

# Manure evaluation in dairy cows

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## Materials and Methods

We have examined how manure evaluation could be used in Swedish Dairy production.

Manure from Kungsängen research station and 9 other farms have been analysed.

The following parameters in the manure have been analysed:

DM, consistency, pH, starch, ash, smell, colour, particle size (wet sieving) and occurrence of whole grain kernels (wet sieving).

**Manure evaluation is a cheap and easy way to evaluate how the ration and the cow work together**

## Wet sieving of manure

250 grams of fresh manure was wet sieved, 0-150 grain kernels were found.

The kernels must be squeezed to determine if they are whole or not.



*Left:* wet sieved manure.

*Right:* the silage that the cow was fed.

Almost no particles larger than 2 cm were found in the wet sieved manure.



## The pH-value and the starch content in the manure

The pH-value in the manure was in most cases 7.0 or higher (variation 6.2–8.0). It increased when the cows received more roughage.

The starch content in the manure was in most cases around 1 % of the DM (variation 0–6 %).

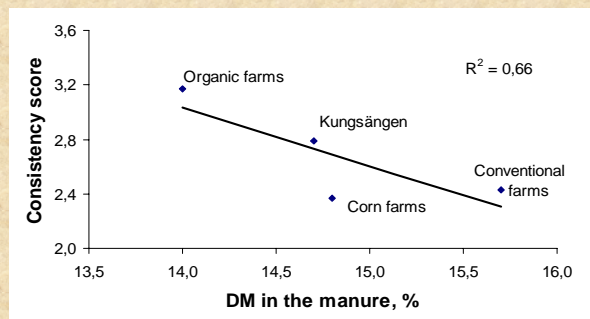
The starch analyses indicate that Swedish cows utilize their concentrate well, even when maize silage is fed.

There was a negative correlation between the pH-value and the starch content in the manure. Possibly the pH-value could be used as an indicator of the starch content.

## DM and consistency in the manure

A high percentage of roughage in the diet can result in a manure that looks firm but that actually has a lower DM-content than a looser manure from a cow that consumes more concentrate.

This probably depends on the fact that manure from cows consuming much roughage contains more cell wall particles. The cell wall particles have the ability to absorb much water, which gives the manure a firm appearance.



The consistency and the DM in the manure. Every point is an average from a group of cows.

## Mucin casts in the manure

Mucin casts were found in manure from cows that seemed healthy.

Are those a part of the normal function of the gut or an indication of some gut damage?

The mucin casts had different appearances, some were shapeless lumps and other consisted of thin membranes.



Shapeless lumps



Thin membranes