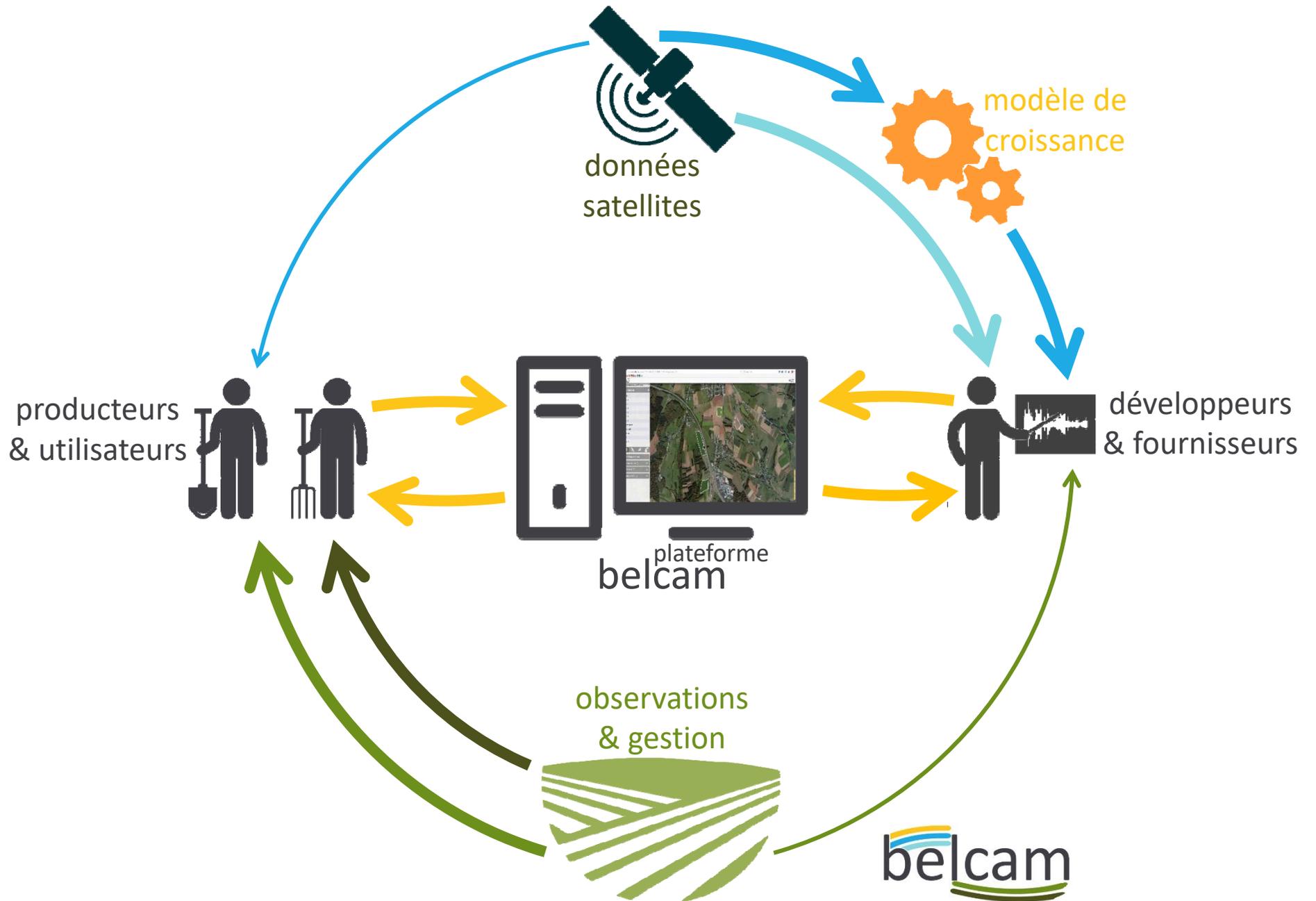


Projet BELCAM*: télédétection des besoins et rendements des cultures

(*Belgian Collaborative Agriculture Monitoring)

Joost WELLENS - 28 septembre 2016 - Arlon





Google Belcam parcel viewer

maps.elie.ucl.ac.be/belcam/tool/215b2bfd3da7db99e106097f9c3b676e/geoviewer.html

Rechercher

belcam GEO FORUM belcam

Page appartenant à Joost Wellens

Mes parcelles

- Bechet
- Cloos 30
- Cloos 31
- Cloos 32
- Feller 14
- Feller 19
- Feller 25
- Jungers grand**
- Jungers petit
- Kessler 46
- Kessler 51

Informations générales

Travaux au champ (0)

Événements (0)

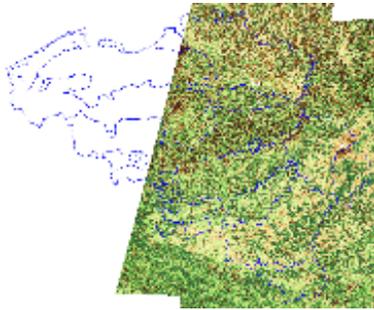
Visites de terrain (0)



1 Sentinel-2

- tuile R008: Namur-Liège-Arlon -

08/05



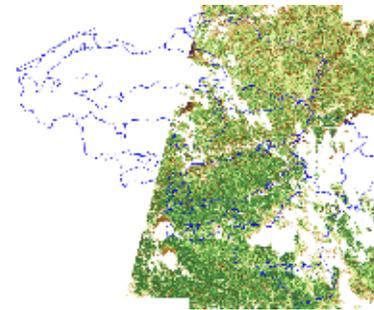
18/05



28/05



07/06



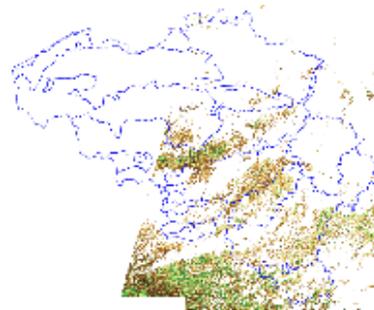
27/06



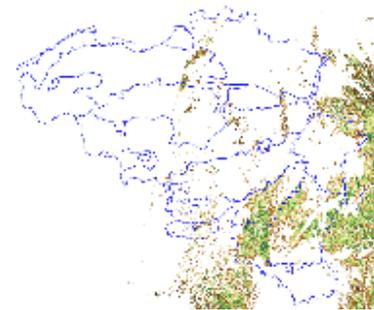
07/07



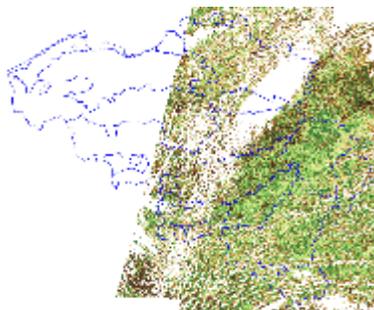
17/07



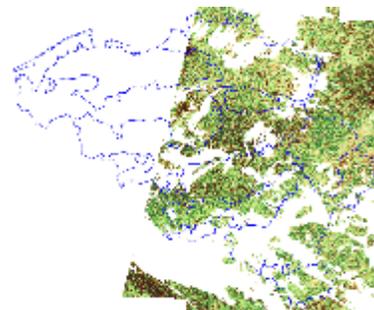
27/07



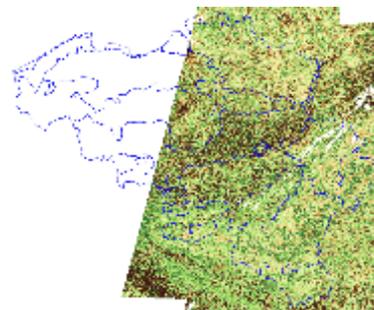
06/08



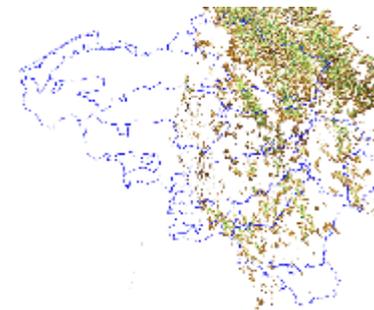
16/08



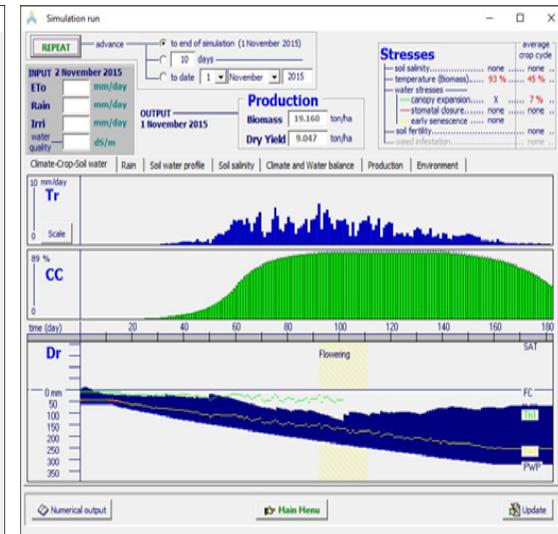
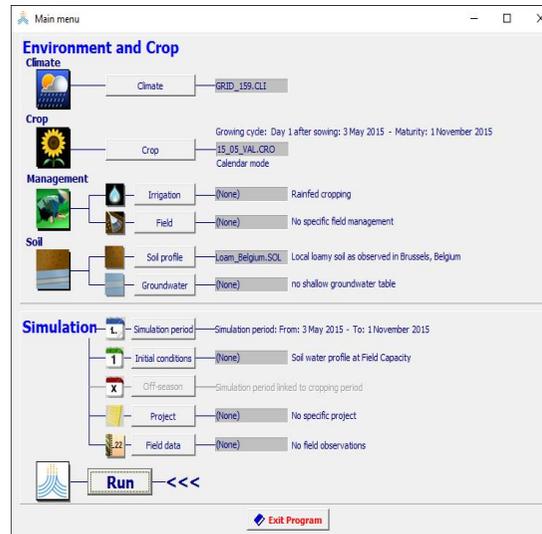
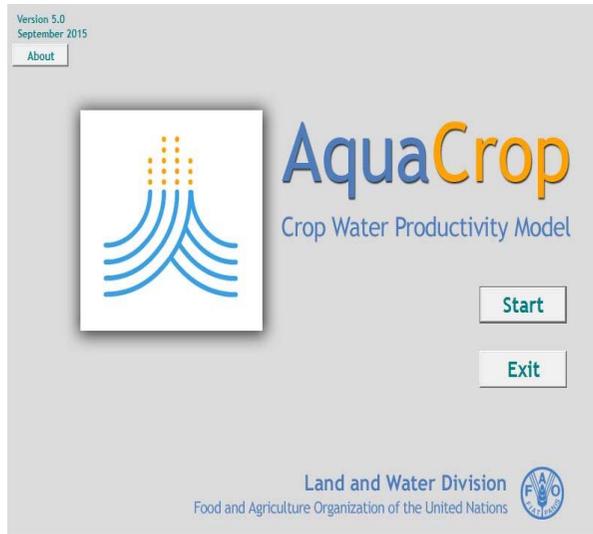
26/08



05/09



2.i AquaCrop - modèle de croissance -



- Fichier de culture 'conservateur';
- Niveau de la parcelle;
- Cultures fruitières; céréalières; racinaires ou tubercules; légumes verts.

Calibrer / Valider:
minimiser observations ↔ simulations
(fCover & rendement)

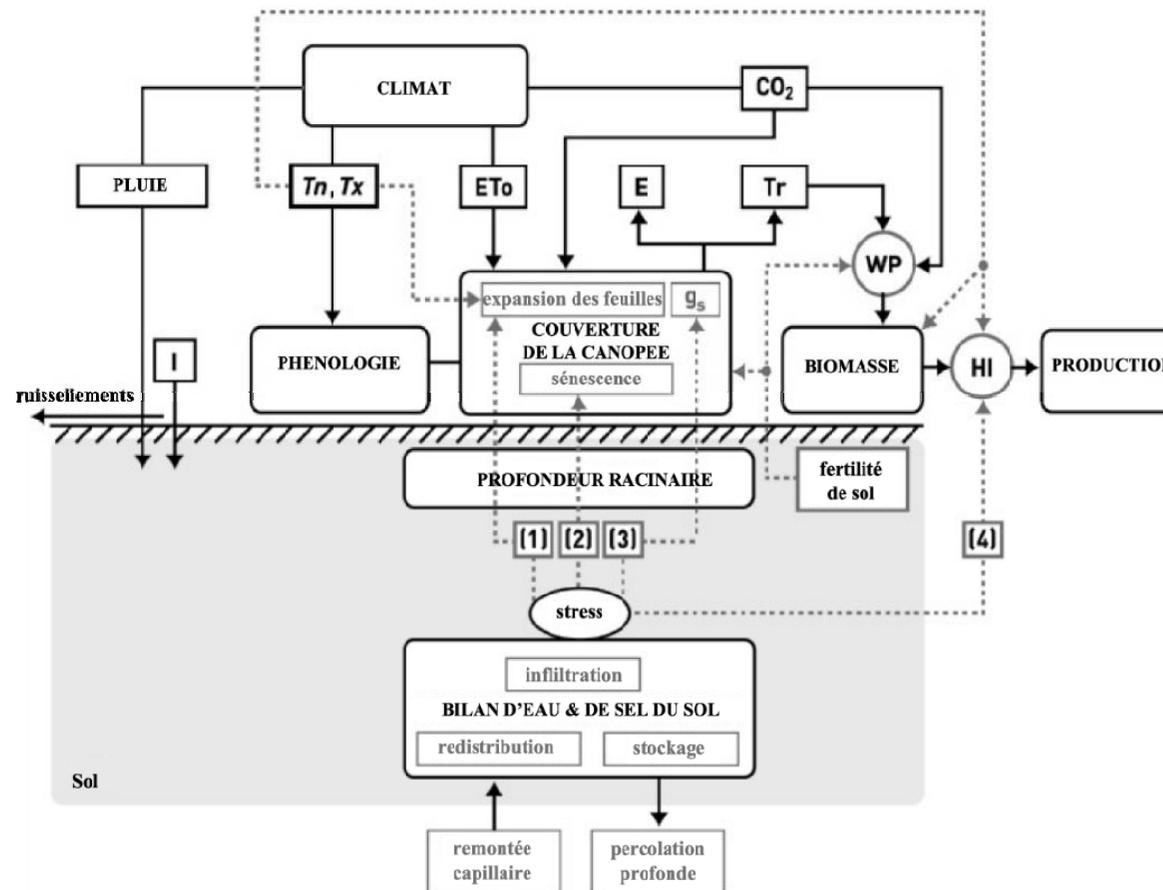
2.ii AquaCrop

- modèle de croissance -

simple
&
robuste

$B = WP \cdot \sum Tr$ soit Biomasse = Productivité de l'eau · Somme transpiration

$Y = HI \cdot B$ soit Rendement = Indice de récolte · Biomasse



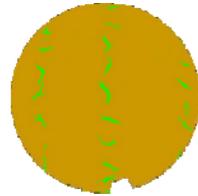
3.i Couverture foliacée

- calibration / validation -



①

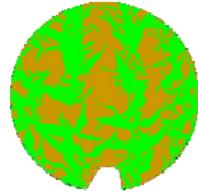
Photos perpendiculaires
et hebdomadaires



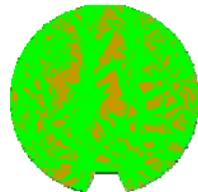
02%



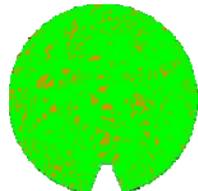
35%



55%



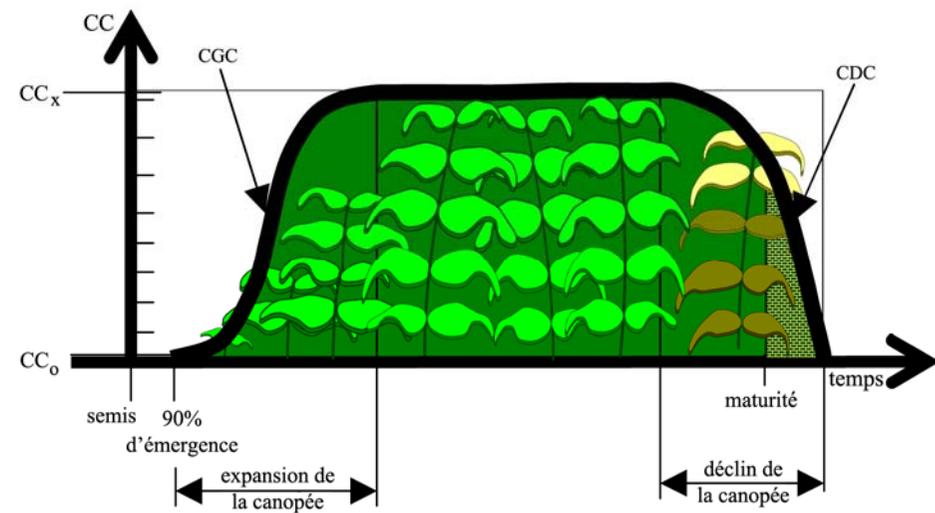
77%



88%

②

Traitement, calcul
couverture foliacée

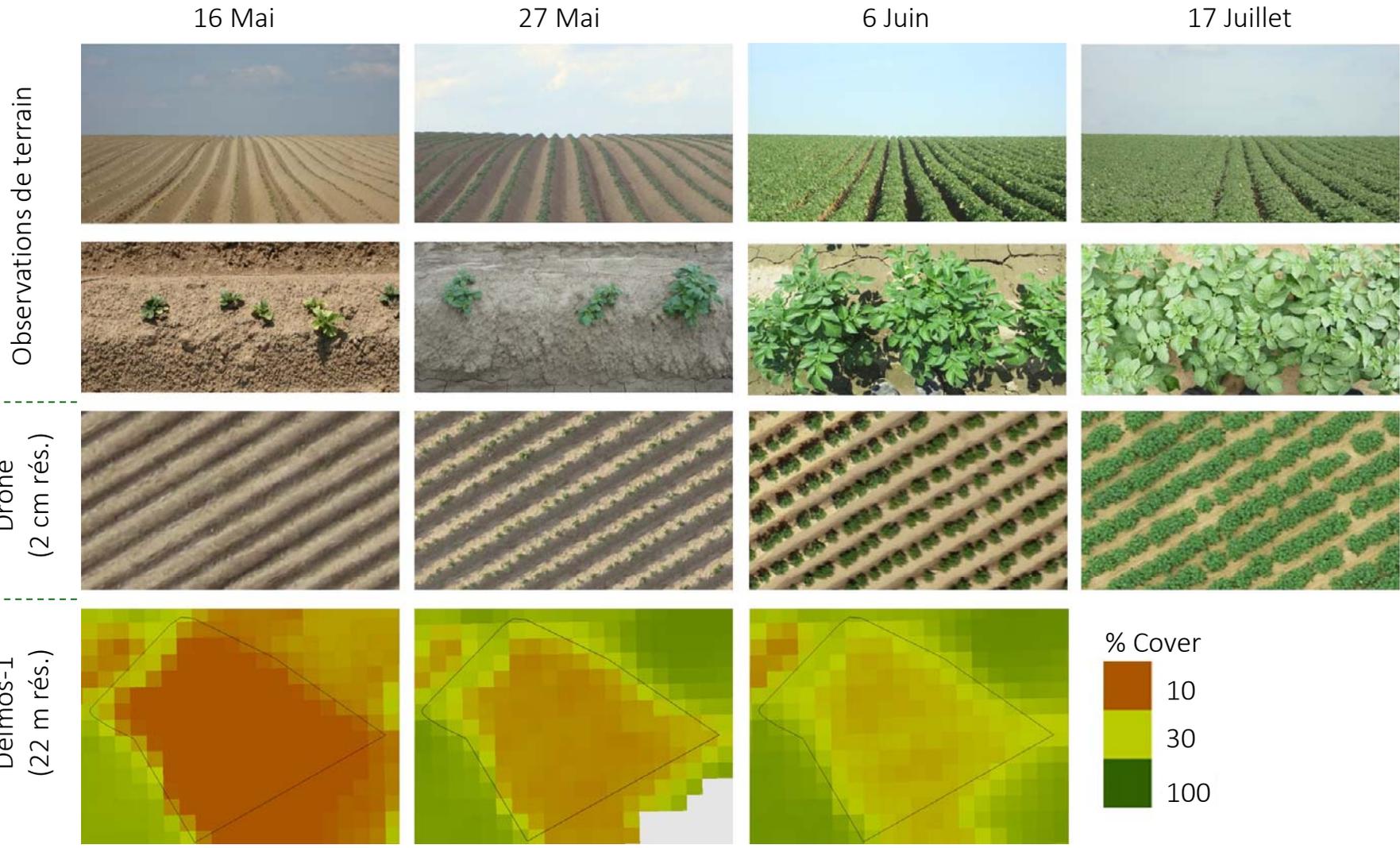


③

Graphique: - évolution;
- vitesse de développement et de déclin;
- stades phénologiques.

3.ii Couverture foliacée

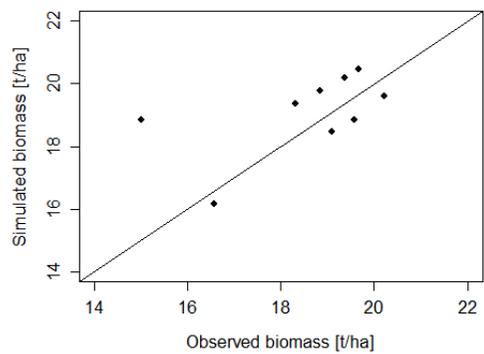
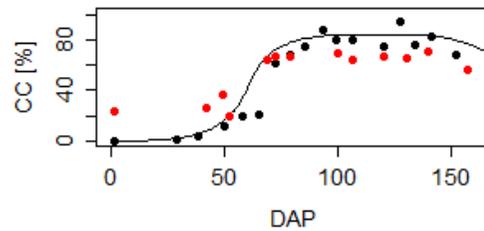
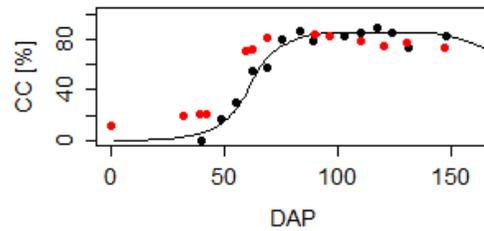
- suivi régional / détaillé -



4 Résultats

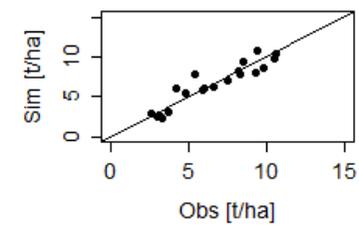
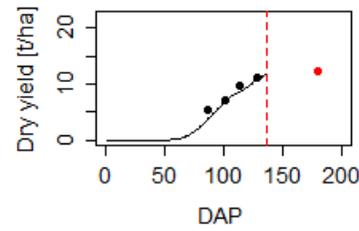
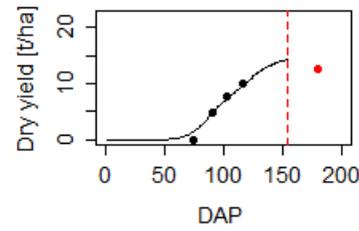
- première campagne -

maïs:



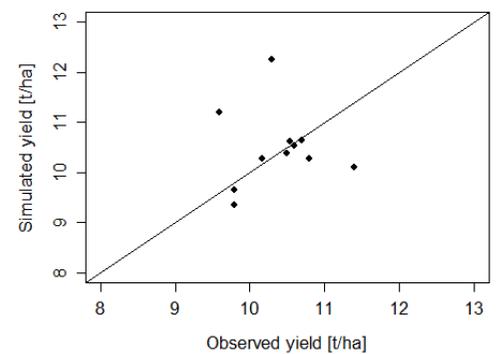
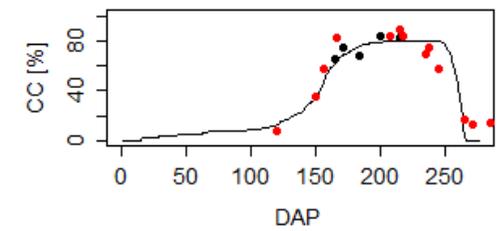
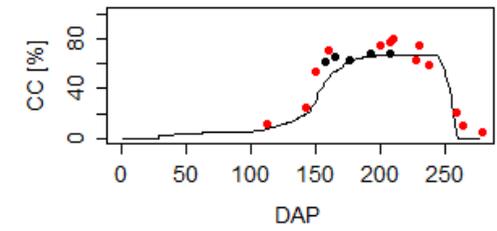
Erreur = 1,6 tonnes/ha

pomme de terre:



Erreur = 0,9 tonnes/ha

froment d'hiver:



Erreur = 0,9 tonnes/ha

5 Perspectives

> 3 ans

- Projet de recherche → application ouverte pour tous
<http://maps.elie.ucl.ac.be/belcam/>
- ↗ données, ↗ robuste, ↗ correct
- Bilan d'azote
- Détection d'anomalies: dégâts, pertes, évènements extrêmes, ...



Je vous remercie!

www.eed.ulg.ac.be



Prof. B. Tychon &
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M. El Jarroudi, I. Garba, I. Jacquemin,
M. Lang, J. Minet, P. Ozer, H. Sallah,
C. Simonis, J. Wellens.