

Ergot detection slide show



Detection of ergot in cereals
by hyperspectral NIR imaging
CONFffIDENCE – WP4a
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CONFffIDENCE OpenDay 2011
Prague, 3 November 2011

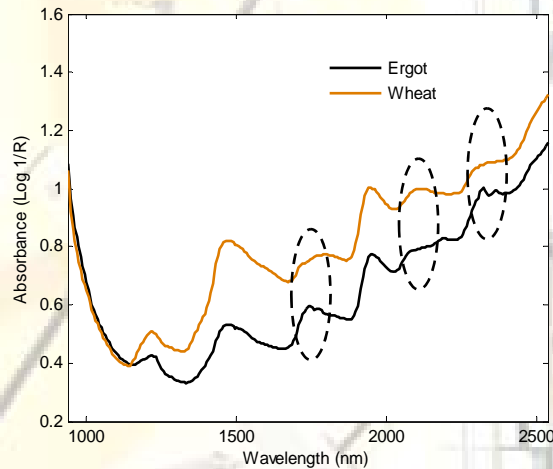


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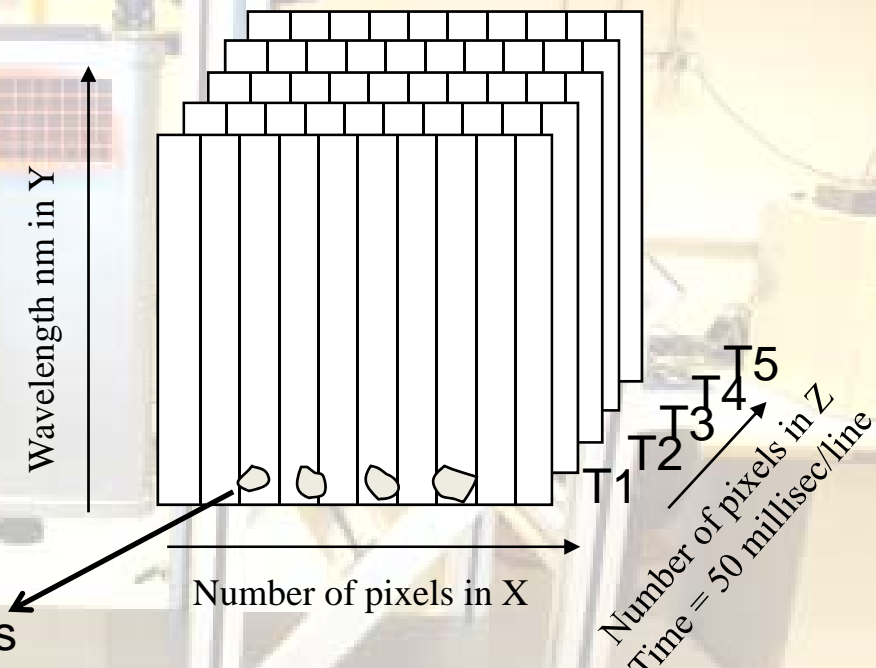


NIR line scan camera: features

- NIR camera setup



Cereal kernels and ergot bodies



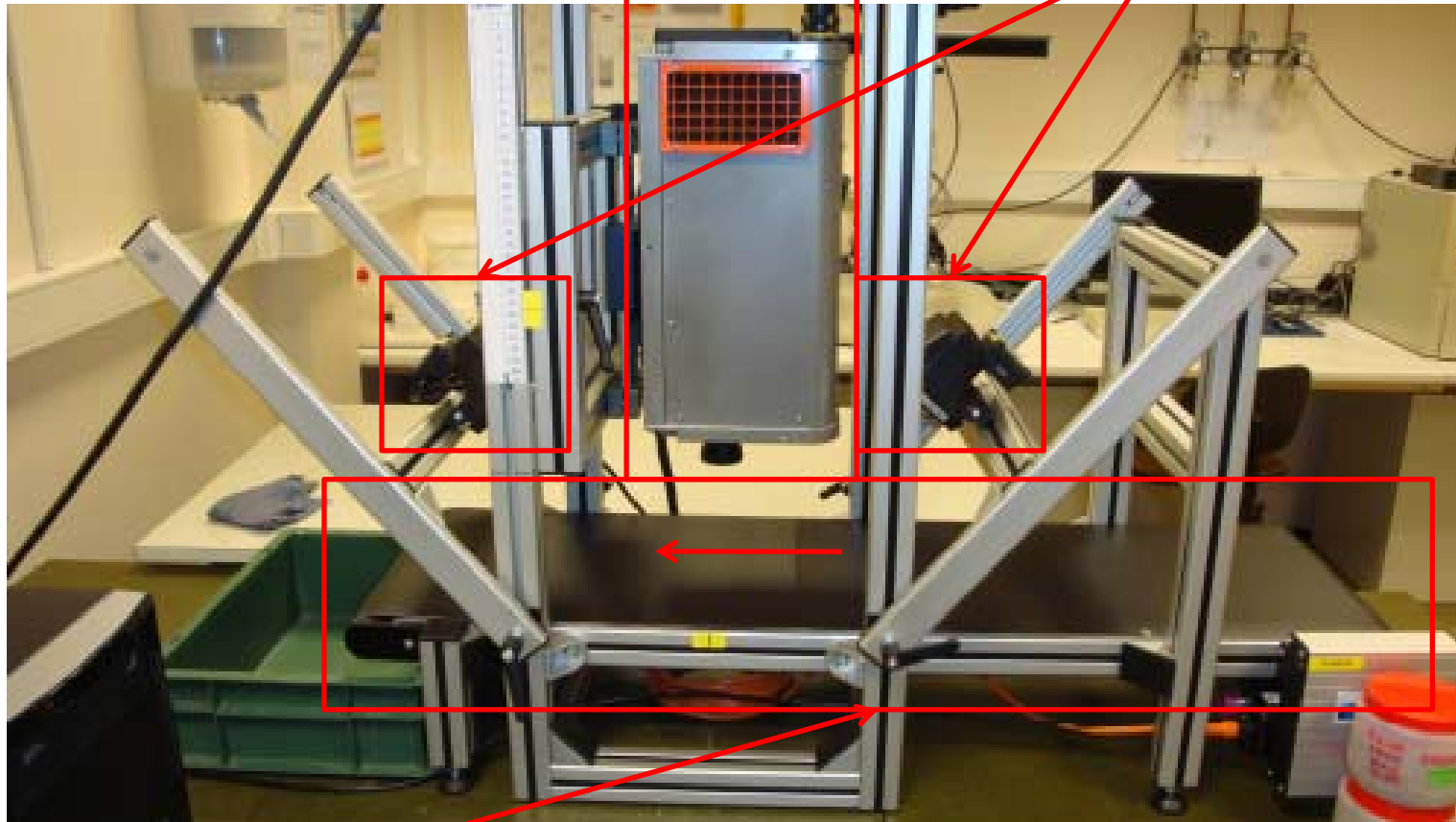
- Wavelength range: 1000-2500 nm by step of 6 nm
- 1 line = 320 pixels = 320 spectra
- Analysed surface = continuous
- Time of acquisition = 50 millisecc/pixel line

NIR line scan camera: instrument



NIR camera

Light source



Conveyor belt



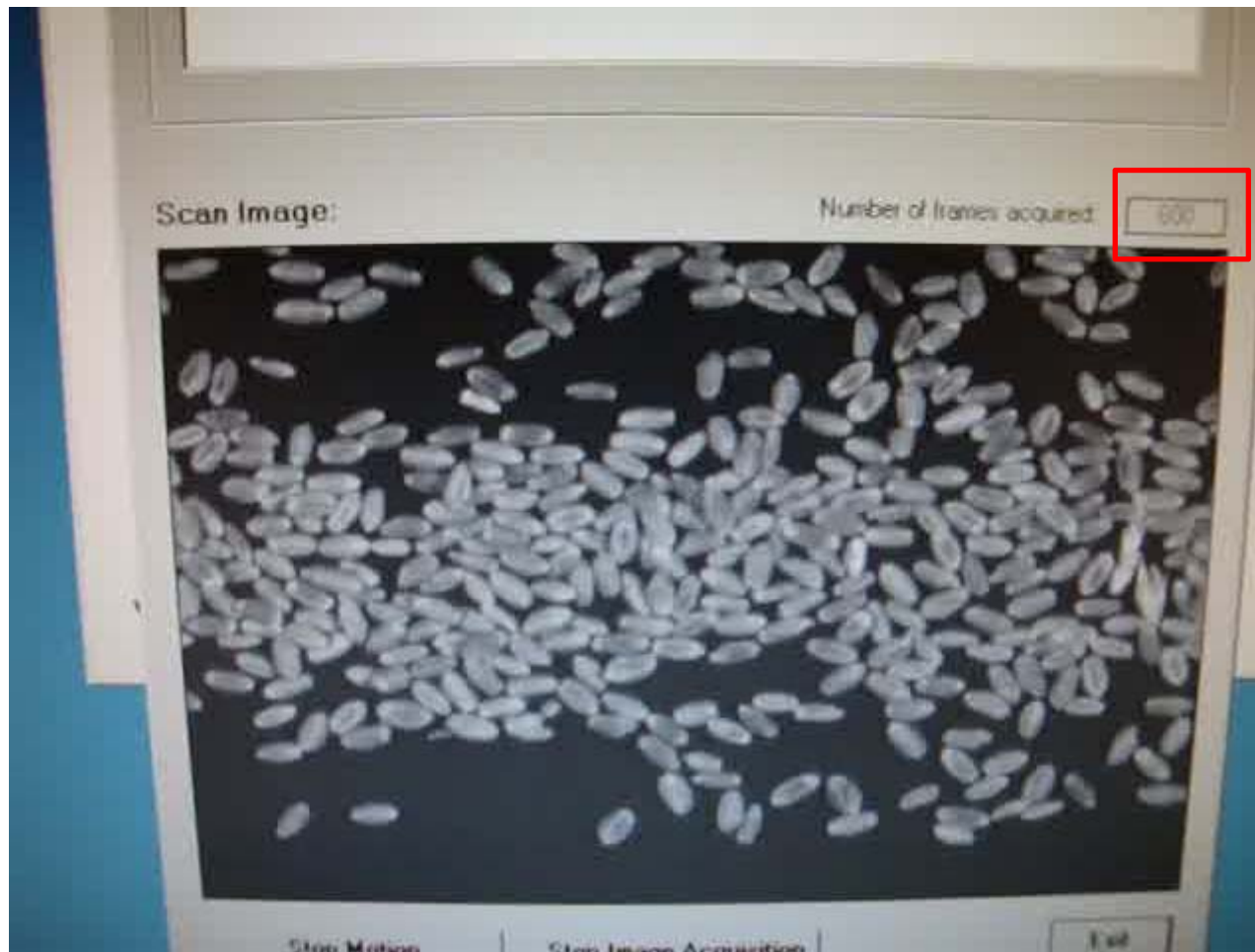
NIR line scan camera: analysis



Analysis follow-up on screen



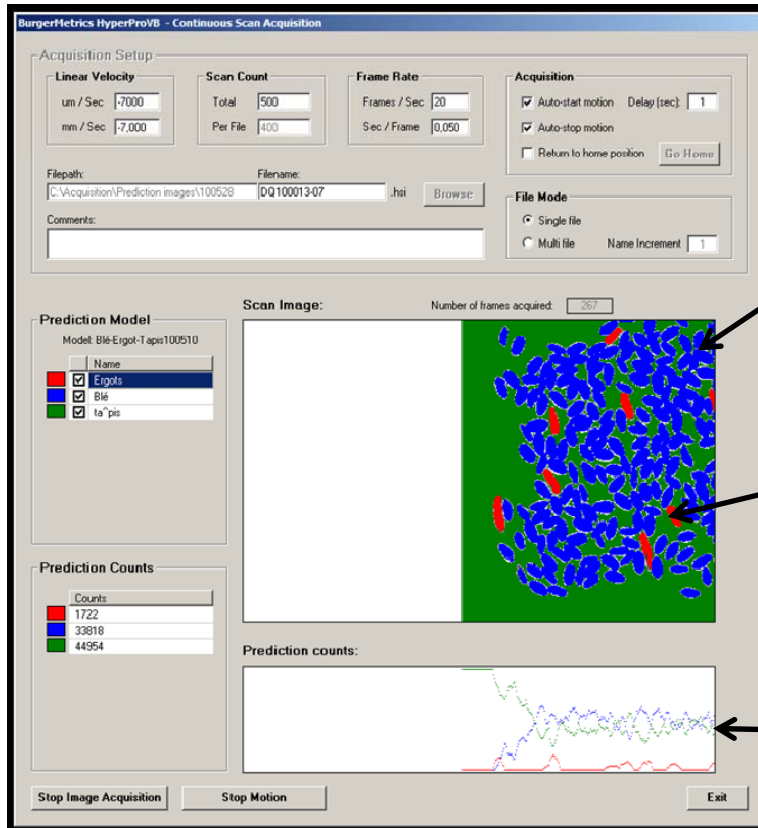
Number of frames acquired



Analysis and on-line prediction



Ergot detection in wheat by NIR imaging



Wheat kernels

Ergot Bodies

The number of pixels counted for each class of the model is also provided.

Analytical parameters used and on-line prediction results of the PLSDA (Partial Least Squares Discriminant Analysis) model



NIR line scan camera: instrument in demonstration at NUTRECO



NIR camera

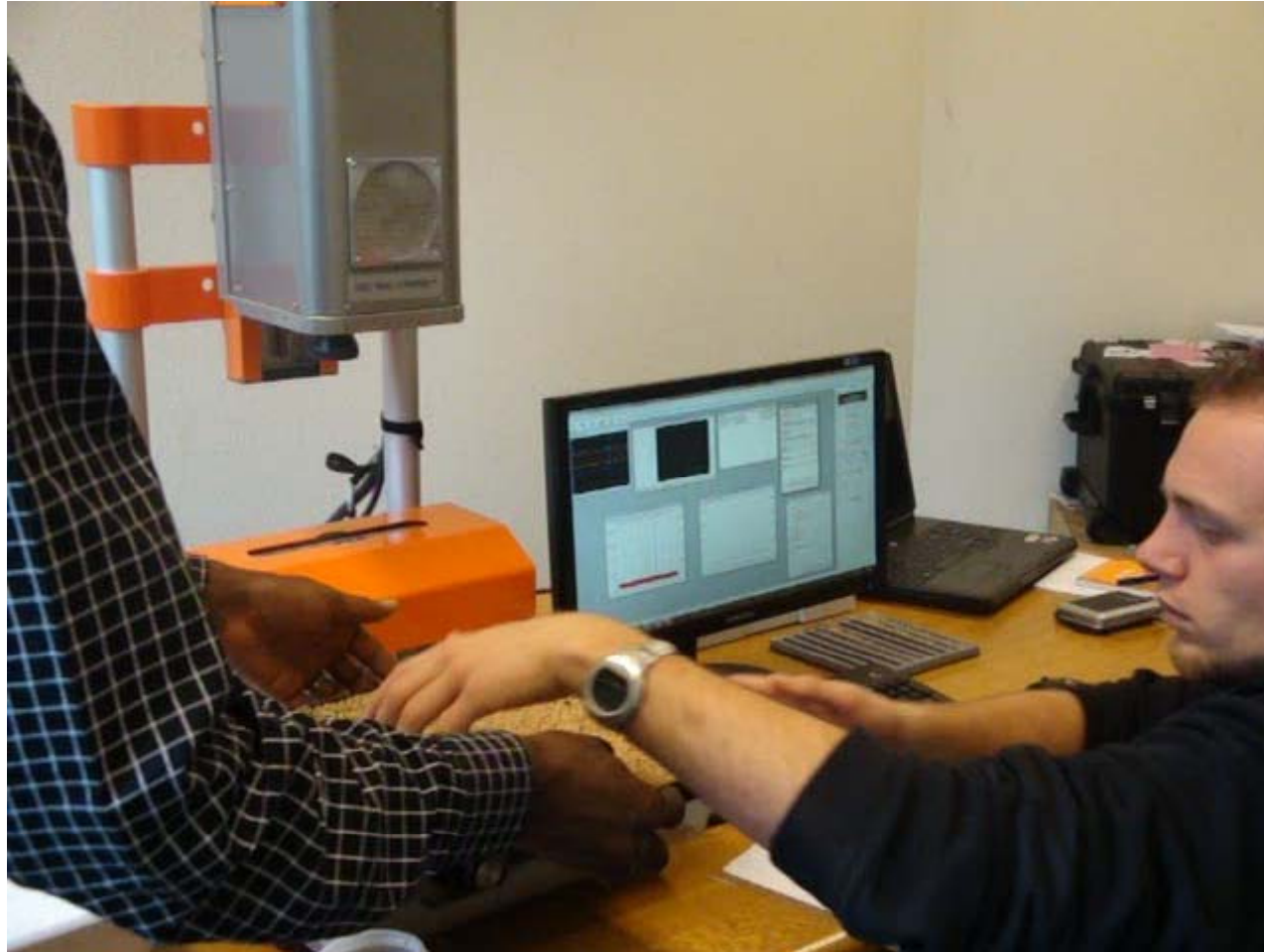


Light source

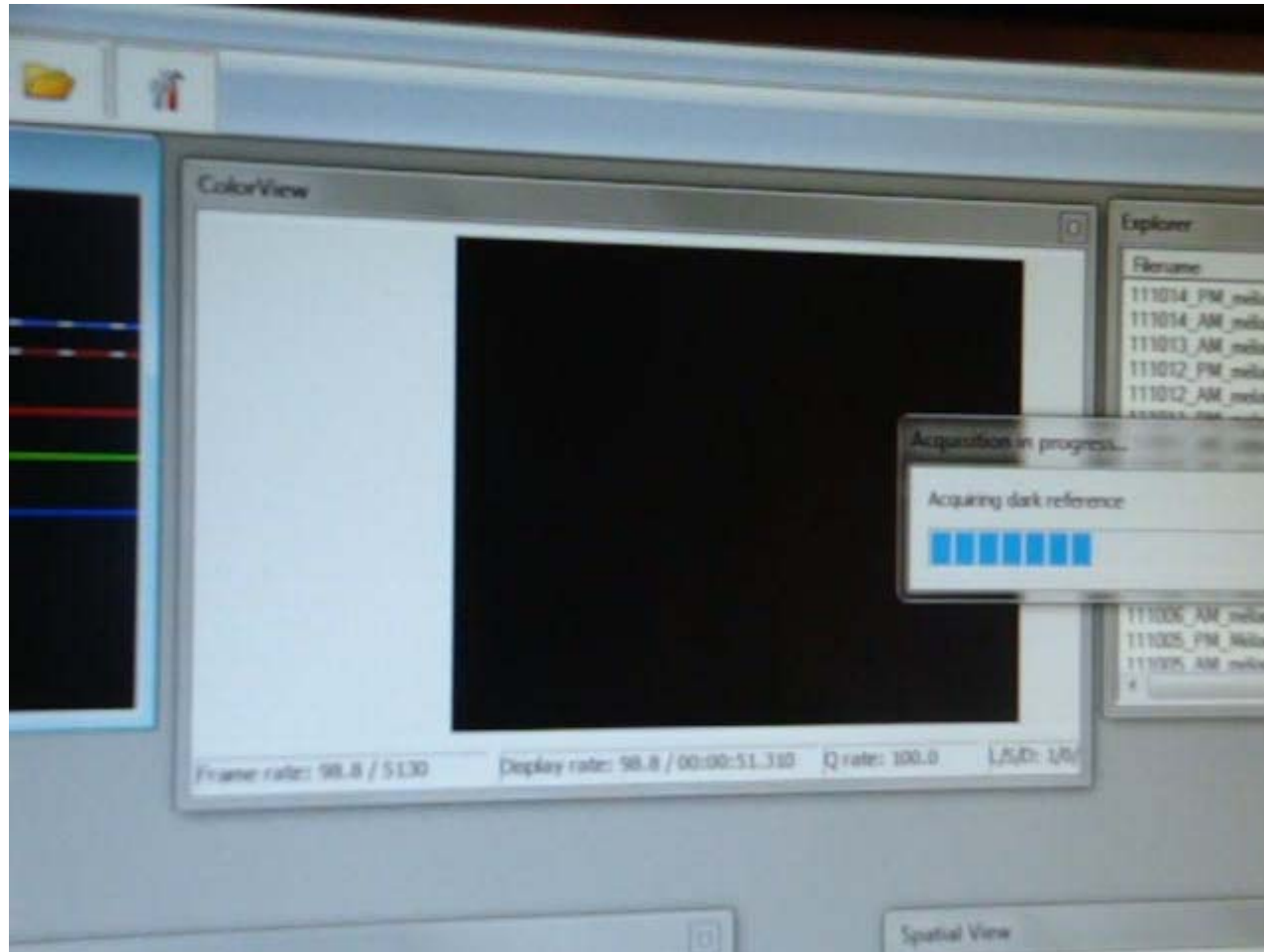
Tray



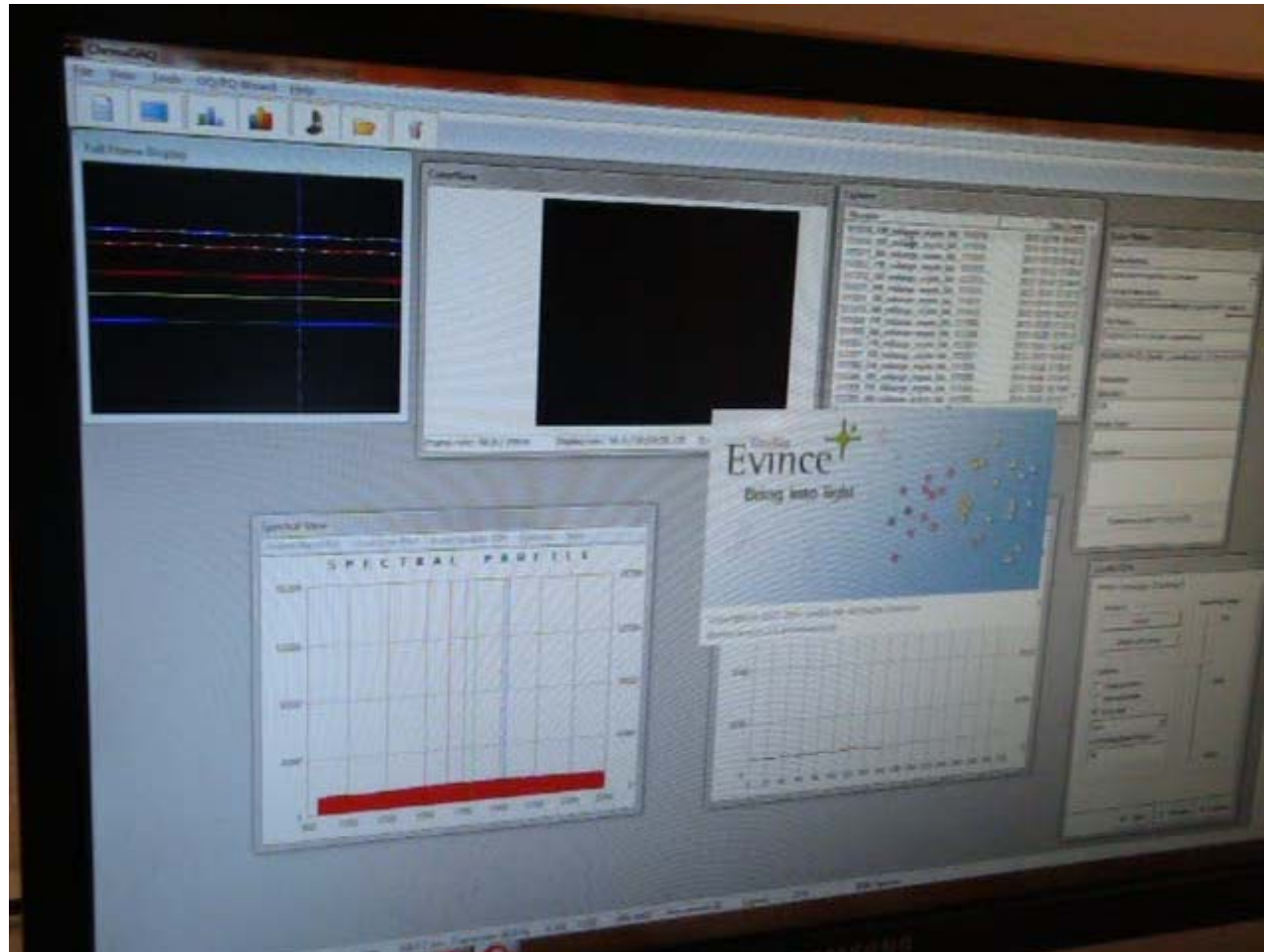
NIR line scan camera: analysis



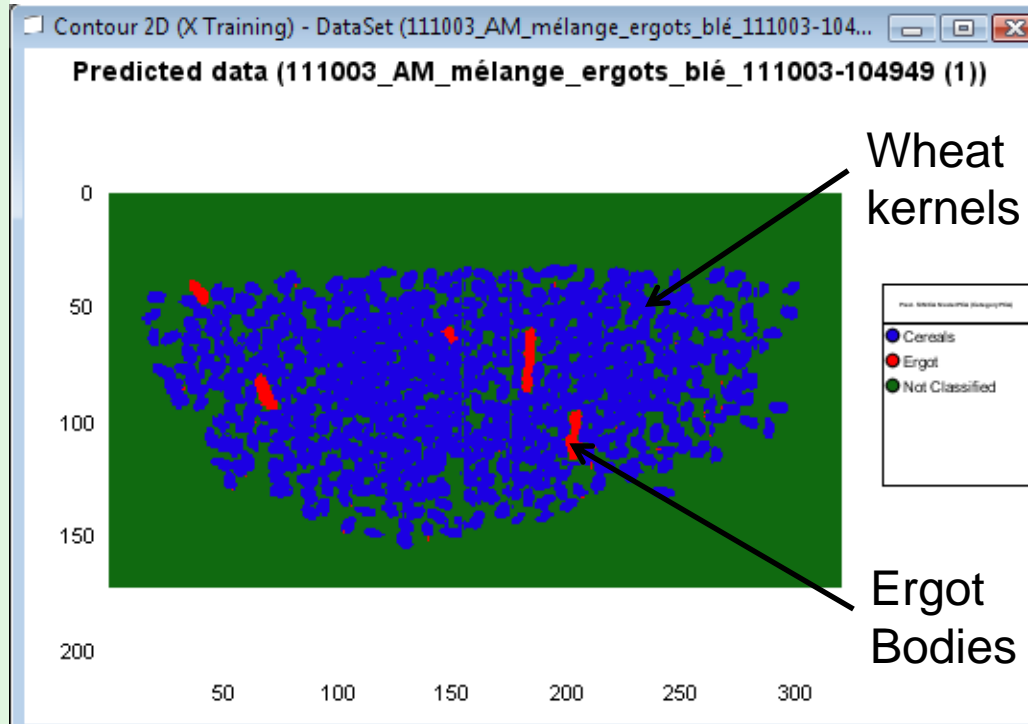
NIR line scan camera: acquisition



NIR line scan camera: prediction



Ergot detection in wheat by NIR imaging

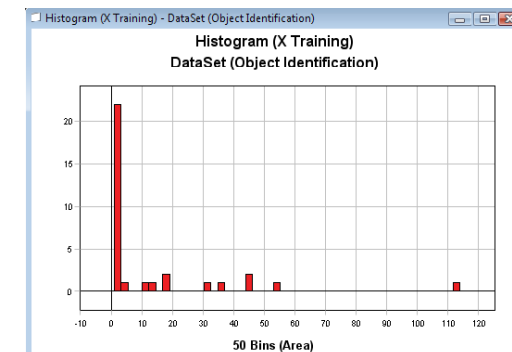


Prediction results of the SIMCA (Soft Independent Method of Class Analogy) model

The number of pixels counted for each class of the model and ...

ID 1	1
Predicted as:	# Predicted
1	Not Classified 36062 (65.5...)
2	Ergot 425 (0.772%)
3	Cereals 18553 (33.7...)
4	
5	Total 55040 (100%)

... the distribution of groups of pixels detected as ergot are also provided.



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More information

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