

Crop file tuning for local conditions

**D**

**Environment**

Location	Cordoba, Spain	
Climate	Daily data	1 Jan – 31 Dec 1986
Crop	Maize cultivar:	B749.
	Planting date:	April, 20 1986
	Planting density:	Distance of 0.50m between the lines, and 0.25m along the line.
	Max rooting depth:	1.80m
Field data	Field observations from a field in Cordoba, Spain planted with maize (cv B749), and cultivated <u>under non limiting conditions (no water stress, no fertility stress)</u> :	
	Senescence:	Leaves starting yellowing 90 days after sowing
	Maturity:	20 days after beginning senescence
	Flowering:	60 days after sowing
Soil	Loam	
Management	Rainfed agriculture, Full fertility	



**Steps**

The objective of the exercise is to estimate how much grain a maize field would produce during a specific season. The maize field is located in Cordoba, Spain, for which the climate data are first required. In order to account for the specific management practices, the general maize file needs to be modified to reflect the specific sowing date and the planting density. To simulate the specific maize cultivar, the phenology of the cultivar observed in the field under no stress conditions (no water stress, no fertility stress) are needed to modify the general maize file.

- Select climate file.
- Select the default AquaCrop maize input file (called “Maize.CRO”).
- Modify the value of crop parameters on the base of field observations (Tuning of the crop file for local conditions).
- Save the file as “MaizeB749Cordoba.CRO”.
- Select soil file.
- Carry out a simulation and interpret results.

**File produced (Path: C:\..\AquaCrop\DATA)**

MaizeB749Cordoba.CRO



## **CROP FILE TUNING FOR LOCAL CONDITIONS**

**TUNING FOR LOCAL CONDITIONS REFERS TO A CROP**

**UNDER NON LIMITING CONDITIONS (NO WATER STRESS, NO FERTILITY STRESS)**

- 1. When is the planting?**
- 2. What is the plant density [ plants/ha ]?**
- 3. When does the crop germinate [ days ]?**
- 4. What is the maximum canopy cover reached by the crop [ % ]?**
- 5. When does senescence start [ days ]?**
- 6. When is maturity reached [ days ]?**
- 7. When does flowering start [ days ]?**
- 8. How long is the flowering [ days ]?**
- 9. How deep is the effective root system [ m ]?**
- 10. How large is the reference Harvest Index [%]?**