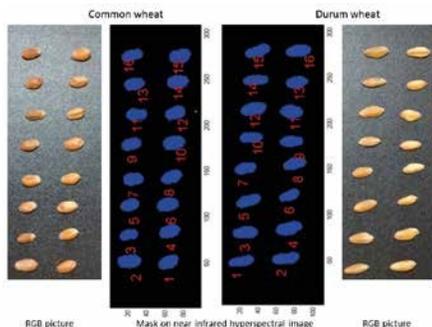




ANALYTICAL TOOLS FOR THE MONITORING OF FOOD FRAUD

THE GOAL OF THE EUROPEAN FOODINTEGRITY PROJECT IS TO PROVIDE EUROPE WITH AN INVENTORY OF TOOLS AND RESOURCES TO DETECT FRAUD AND GUARANTEE THE INTEGRITY OF THE FOOD CHAIN.



As part of a 5-year project (2014-2018), the partners have worked together to develop tools that can be integrated into industrial production and supply chains to ensure the integrity of food products. The CRA-W has made a significant contribution to this by exploring the role of near-infrared spectroscopy, particularly near-infrared hyperspectral imaging, in the detection of soft wheat grains in durum wheat. The aim is

to enable companies to detect a mixture of soft wheat and durum wheat on reception of the cereals. This is of interest because the legislation in some southern European countries requires the use of durum wheat for the manufacture of pasta, with a maximum tolerance of 3% soft wheat. For this study, 77 samples of durum wheat and 180 samples of soft wheat, collected in 2014, 2015 and 2016 in Italy and Belgium respectively, were analysed using near-infrared hyperspectral imaging, seed by seed (see illustration). Four approaches were investigated to distinguish soft wheat from durum wheat. These were based on morphological criteria, near-infrared spectral profile, protein content (<12% or > 12%), and the vitreous/non-vitreous grain ratio. The results show that the method based on a combination of morphological criteria and spectral profiles can easily detect fraud or adulteration at the required threshold. Moreover, models based on protein content and vitreousness can be

used to reject batches that do not meet the minimum thresholds.

The tools developed within the framework of this project should help to bring the worlds of research and industry closer together. On another note, the research provides the agri-food sector with analytical methods useful in the authentication of products. CRA-W's expertise in database management and data fusion, combined with its knowledge of agricultural product authentication, makes CRA-W a preferred partner in the development of on-site analytical solutions for product control.

Further information can be found on <https://secure.fera.defra.gov.uk/foodintegrity/index.cfm>

Contact: Philippe Vermeulen,
p.vermeulen@cra.wallonie.be



THE CRA-W PARTICIPATES IN THE DEVELOPMENT OF MACHINERY IN WALLONIA...

THE CRA-W HAS ALWAYS WORKED CLOSELY WITH THE VARIOUS PLAYERS IN THE AGRICULTURAL MACHINERY SECTOR. EVEN TODAY, THE CRA-W PROVIDES EXPERTISE IN THE SELECTION OF INNOVATIVE PRODUCTS. IT IS ALSO THE MAIN PARTNER IN THE ORGANISATION OF MAJOR EVENTS AND DEMONSTRATIONS OF EQUIPMENT.

Agribex, the international agricultural fair in Brussels, organises a competition at each round. There are prizes for the most outstanding innovations in the animal, vegetable and garden & green space sectors. The jury for the vegetable sector includes representatives from the CRA-W. Their job is to consider the relevance of the various technical dossiers and assess the novelties put forward. In 2017, the jury selected five winners, who received gold and silver awards.

Potato Europe is an international open-air fair devoted entirely to potatoes. The CRA-W, a Fedagrim partner, organises demonstrations from the uprooting of potatoes to their unloading and sorting. Its role is to create planting schemes, prepare harvesting areas for the different machines and, above all, to assist in the smooth running of the various demonstrations during the two days.

Every year, the CRA-W chairs the selection committee of the **Mechanic Show** at the Libramont Agricultural, Forestry and Agribusiness Fair, which is the biggest outdoor fair in Europe. In this event, it actively participates in the selection of the latest developments to be presented, and in the running and presentation of the demonstrations. It also plays a leading role in the organisation of the **Journée de l'Herbe**, (Grass Day), which takes place every four years. The field work consists, first, in the preparation of the different plots required for the demonstrations (crop monitoring, delimitation of parcels according to the type of machine) and ensuring the smooth running of the day (safety, adherence to timing, presentation of machines,...). The second part is concerned with compiling the catalogue, which contains all the technical characteristics of the machines presented during the day (108 in this year's event).



Finally, we would like to add that each year, in collaboration with various partners (pilot centres, Provinces, associations, etc.), the CRA-W organises **demonstration days for specific agricultural equipment**, depending on requests and our trials: beetroot and chicory technical days, the Organic interprofessional day, and the spraying of organic matter with Protect'eau.

Contact: Gaëtan Dubois,
g.dubois@cra.wallonie.be