The Co-operative Difference

Fonterra Dairy for life

Senses / Organoleptic Assessment Fact Sheet

A senses test, or organoleptic assessment, measures the smell and look of raw milk. It involves visually checking the milk for free fat, coagulation, or colour from blood or colostrum and smelling for odours such as feed taints or bacterial action (sourness).

An uncharacteristic assessment can result in downgrades.

What to look for on-farm

- Crop feed or weeds that cause sour, rancid or chemical smells
- Blood or colostrum that changes the colour or smell
- Foreign matter or dirt from poor filtration
- Poor temperature or silo management enabling excessive bacterial growth

The screening and confirmation process at the lab

At MilkTestNZ, one person will screen the samples and set any aside that are suspect. To confirm, a team of two people will identify and quantify the odour and colour. There must be consensus between the confirming team before a senses downgrade is issued.

How to prevent senses downgrades

Early intervention is the best tool you have for preventing downgrades:

- Ensure good grazing management by feeding crops after milking to avoid strong-smelling crops affecting milk
- Control weed growth in pasture and supplements
- Maintain good pre-cooling and refrigeration
- Maintain good cow condition
- Check your milking management practices to avoid blood, colostrum and foreign matter getting into milk

Prevention by odour type

Feedy - onions and/or fruity: Associated with the feed cows have been eating. Strong flavoured feeds such as crucifers (turnips, swedes, etc) may produce a strong feed flavour in milk. Strong feed taints have been traced back to fermented kiwifruit, onions, apples and cabbages. It is recommended that strong odour feeds are not fed to the herd before milking. Some odours can be detected from feeds fed up to five hours before milking. Some feedy odours can be associated with an abrupt change from dry feeds to lush spring pasture.

Cheesy: The milk sample has an odour much like that of parmesan cheese. In more extreme cases the smell could be described as similar to a vomit type odour. This is normally a result of churning, intense agitation or temperature fluctuation.

Sour or rotten, acidic: This is a sour odour associated with milk that has had excessive bacterial degradation. There are a number of causes including milk freezing, milk not being agitated, chiller failure, and the chiller not being turned on for a couple of hours.

Cow: Strong smell of cows, cow effluent or farm dairy odour. There is literature to suggest that cows suffering from ketosis or acetonemia produce milk having a cow-like odour. It can also be caused by acetone present in silage and other feeds.

Fishy: The milk smells significantly like fish. Most specifically the milk has an odour much like that of scampi or prawns and is most commonly associated with oxidation. This can be bacterial oxidation or mechanical oxidation.

Chemical: The milk has a chemical odour to it. This is normally caused by chemical cleaner residue from the plant.

Oxidised: Cardboard-like odour or flavour often associated with milk that has been exposed to sunlight, or has been excessively aerated.

Stale: Milk that has been kept too long and has a stale, flat odour. Flat milk can also be derived from cows during the drying off period. Check that the milk has not been sitting in the vat for too long.

Buttery: Milk that smells like butter. The cause of this odour in milk can be from bacterial sources, in particular Lactococcus lactis subspecies bv. diacetylactis and Leuconostoc cremoris. Diacetyl is the component which gives butter its characteristic odour.

Musty: A musty odour which is often the product of mould contamination in forage. Check all feed for any musty odours.

Rancid: The milk has a rancid odour like rotting butter. This is a similar odour to cheesy but more pronounced. The reasons and the cause tend to be the same as for the cheesy category.

Skatole: The skatole odour is very similar to the musk produced by ferrets to mark their territory, and can be smelt if a ferret has urinated close by. The cause of this odour is due to liver damage of the animal. It has not been present for a number of years but can be indicative of animal health problems.

Cress: There's a characteristic peppery or mustardy taste and odour, more readily detected by preheating the milk. The odour can be obtained by crushing the land cress plant itself. Normally transferred through to the milk via ingestion by the cow. This is rarely seen these days. Peppercress produces an odour described like burnt rubber. This odour is transferred through to milk via ingestion by the cow.

Training

PrimaryITO offers a Milk Quality Programme that aims to improve on-farm skills, knowledge and procedures to reduce the risk of downgrades while increasing the profitability of your dairy operation.

This course has been developed in conjunction with Fonterra.

To arrange training for you and your team, contact PrimaryITO on 0800 20 80 20 or visit their **website**.

Support

If you cannot determine the cause of the test result or you receive downgrades, call the Farm Source Service Centre on 0800 65 65 68. Depending on the duration and severity of the issue, they will organise an on-farm trace back and take you through the Milk Quality Support Programme.

Fonterra will refund up to the total amount of the deductions made under Clause 9.5 of the Fonterra Farmers' Terms of Supply ("**Terms of Supply**"), in the current season, to cover the cost of help from a Fonterra approved service provider to solve milk quality problem.

Please refer the Terms of Supply Clause 9.7 for more information.