

Dedicated Analytical Solutions

CALIBRATION UPDATES

Grain Network Meeting, Reims, March 16-18, 2016

Robin Malm



CONTENT

- ▶ Wheat flour DS2500
 - ▶ Wheat flour
 - ▶ Whole grain
- ▶ Sunflower seed DS2500
- ▶ Beans and pulses on Infratec
- ▶ Infratec Sofia
- ▶ Other calibration model work

WHEAT FLOUR DS2500

- ▶ Mature application on wheat flour
- ▶ Parameters
 - ▶ Ash
 - ▶ Moisture
 - ▶ Protein
 - ▶ Wet gluten
 - ▶ Water absorption
- ▶ How is Infratec doing?

DS2500

	SEP
Ash	0.024
Moisture	0.22
Protein	0.17
Wet Gluten	1.76
Water Absorption	1



Infratec

	SEP
Ash	0.05
Moisture	0.3
Protein	0.39
Wet Gluten	1.3
Water Absorption	1.1



WHOLE GRAIN DS2500

- ▶ Whole grain
 - ▶ Wheat
 - ▶ Rye
- ▶ Performance not as good as on Infratec!

DS2500

Wheat	
	SEP
Protein	0.35
Moisture	0.39

Rye	
	SEP
Protein	0.51
Moisture	0.44

Infratec

Wheat	
	SEP
Protein	0.28
Moisture	0.23

INFRATEC VS DS2500 WHEAT FLOUR AND GRAIN

▶ Infratec



- ▶ Very good on whole grain
- ▶ Many whole grain applications
- ▶ Can measure the main parameters on flour, but not as good as DS2500

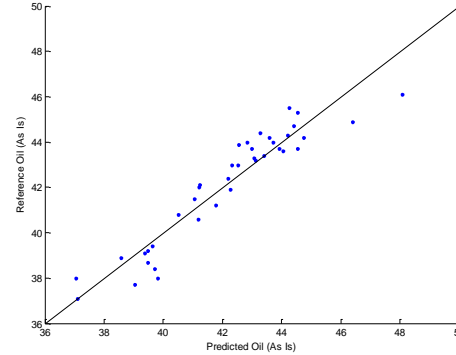
▶ DS2500



- ▶ Very good on wheat flour
- ▶ Can measure protein and moisture in wheat and rye, but not as good as Infratec

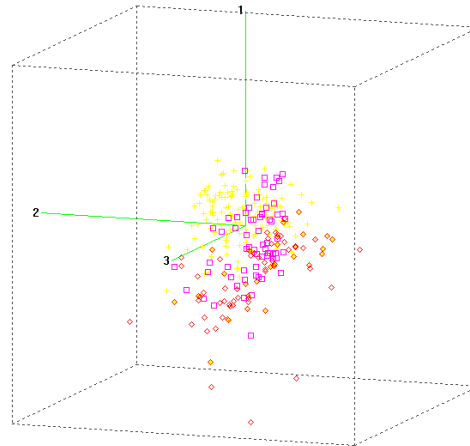
SUNFLOWER SEED INFRATEC

- ▶ Sunflower seed on Infratec
 - ▶ Oil, moisture
 - ▶ Ground samples (Knifetec)
 - ▶ Sunflower cuvette and Sample Transport Module
 - ▶ Oil SEP=0.84
 - ▶ Moisture SEP=0.52
- ▶ Status: Sales released



SUNFLOWER SEED DS2500

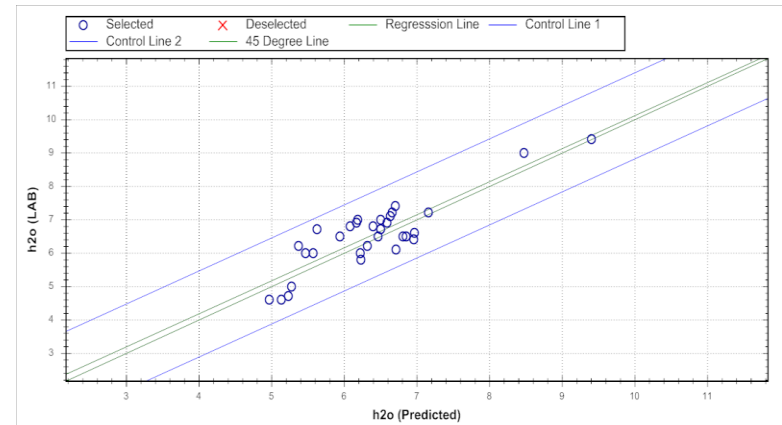
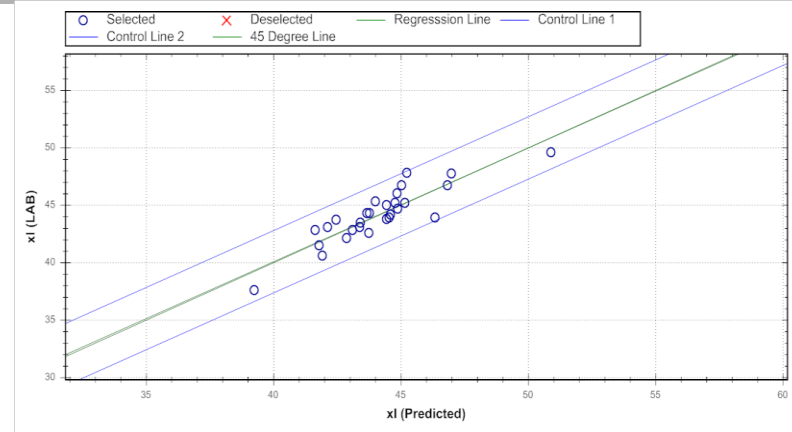
- ▶ Database of about 300 samples
- ▶ Samples from Russia, Bulgaria and Ukraine
- ▶ Reference data from three well performing laboratories
- ▶ Samples measured underground



SUNFLOWER SEED DS2500

- ▶ Results
 - ▶ Oil, SEP=1.1
 - ▶ Moisture, SEP=0.5

- ▶ Status of the application
 - ▶ Ready for market trial



SUNFLOWER SEED DS2500

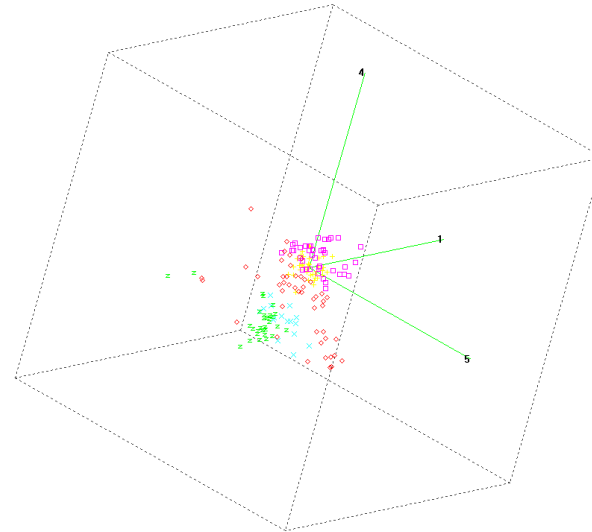
- ▶ What happens if we grind the samples?
- ▶ 65 samples measured at the same laboratory unground and ground
- ▶ Conclusions
 - ▶ Oil large improvement
 - ▶ Moisture same performance

	SECV	
	Ground	Unground
Oil	0.52	1.68
Moisture	0.49	0.52

BEANS AND PULSES INFRATEC

- ▶ Beans and pulses
 - ▶ Many different names
 - ▶ Large variation in shape and color
- ▶ Different beans and pulses combined in one database
 - ▶ Field beans
 - ▶ Chick peas
 - ▶ Lupins
 - ▶ Lentils

- ▶ ANN models built on the database
 - ▶ The ANN technique is powerful handling large variations

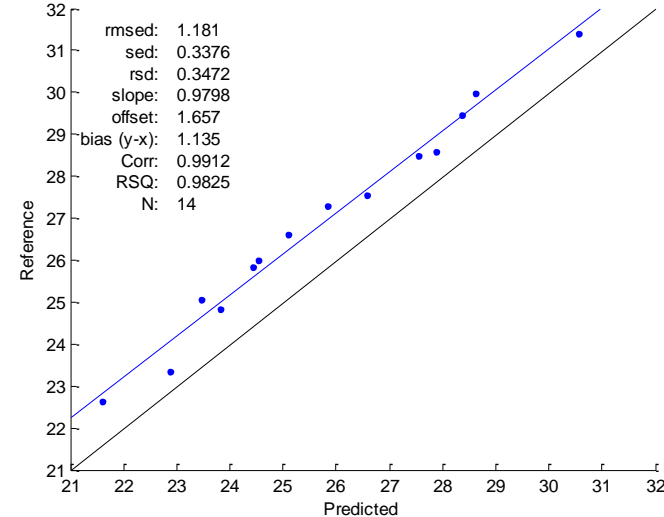


BEANS AND PULSES INFRATEC

- ▶ Two different applications
 - ▶ Beans and pulses
 - ▶ 30 mm path length
 - ▶ Lupins
 - ▶ 22 mm path length
 - ▶ Parameters
 - ▶ Protein, moisture

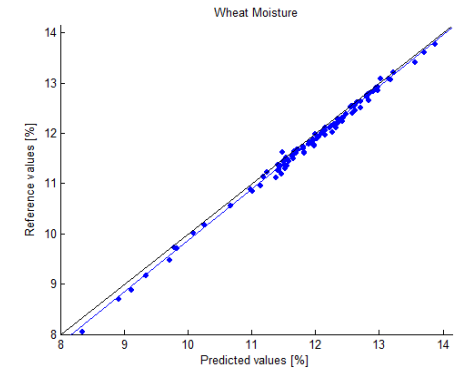
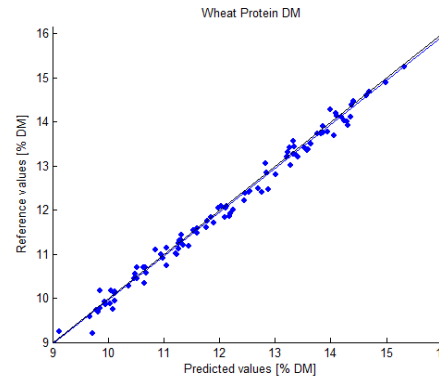
- ▶ Note: there is a different application for field peas

- ▶ Due to the large variations in beans and pulses
 - ▶ Validation
 - ▶ Slope and/or bias adjustment



INFRATEC SOFIA

- ▶ New updated sales released models
- ▶ Wheat
 - ▶ Protein, moisture
- ▶ Barley
 - ▶ Protein, moisture
- ▶ New models improved on transferability



OTHER NEW MODELS

- ▶ Infratec
 - ▶ Updated protein in wheat
 - ▶ Updated protein in barley
 - ▶ Updated moisture in green malt
- ▶ Infratec NOVA STM
 - ▶ Beer
 - ▶ Alcohol, Real Extract, Original Extract
- ▶ Infratec Sofia
 - ▶ Starter models for mustard seed India

CURRENT RUNNING UPDATES INFRATEC

- ▶ **Wheat**
 - ▶ Protein, starch, gluten
- ▶ **Barley**
 - ▶ Protein
- ▶ **Rapeseed**
 - ▶ Oil, moisture
- ▶ **Oats**
 - ▶ Protein, moisture
- ▶ **Field beans**
 - ▶ Protein, moisture

DATA FOR THESE
UPDATES ARE
WELCOME!