



Test to detect milk fraud

If cows are treated with growth hormones, their milk production increases by a quarter. But this treatment is banned. Nathalie Smits (Wageningen Food Safety Research) developed a test to detect such abuses, research for which she received a PhD this week.

Smits uses the antibodies that cows produce in response to the exogenous growth hormone rbST. The product was developed in the 1980s by the chemicals giant Monsanto. It is banned in Europe but not in the US or Asia.

Actually, it is surprising that cows produce antibodies in response to the product because the hormone only differs in one of its 191 amino acids from the cow's natural growth hormone. LG Life Sciences even sells an exact copy of the substance found naturally.

Biomarker

Smits suspects that the injection itself triggers the cow to produce antibodies. 'That property is the basis for the milk screening process I have designed. The antibodies end up in the milk and I use them as a biomarker indicating the use of growth hormones.'

'The antibodies end up in the milk and I use them as a biomarker'

Legal proof requires direct evidence of the growth hormone itself, however. In the blood, because LG's product does not get into the milk. Rabbit antibodies are used to

fish the growth hormone out of the blood, after which it is identified.

That is all that is required from a scientific perspective, but not for legal purposes. Smits: 'It lets you incontrovertibly demonstrate the presence of Monsanto's growth hormone but not that of LG because it is identical to the cow's own growth hormone. So you can't say for certain whether the hormone was injected or produced by the cow itself.' ^{RK}