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# Forage analyses, - cheaper and faster

## Clasel is analyzing feed and forage on the farm



### **NIR analyses on site if required!**

NIR technology for analyses of feed and forage has been well known already for many years and has already significantly speeded up the turnover time from sampling at the farm till the analyses result is found in the database from where it can be used for a feeding plan. Now the advisors at Clasel in Northwest France has moved one step further by implementing on-farm analyses of feed and forage.

Though by far most of the analyses are still carried out at the home premises in Laval the unit can easily be transported in its box to the farm and here the analyses of interest can be carried out within minutes tells Anaëlle Bruchet who has now been working with the unit for almost 1 year. This may be convenient if a milk producer suspects the ration for the cows is creating problems and therefore request immediate guidance of what to change she continues!

### **Developed and tested in cooperation with an Italian company**

The Agri NIR analyzer is developed by the Italian company Dinamica Generale. Clasel has tested the unit for one year in order to further work on the calibrations already present on the analyzer when delivered. In addition Clasel has established a system to monitor the calibrations and to secure correct results.

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In order to further improve the precision of the various calibrations, and especially to update them every year Clasel now sells a solution to the dairy farmers where he purchase 5 NIR and 1 chemical analyses (or 10 and 2 if two silos) in a package. In this way the farmer get 1 (or 2) more precise chemical analyses including also the concentration of the major minerals plus 4 or 19 NIR analyses carried out whenever requested throughout the feeding season.

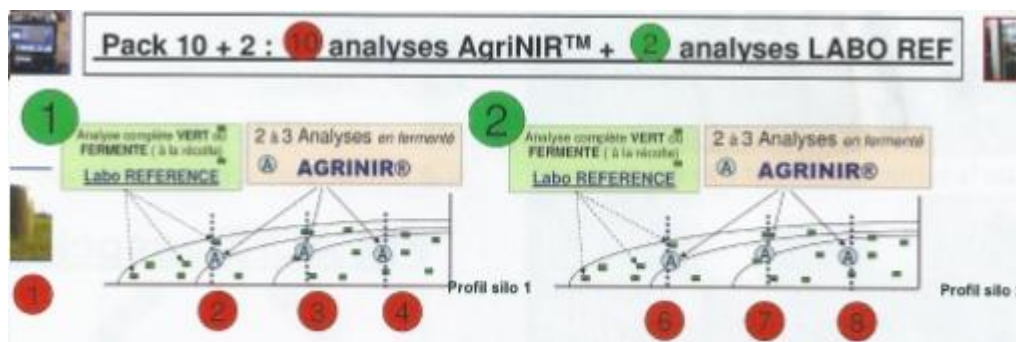


Figure 1. Illustration of proposed sampling from silo 1 and 2. Green dots are ref. analyses, red dots NIR

And Clasel gets the possibility to constantly have their NIR calibrations updated. When buying the analyses in a package the price per analyses gets below 15 Euro each, and hence the request has been good. The farmers appreciate the quick reply (2-5 work days) and that they in this way can get an update on the quality of the silage they are feeding to their herd throughout the year. Experience is that quality often changes as they move through the silo. Due to more cuts of varying quality stored on top of each other or simply due to storage conditions over time. See figure 1

### Analyses are sold in packages

The quality of the feed and forage is one of the factors influencing the production of milk and the health of the cows most. The averagedairy farmers has a good feeling for the quality of their forage. But the milk yield gets higher and higher it is crucial to be in control when changing the ration. Especially when changing from one year to the next, - but also throughout the season. Most farmers in this region store more than one cut of silage in each silo, - especially grass silage, so in order to constantly monitor the quality of the silage as he is moving through the silo it is relevant to carry out several analyses per silo. He just have to fill up a plastic bag (see figure 2) where almost all information is given already, and send it to Clasel. Within a few days the results are received in the mail box at the farm and by the feeding advisor.



Figure 2. Bag for shipment of sample

Therefore Clasel is offering a package with either 10 NIR analyses per year. The milk producer receive 5 or 10 preprinted plastic bags when ordering the analyses and just has to fill up the bags with silage whenever he want to have a new analyses carried out, and send it to Clasel in Laval.

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### What can be analyzed for?

All kinds of silages and mixtures can be analyzed as well as most concentrates. Parameters analyzed are % moisture, starch, protein, ADF and NDF, ash and crude fat and a calculated digestibility. Raw results of a corn silage analyses can be seen in figure 3.

In order to constantly monitor performance of the Agri NIR's various reference samples are kept frozen. At regular intervals a standard sample is analysed with the AgriNIR.

Usually 3 repeated analyses is made of the same sample. Between each analyses the sample is shaken well by sorting and reentering the sledge where the sample is placed. In this way the best possible accuracy is reached. Typical accuracy towards reference results and typical repeatability (analysing the same sample several times) can be seen in table 1.

	Accuracy (%)
Moisture	2
Starch	3
Crude protein	3
ADF	3
NDF	3
Ash	3
Crude fat	3

Table 1: Accuracy, specifications from AgriNIR

	ZAsIs	ZDM
Moisture:	58.9	41.1
Starch:	14.4	34.9
Protein:	2.9	7.1
ADF:	8.4	28.4
"DF":	16.9	41.8
Ash:	1.3	3.2
Crude Fat:	1.3	3.1
Digestlib:	38.6	74.5

Fig.3 AgriNIR analyses