SUMMARY

There is an increasing interest in the production of Swedish milk from feeds of Swedish origin, which are either home-grown or produced in the neighbourhood, in order to ensure safe milk quality from the salesman back to the production of individual feeds. In addition, previous studies have indicated that the negative effect of ammonia emissions from manure can be reduced if the crude protein level in the dairy cow diet is reduced by one or two per cent.

In a previous short term study (a Latin square model of 5×6 weeks), the effects of feeding cow concentrates mixtures of Swedish origin were compared to feeding with a conventional protein blend, which was largely based on imported protein feeds, such as soybean meal. When compared at the same total protein level, the Swedish diets resulted in the same amount of milk being produced, with an increase in the fat and protein content, in comparison to that produced with the conventional feed. When the protein level was dropped from 17% to about 13.5% in the Swedish origin diets, the milk production was reduced. Since no long-term effects could be observed in that short-term experiment, a second study of 50 first lactation cows was performed, which lasted for two lactations. The experiment was not performed on organic feeds, but the results would also be of interest for that type of production.

The heifers were divided into two groups before calving. Both groups received the same basic feed consisting of clover grass silage, super-pressed beet pulp silage, straw, molasses, and some concentrate mostly based on grain. One group (control) was fed the standard diet with a conventional protein mixture, which was given in the experimental herd at Alnarp. The other group (experimental) received a protein concentrate that included only feeds produced in Sweden, such as dried molassed beet pulp, rape seed, rape seed meal, peas, linseed cake and breweer’s grain. The total crude protein level in the control diet had a mean of 17% in DM, while it was 15% in the Swedish origin diet.

During the first lactation, the “Swedish cows” produced 9% less milk than the control cows. On the other hand, the milk fat and protein contents were significantly higher in the milk from the Swedish group. In the second lactation, due to such problems as mastitis, accidents and infertility, the number of cows was reduced. A total of 27 cows fulfilled their second lactation. Now, the Swedish group produced 7% more milk than the control group, and still with the higher fat and protein contents. The udder health, expressed as somatic cell count, was impaired during this year, especially in the control group. This might help to explain the divergent results. Perhaps if the dietary crude protein levels had been equivalent in the groups the observations would have differed. However, taking into
consideration the observations of the present study and that of other studies using home-grown feeds or feeds from the neighbourhood, it is noted that there would be a likelihood of some milk yield depression, especially if the feed protein levels are kept low due to environmental considerations.