



Agriculture et  
Agroalimentaire Canada

Agriculture and  
Agri-Food Canada



# AgWeather Quebec

*Weather-based Tools to Support Pest Management  
in a Changing Climate*

René Audet

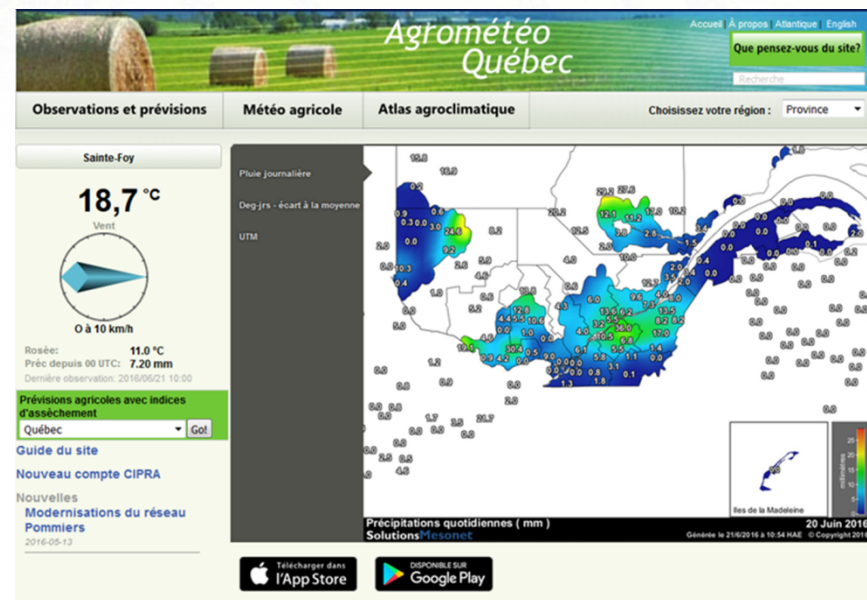
Science and Technology Branch, AAFC

Canada 

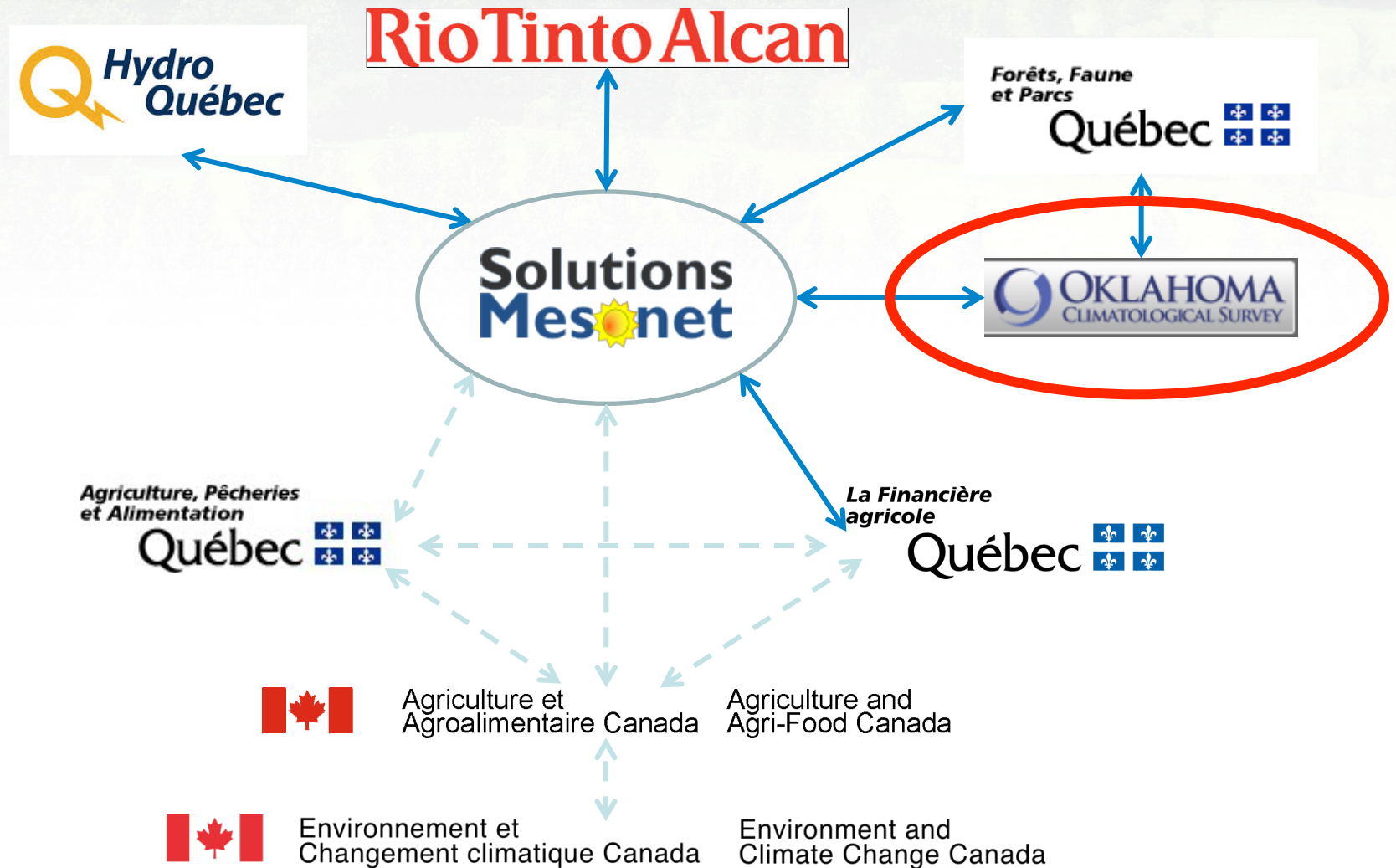
# Brief History and Context

- Launched in 2006
  - Atlantic: 2011
- Objective
  - Improve access to regionally relevant agricultural weather data, information and decision support tools
  - Supports QC Pest Warning Network “RAP”

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# A Collaborative Approach

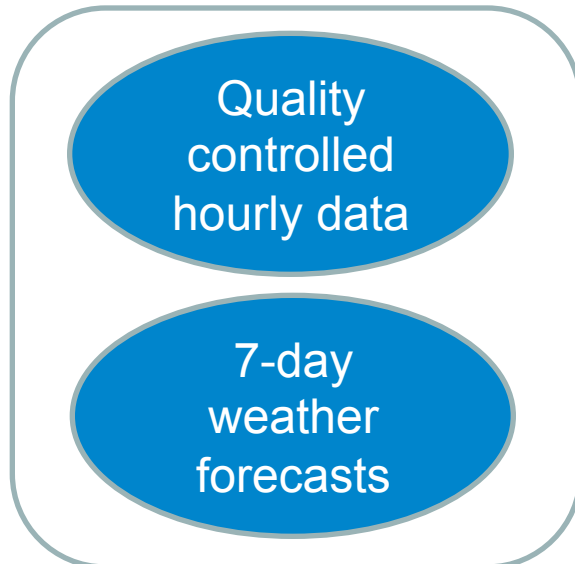
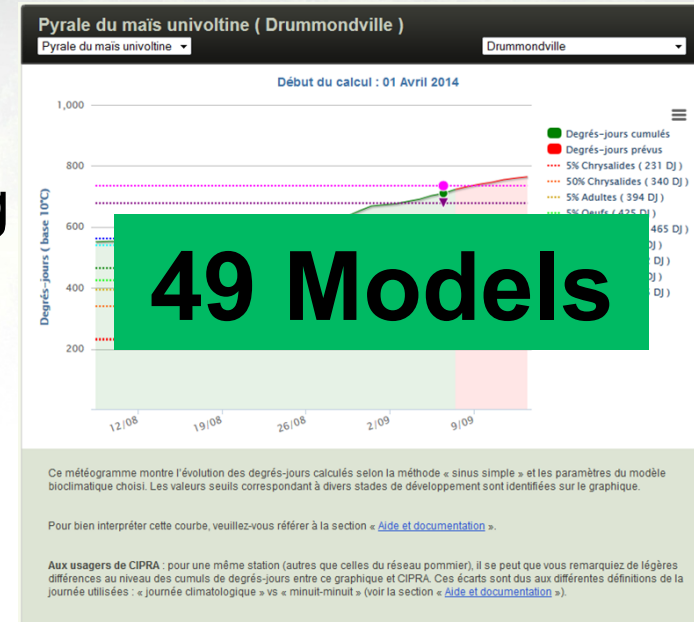


# Support to Decision Making

- For better management of:
  - Farm inputs and resources (pesticides, water, nutrients)
  - Farm operations and marketing
  - Climate risks and variability
  - Agricultural pests

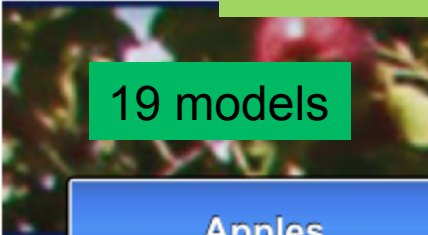
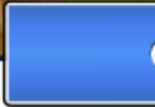
# Pest Management

- Bioclimatic models
  - Pest monitoring and forecasting
  - Better planning of field scouting and timing of treatments
  - Pesticide use optimization

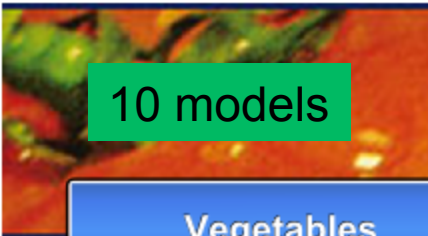


# 49 Bioclimatic Models

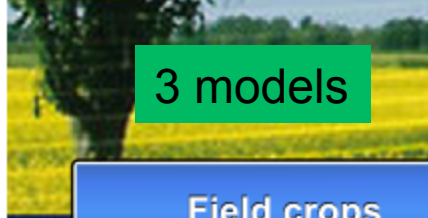
Insects:	37
Crop phenology:	10
Disease:	2
Weeds:	0



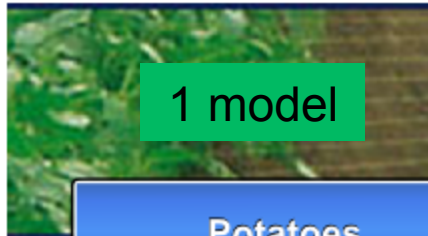
19 models



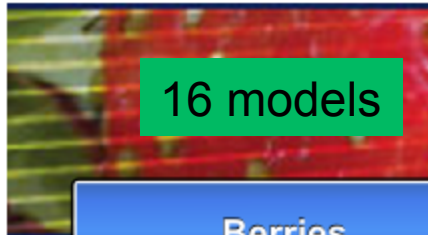
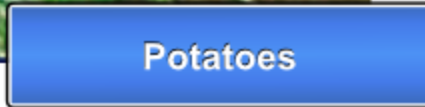
10 models



3 models



1 model



16 models



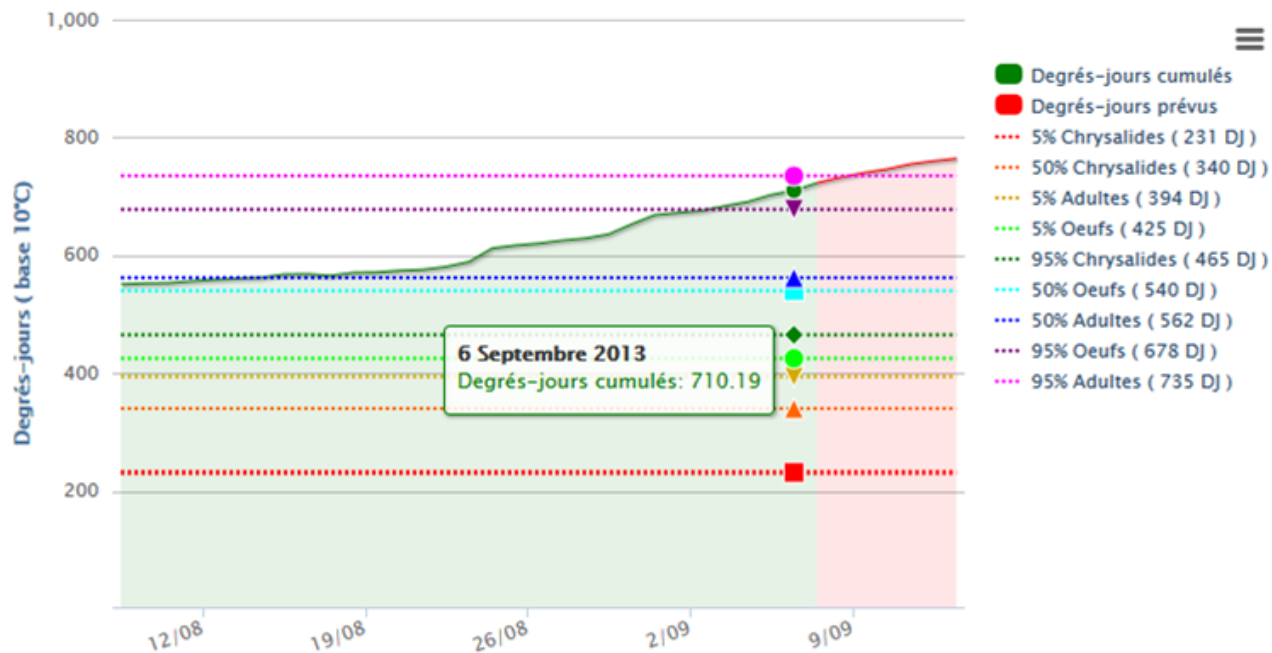
# Pest Management

## Pyrale du maïs univoltine ( Drummondville )

Pyrale du maïs univoltine ▾

Drummondville ▾

Début du calcul : 01 Avril 2014



Ce météogramme montre l'évolution des degrés-jours calculés selon la méthode « sinus simple » et les paramètres du modèle bioclimatique choisi. Les valeurs seuils correspondant à divers stades de développement sont identifiées sur le graphique.

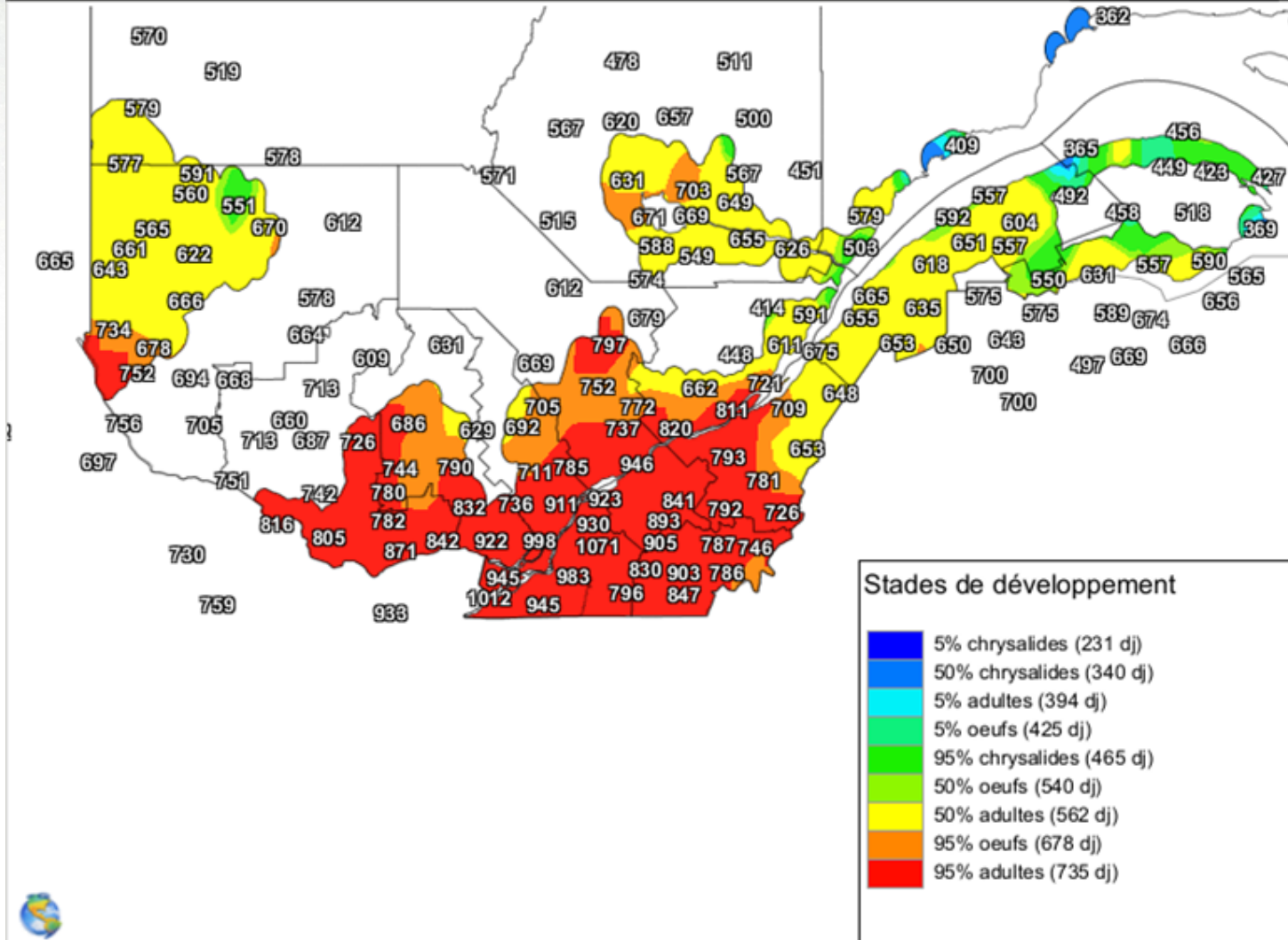
Pour bien interpréter cette courbe, veuillez-vous référer à la section « [Aide et documentation](#) ».

**Aux usagers de CIPRA :** pour une même station (autres que celles du réseau pommier), il se peut que vous remarquiez de légères différences au niveau des cumuls de degrés-jours entre ce graphique et CIPRA. Ces écarts sont dus aux différentes définitions de la journée utilisées : « journée climatologique » vs « minuit-minuit » (voir la section « [Aide et documentation](#) »).

# Pest Management

## Pyrale du maïs univoltine

[Retour à Légumes](#)



pyrale\_du\_maïs\_univoltine dd10o35

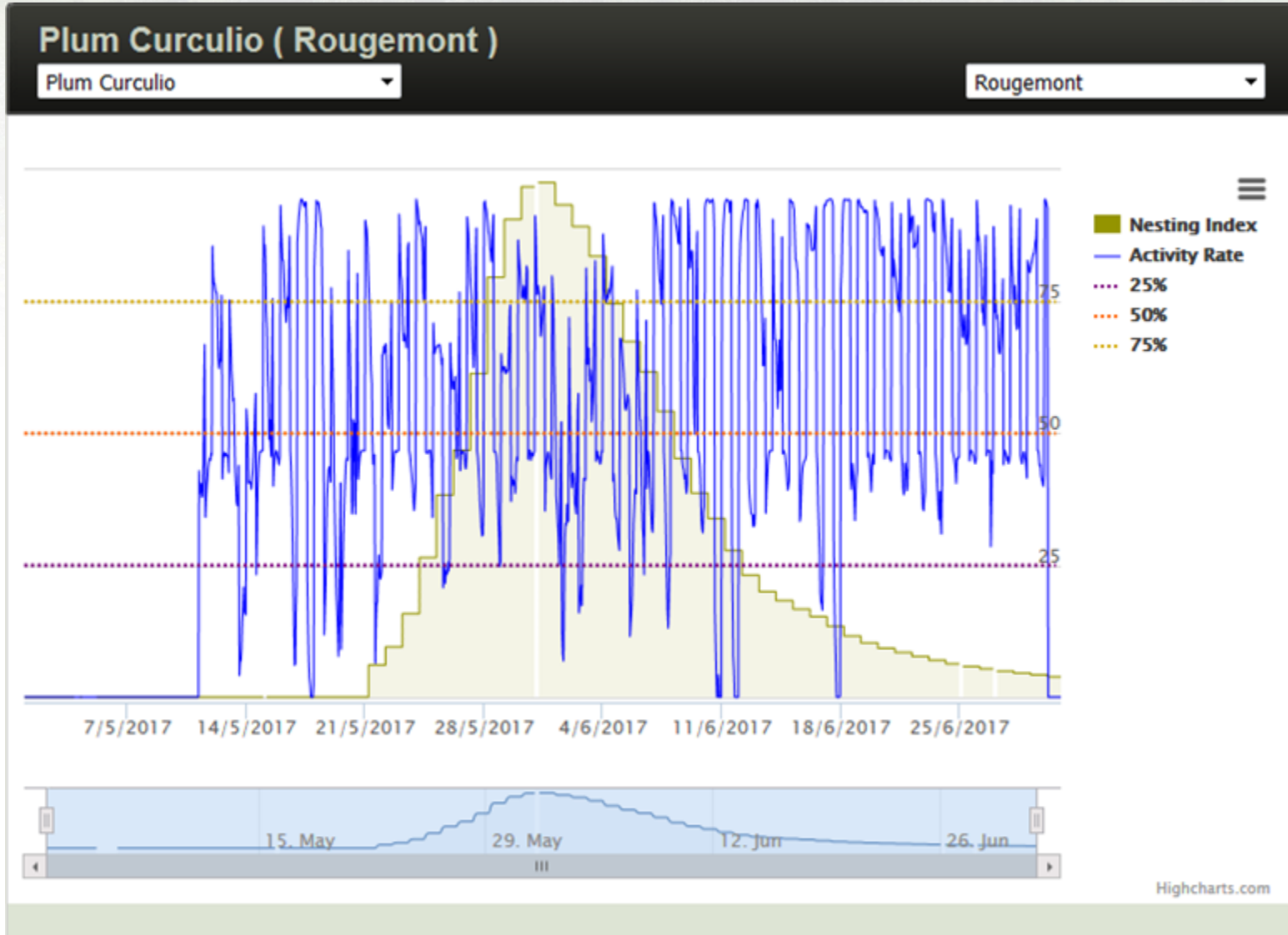
Mesonet Québec

Non disponible

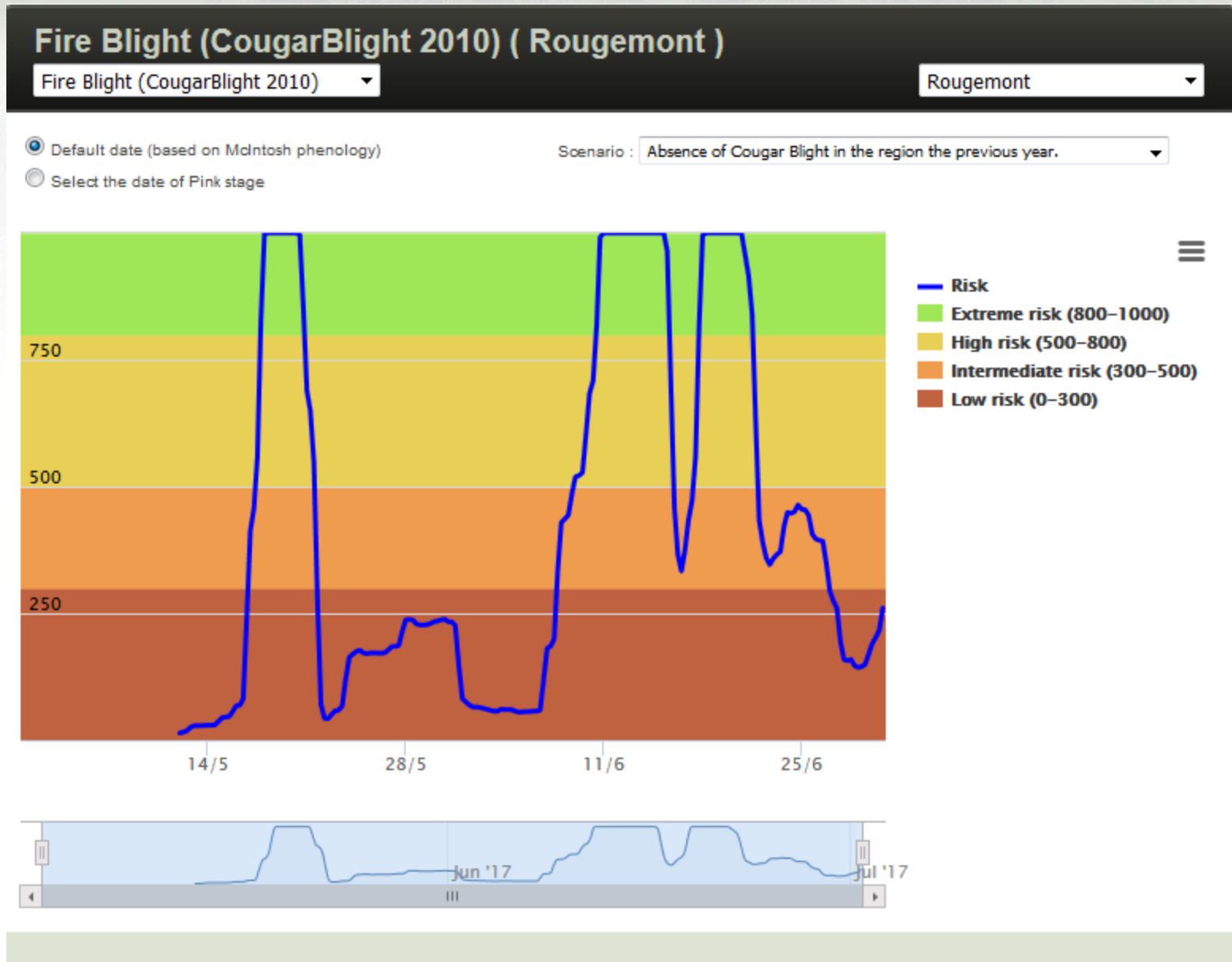
Générée le 27/1/2014 à 09:08 HNE © Copyright 2014



# Pest Management



# Pest Management



# Pest Management

## Suivi des maladies et ravageurs

[Retour à Pommes](#)

COMPTON

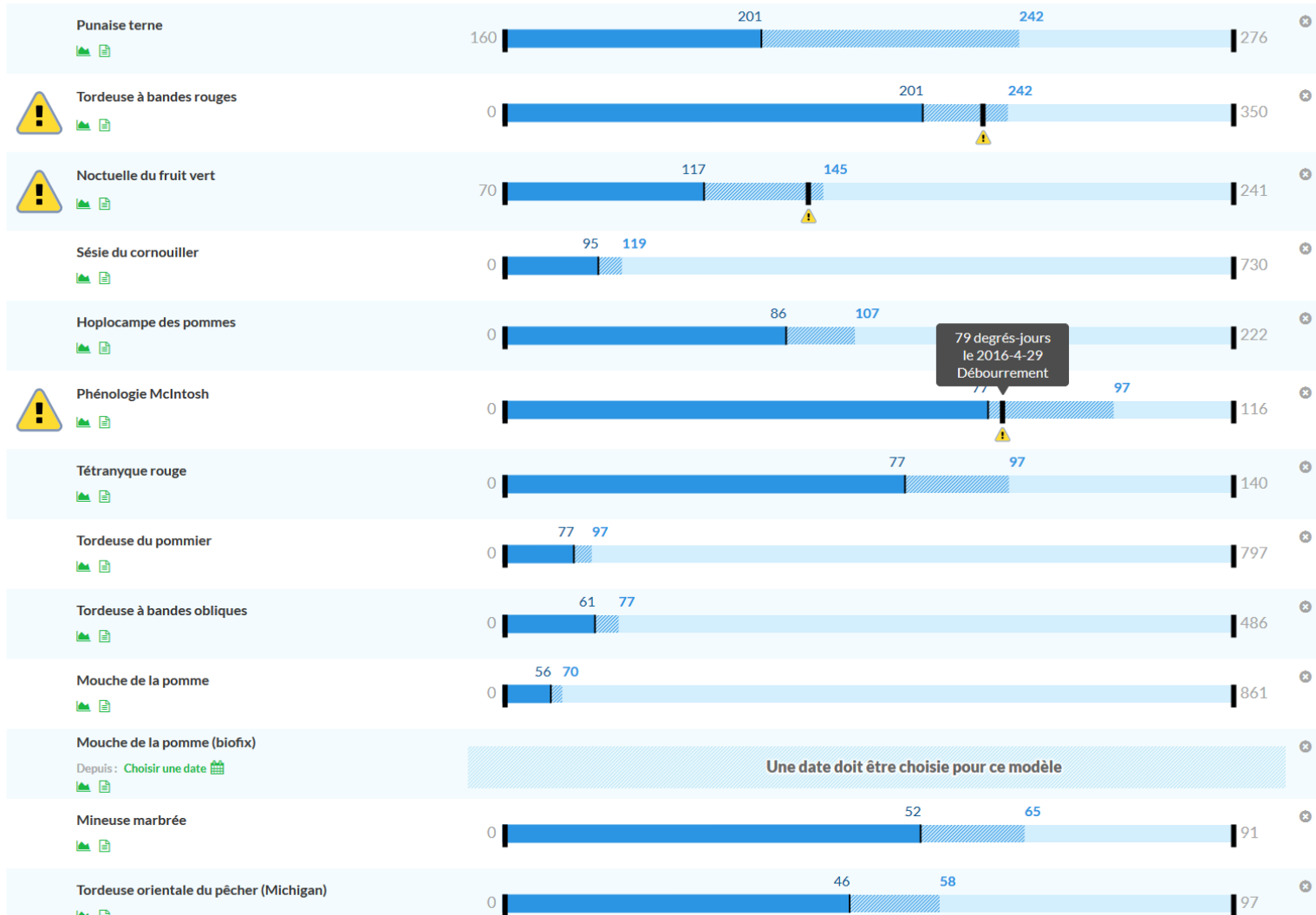
POMMES

CHOIX DES MODÈLES

Modèles Bioclimatiques

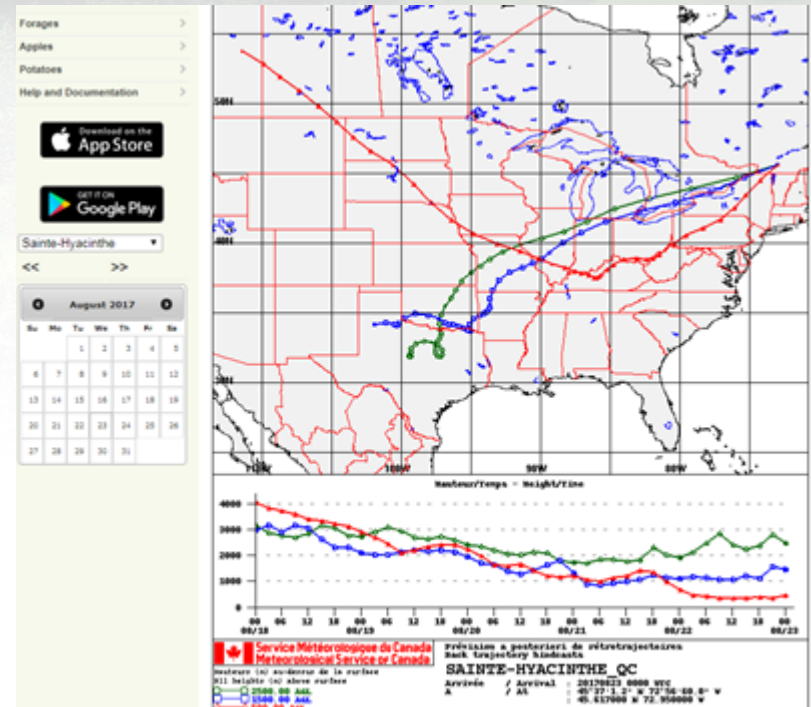
Observations Jusqu'au 2016-4-28

Prévisions Jusqu'au 2016-5-6



# Pest Management

- Back-trajectories of air masses
  - Soybean rust and aphid risk monitoring
- Agroclimate summaries in pest advisories issued by the RAP

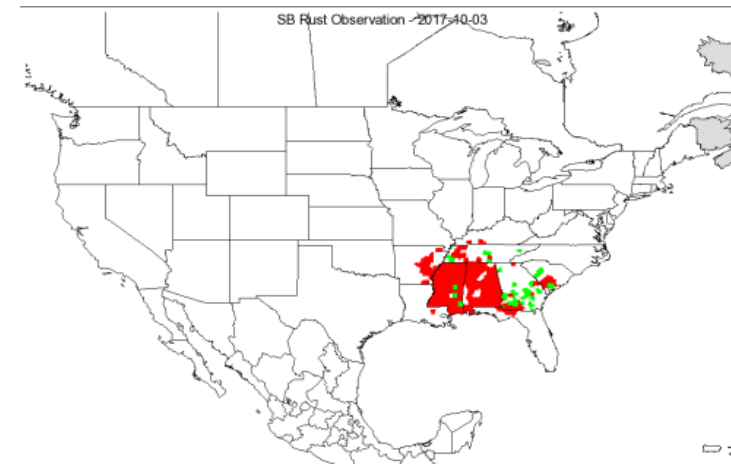


Annexe 1  
Sommaire agrométéorologique

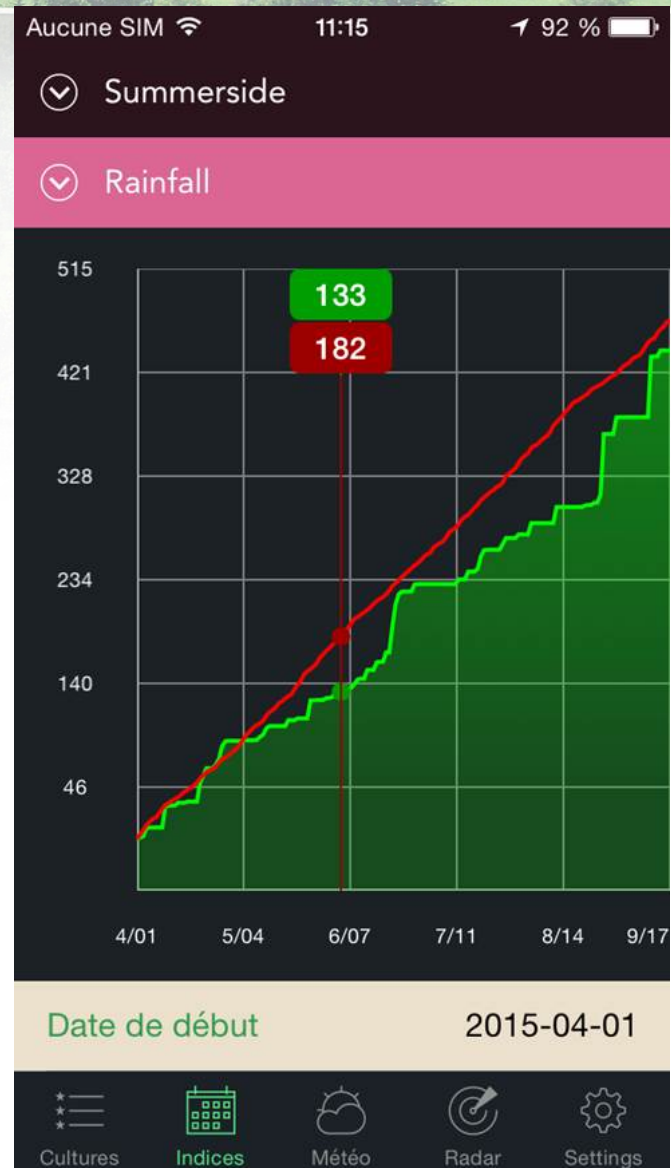
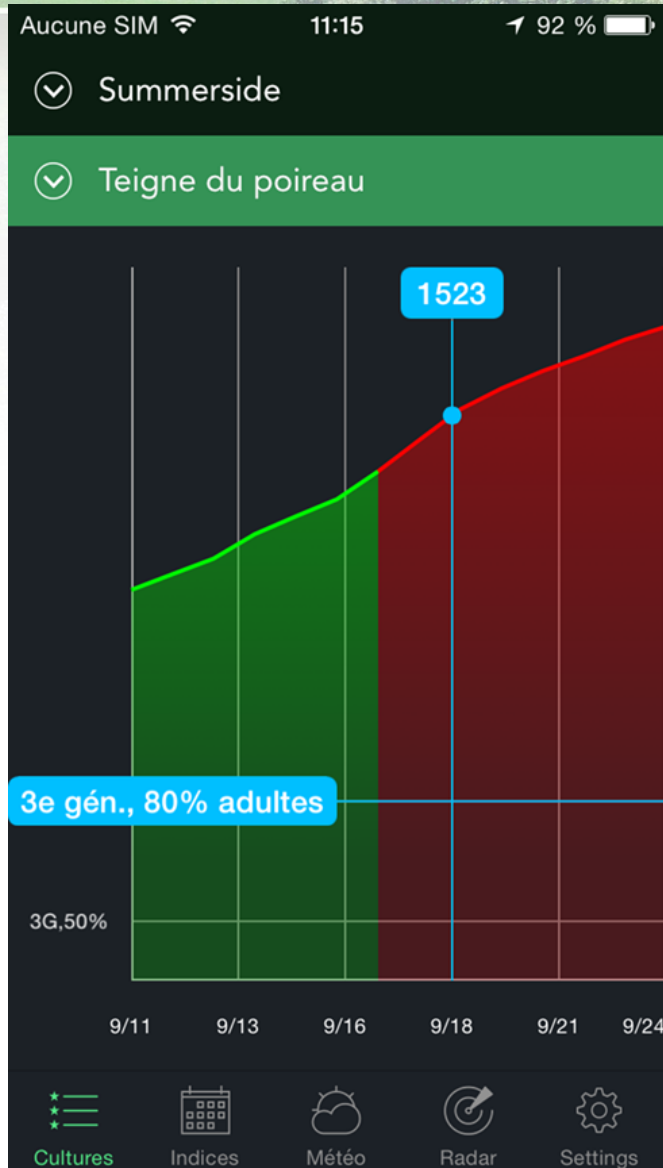
Généré le : 20 juil. 2017

Période du : 13 au 19 juil. 2017

Station	Pour la période		Degrés-jours base 5 (à partir du 1er avril)			Précipitations (mm)	
	T. min. (°C)	T. max. (°C)	2017	Écart*	2016	Pour la période	Cumul (à partir du 1er avril)
						2017	2016
<b>Bas-Saint-Laurent</b>							
La Pocatière	9,8	28,7	806	88	798	2	256
Rivière-du-Loup	9,8	26,3	701	30	699	2	267
Mont-Joli A	11,2	27,9	673	34	685	3	290
<b>Capitale-Nationale</b>							
Deschambault	7,4	28,4	810	-30	813	13	406
Saint-Laurent	11,4	27,7	846	23	870	12	384
<b>Centre-du-Québec</b>							
Saint-Germain-de-Grantham	9,4	27,4	948	-13	913	33	393
<b>Chaudière-Appalaches</b>							



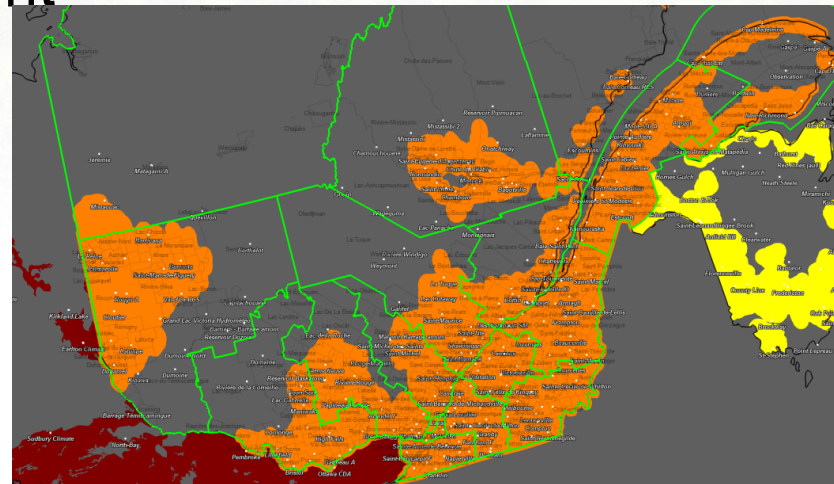
# Mobile App 1.0



# Weather Data

- *Network of networks*
  - *Financière agricole*, Environment and Climate Change Canada (ECCC), Hydro-Quebec, ...
  - Quality controlled hourly data using OCS system
- Forecast data
  - ECCC's Datamart
- Climate data
  - Gridded climate dataset (10 km)

200 stations in agricultural areas



# Developments 2017-2019

- 35 additional bioclimatic models
- Mobile App 2.0 with 20+ pest models
- High resolution CaPA rainfall analysis (2,5 km) as input to disease models
- *NAEFS* 15-day probabilistic ensemble forecasts as input for insect and crop phenology models



# Conclusion

- AQ provides weather information tailored to the specific needs of the ag sector
- Contributes to better pest management
  - 49 bioclimatic models and more to come
- Needs to evolve to meet user needs and address new pest issues in a changing climate
  - Improve and develop new models





**Merci!**

[www.agrometeo.org](http://www.agrometeo.org)