

NIRS calibration process...



syngenta

...For fatty acids prediction

What equipment ?

Equipment

- ❁ bruker
- ❁ located in saint Sauveur, France
- ❁ reflectance system
- ❁ Dedicated to sunflower and durum



- ➔ **near the main sunflower breeding station**
- ➔ **for fatty acids prediction / ground seeds**
- ➔ **internal calibration curve till summer 2007**

1st screening
&
hybrids

How did we process ?

Element of protocol

🌸 what ?

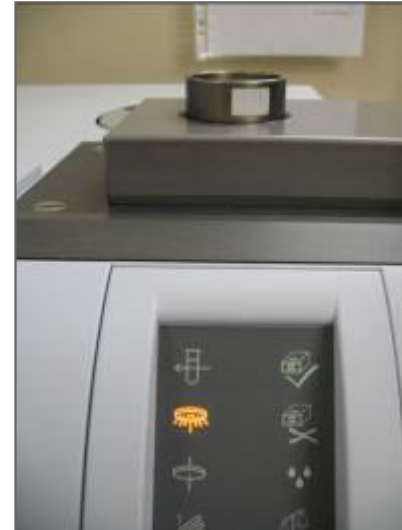
oleic, linoleic, palmitic, stearic acids

🌸 reference method ?

gas chromatography

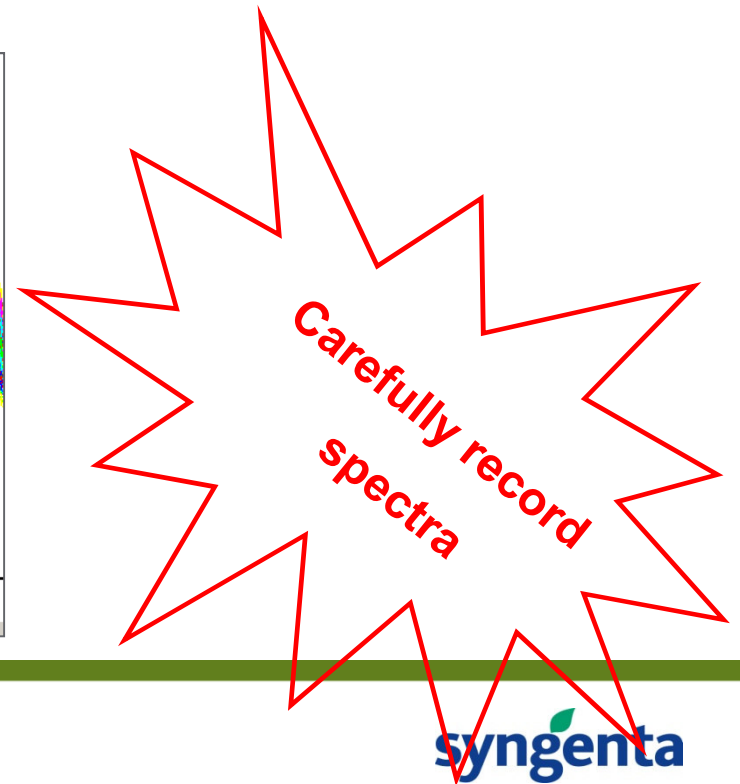
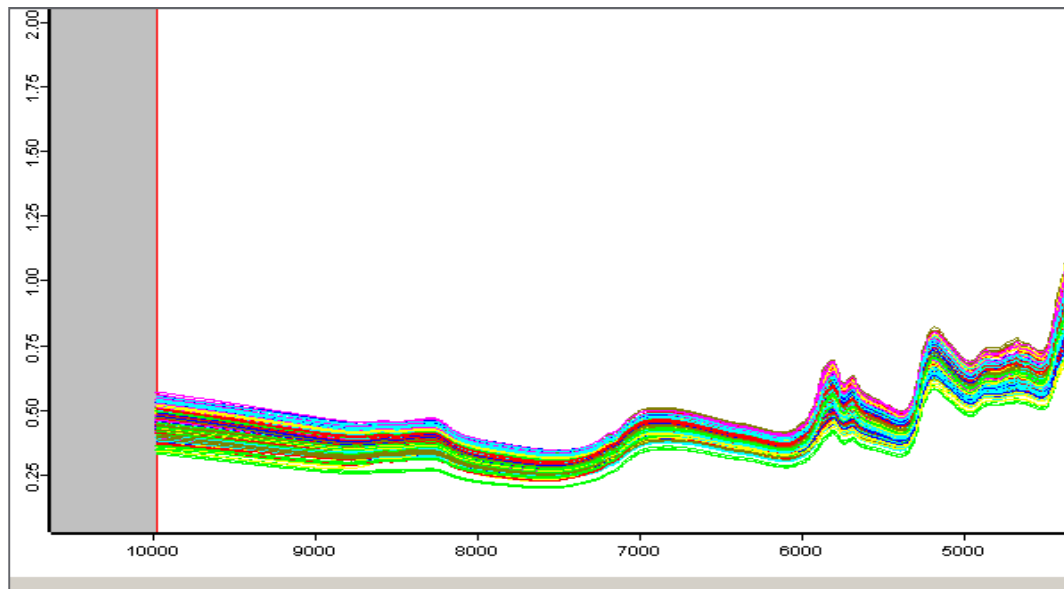
🌸 quantity ?

needs 3 to 5 g of ground seeds

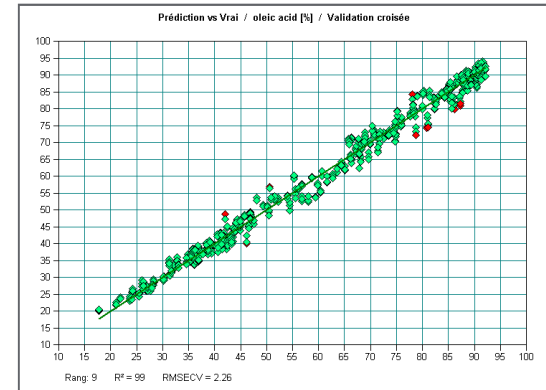
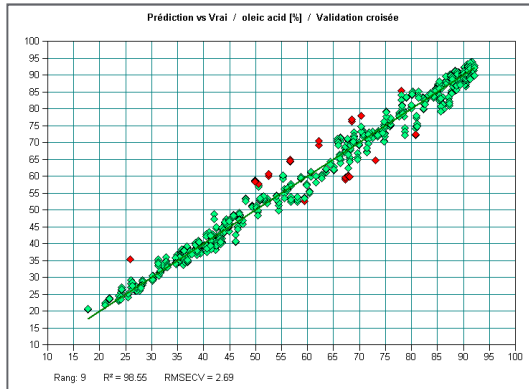
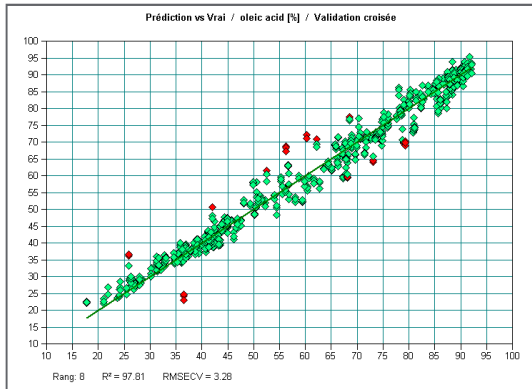


Element of protocol

- 🌻 what ? oleic, linoleic, palmitic, stearic acids
- 🌻 reference method ? gas chromatography
- 🌻 quantity ? needs 3 to 5 g of ground seeds
- 🌻 how many samples ? ...enough / calibration process : 250 samples
- 🌻 how many replicates? 3 replicates



Calibration process

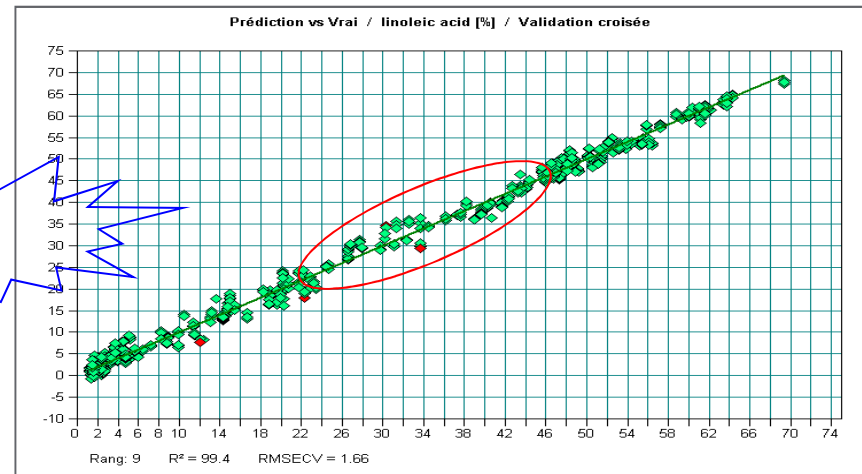
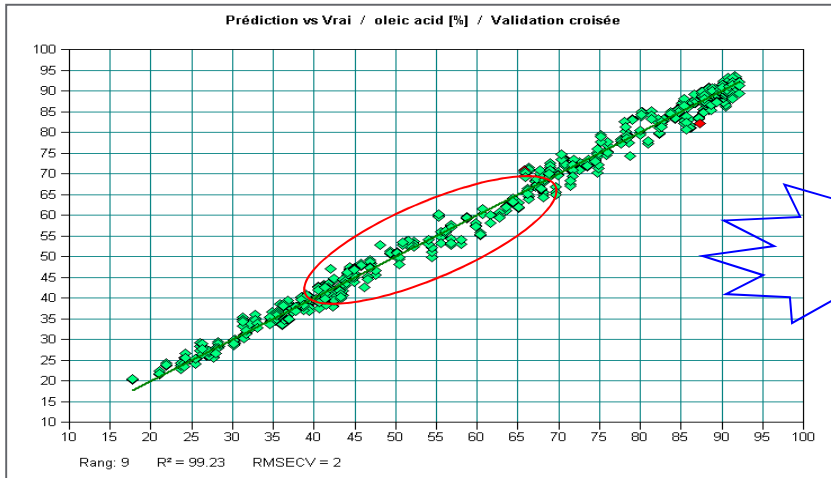


	R ² cal	RMSEE	R ² cval	RMSECV
whole	0,980	3,13	0,978	3,28
1st run	0,987	2,58	0,986	2,69
2 nd run	0,991	2,16	0,99	2,26

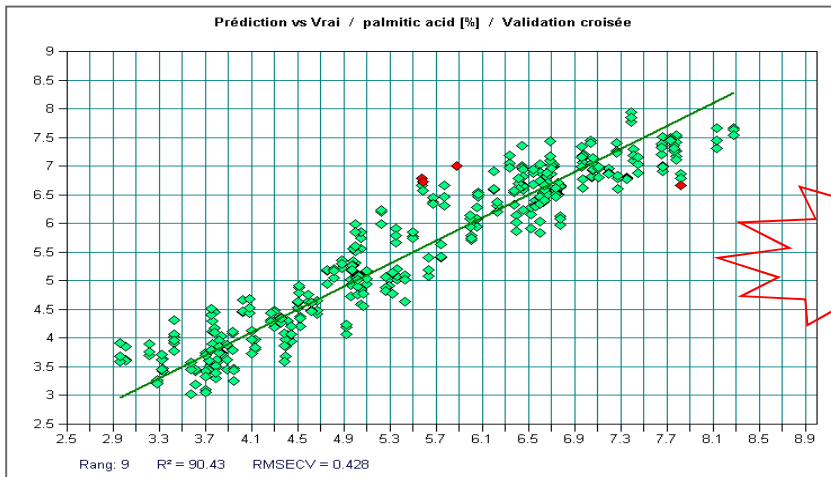
... ..

final	0,993	1,91	0,99	2,26
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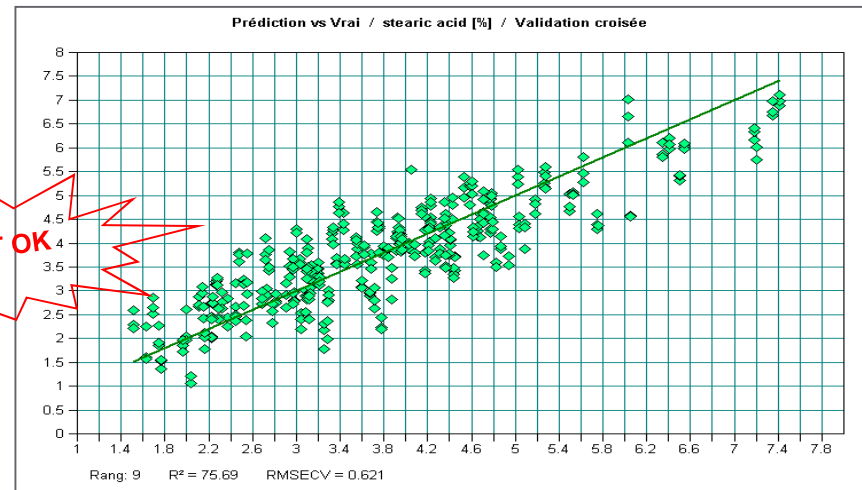
Finally



OK

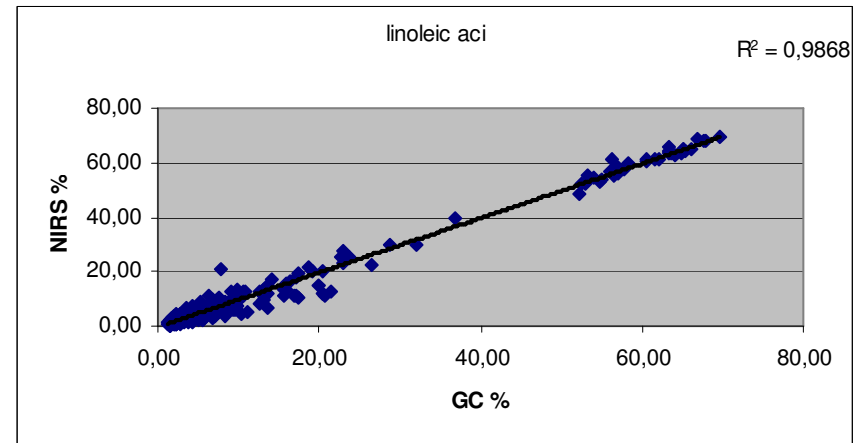
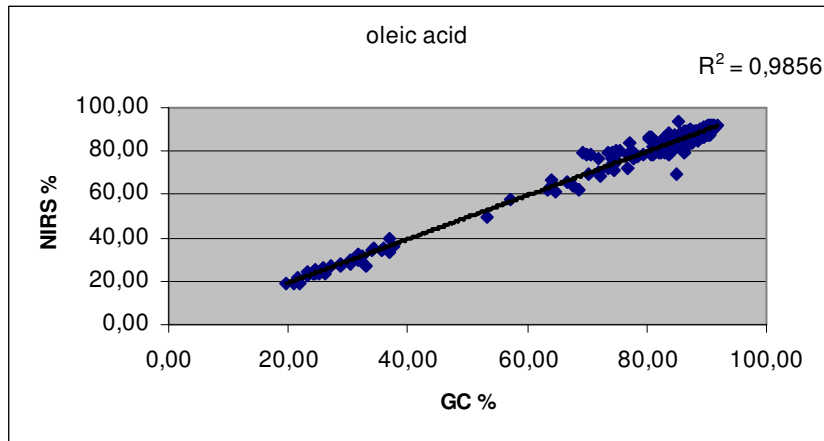


NOT OK



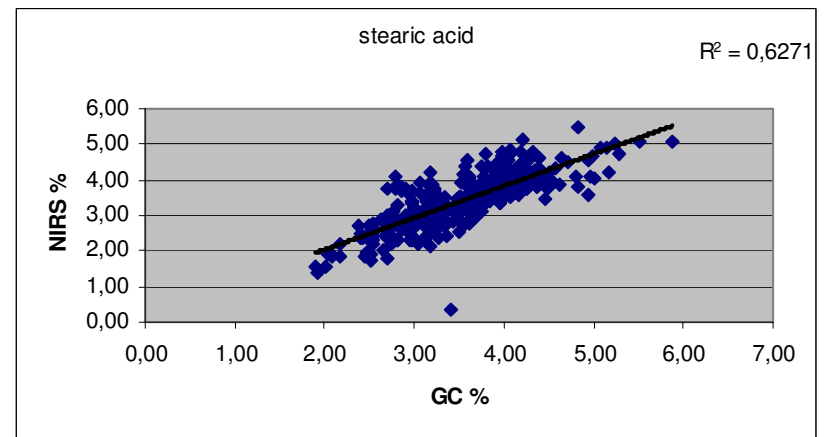
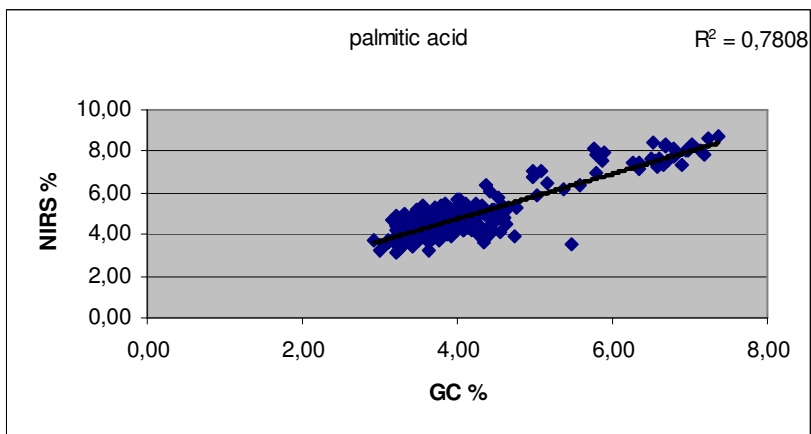
Validation

External validation



☺ Nice results : RMSEP ~2

☹ 45-80 % values



☹ Not nice : range too small for calibration

THANK YOU
FOR YOUR ATTENTION