

PRODUCING MEAT USING ORGANIC FARMING IN WALLONIA

Is dynamic rotational grazing suitable for finishing Bleu-Mixte bulls?

Since 2013, CRA-W has been testing organic fattening itineraries for male cattle at its Libramont site. These concern the production of **bull**, steers and, more recently, **rosé** veal calves.

In 2022, following the new organic legislation requiring animals to be turned out as soon as conditions permit, we decided to work with dynamic rotational grazing, a practice usually used by dairy farmers in Wallonia.

After a first grazing season in 2021, accompanied by their dams, and interesting performances during the winter (average weight gain of 1.2 kg per day), two batches of 4 animals were turned out for a second grazing season on 3 May 2022. At the time, they were 13 months old and weighed an average of 530 kg. Two contrasting supplements based on

organic concentrates were tested at pasture: one estimated at 20% and the other at 40% of feed intake, i.e. half of the maximum permitted, and the maximum permitted by legislation. Rotational grazing was carried out until 29 September on 10 plots, with a residence time of two to three days per plot. By this date, the animals had reached an average weight of 637 kg and 682 kg, with average daily gains of 700 g and 1 kg per day for the 20% and 40% supplements respectively. The animals, which were then returned to the stables because they were considered too thin, were fattened for a further three months. They were slaughtered at an average age of 21 months, with live weights of 690 kg (20% case) and 750 kg (40% case).

Compared with historical trials, the animals were slaughtered young after ingesting a lower quantity



of concentrates per animal, especially those supplemented at a maximum of 20% of feed intake. However, the possibility of finishing Bleu-Mixte bulls on this type of grazing has not been demonstrated.

Since 2023, the **SPOT** project has also been mobilising this practice with dairy-meat crossbred animals,

to assess whether fattening this type of animal is possible while making the most of the advantages associated with grazing.

Contact:
Alexandre Mertens •
a.mertens@cra.wallonie.be

SATELLITES, THE TOOL OF TOMORROW FOR CROP MONITORING...

In this context, the **SPAGHYTI** project aims to make the most of hyperspectral satellite images to monitor nitrogen status and (a)biotic stress at the level of winter wheat fields in Wallonia.



The relevance of multispectral satellite imagery for such applications has already been demonstrated by CRA-W projects (e.g. the **BELCAM** and **SAGRIWASENT** projects). The hyperspectral satellite images used in the SPAGHYTI project are unique in that they can offer a greater number of narrow spectral bands. This special feature, coupled with a higher acquisition frequency, should enable finer characterisation of the phenomena under consideration, at marginal cost.

In order to calibrate and validate the algorithms, intensive field campaigns are organised. The

first of these took place during the 2022-2023 season (March to July). Various observations and measurements were carried out regularly, including field qualification of diseases, measurement of spectral data using a portable spectrometer (ASD FieldSpec 4) and characterisation of the canopy using hemispheric images. It continued with the collection of samples and the measurement of dry matter and nitrogen, in the whole plant but also specifically in the ears at the end of the season, carried out in the laboratory by infrared spectrometry (FOSS NIR XDS). A second field campaign is scheduled for the 2023-2024 season.

An initial calibration of the algorithms was carried out on the basis of data from varietal trials (fertilisers, post-registration and fungicides) set up by CRA-W or CePiCop (fertiliser trials). Validation of these algorithms is based on data collected from farmers' field, compatible with the spatial resolution of hyperspectral satellite images. Algorithm development involves identifying the most relevant wavelengths or combinations of wavelengths (in the form of indices). The initial results obtained highlight

the relevance of hyperspectral imaging for monitoring nitrogen status.

Digital agriculture is booming, and the contribution of satellite imagery is undoubtedly an innovative approach contributing to the evolution of Walloon agriculture towards greater resilience and greater respect for the environment.

Financing:

"skywin" competitiveness cluster, agreement no. 8614

Cooperation partnership:

private stakeholders (Constellr – project coordinator, AMOS, DELTATEC) and scientific/technical stakeholders (UCLouvain, CePiCop)



spectral characterisation of the canopy

Contacts: Louise Leclère •
l.leclere@cra.wallonie.be
Philippe Vermeulen •
p.vermeulen@cra.wallonie.be

Subscribe to our newsletter
www.cra.wallonie.be/en/newsletter

Centre wallon de Recherches agronomiques
Bâtiment Lacroix • rue de Liroux, 9 • B-5030 Gembloux
Tel : +32 81 87 40 01 • Fax : +32 81 87 40 11
www.cra.wallonie.be

The photographs of this number are the property of CRA-W.