Alberta Irrigation Management Model (AIMM)

Website: http://agriculture.alberta.ca/acis/imcin/aimm.jsp

Factsheet

General description of the tool

Category	Outcome-based
Objective	To assist irrigation producers with their irrigation scheduling decisions (simulates the growing conditions and crop water use for 52 different crops)
Geographical	Alberta
Functionalities	Provide information on crop water requirements and irrigation timing
Target audience	Farmers
Developers	Alberta Agriculture and Forestry - latest update: 2015
Format	Software to download
Cost (tool and data)	Free
Past or current users	unknown

Commodities covered

Barley, canola, dry bean, fodder corn, hay-grass, potato, wheat

BMPs covered

None

Indicators covered

Water use

Data inputs

Data requirements	Primary data required	Default values
Environmental conditions	Field size, meteorological information, soil information, root zone depth, allowable soil moisture depletion, soil moisture sampling	- Climate information (weather, rainfall)
Crop management	Type of crop, type, planting date	No
Carbon sequestration/storage	n/a	No
Livestock	n/a	No
Energy use	n/a	No
Primary processing	n/a	No
Water	- Capacity and operation schedule of irrigation system - Daily irrigation amounts	Irrigation application efficiency
Transport	n/a	No
Others	n/a	No

Scope ☑ Farm level ☐ Supply chain

Ease of use for the data collector: Some parts will be easy, but other will require some research. There are a lot of entries to be filled by the producer and it will thus be time consuming.

Modelling methods

Consistency of the model with the goal and scope of the tool	Consistent - Allows the prediction of crop water requirements and irrigation timing in addition to keeping a record of fertilization, chemical use, seeding rate, crop yields, pumps and pumping information, irrigation application and rainfall
Transparency and quality of documentation	Guidance document: Yes - Guidance document available online http://www.imcin.net/aimm-help.pdf Methodology document: A summary document is available online: http://www.imcin.net/aimm_tech_doc.pdf
Conformity of the methodology with the current state-of-the-art agronomic and environment sciences	Consistent - Uses the American Society of Civil Engineers (ASCE) standardized evaporatranspiration equation for calculating reference evapotranspiration

Methodology	Uses the American Society of Civil Engineers (ASCE) standardized evaporatranspiration equation for calculating reference evapotranspiration and the reference evapotranspiration was calculated using the Penman Montieth procedure as outlined in Food and Agricultural Organization document, FAO 56
Dataset sources used for modelling	Empirical data collected from the IMCIN station installation

Outputs / Results

Results ☑ Detailed summary of results in tables ☑ Detailed summary of results in graphs

Analysis ☑ - Predictive assessment on crop water requirements and irrigation timing for designated near-future time periods
- Record keeping for crop production information such as fertilizer and chemical use, seeding rate, crop yields, pumps and pumping record information, irrigation application and rainfall

Limits of the tool/model

Results are provided for a past year, but the weather can be highly variable between years. For this reason, the results need to be used carefully to make projections.