ticked) and then click on **OK**





Step 4. Click on **Yes**

Thank you!

Contact details:
jorge.alvarbeltran@fao.org
riccardo.soldan@fao.org