



# Linseed supplementation of dairy cows improves immunological quality of colostrum

## Problem

To prevent health problems, calves should be fed only high-quality colostrum containing at least 50 g/L of immunoglobulins.

## Solution

Cows should get 300 g linseeds (rich in Omega-3 FA) daily at least 30 days before calving until 30 days after calving.

## Impact

The colostrum of supplemented with linseed cows showed higher immunoglobulin content, i.e., over 50 g/L on average.

## Practical recommendation

The use of fatty additives in the form of linseeds is a procedure that can easily be put into practice, enabling the beneficial modification of the immune components of the colostrum. Linseeds have to be fed raw and unprocessed once a day, 300 g per cow. With an average absorption of immunoglobulins by the intestines (20-30%), the calf should consume 100-200 g of Ig G within 6 hours after calving, which is guaranteed by an appropriate passive transfer. This will promote calf health.

## Applicability box

### Theme

Improvement of colostrum quality

### Keywords

Colostrum, Linseed, Dairy cows

### Geographical coverage

Each dairy farm

### Application time

30 days before and 30 days after calving

### Required time

Time of feeding

### Period of impact

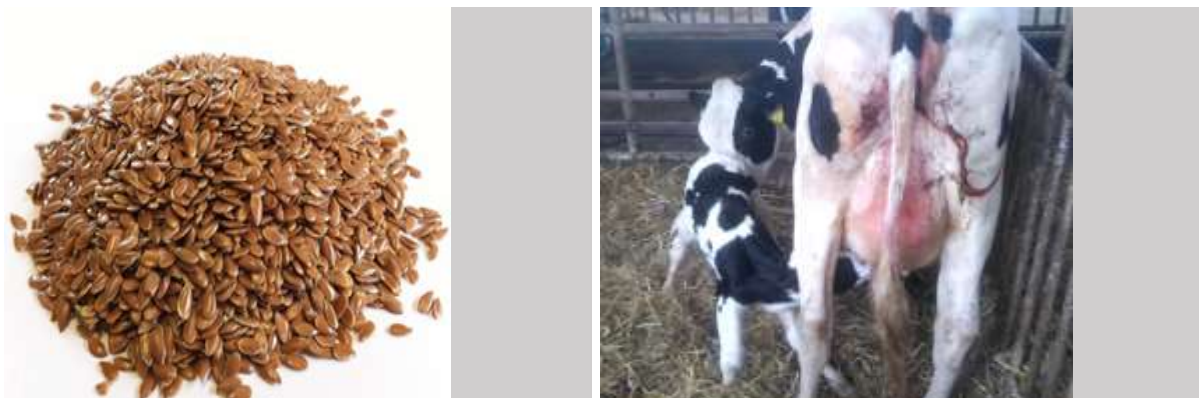
Supposedly long term effects

### Equipment

No special equipment needed for supplementing

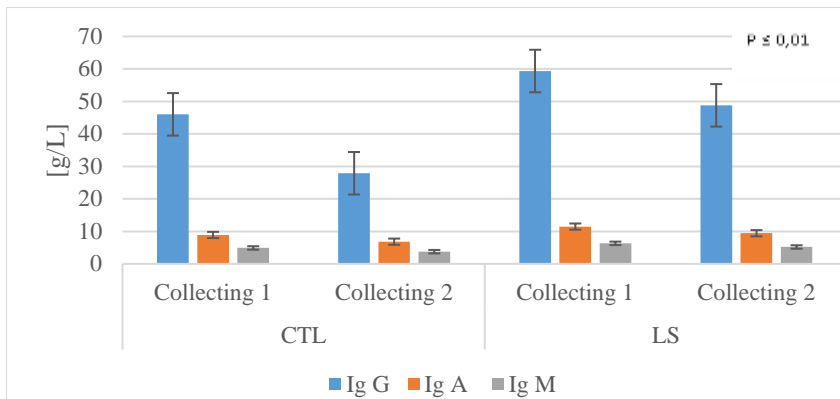
### Best for

Cattle and possibly other ruminants



Picture 1 (left): Linseeds which cows were additionally fed

Picture 2 (right): The first colostrum drinking just after calving



**Figure 1: Influence of the applied linseed supplementation on the formation of immunoglobulins in the first two colostrum samplings (CTL – control group, LS – supplemented group)**

## Further information

### Further readings:

1. PUPPEL K., GOŁĘBIEWSKI M., GRODKOWSKI G., SOLARCZYK P., KOSTUSIAK P., KLOPČIČ M., SAKOWSKI T., 2020: Use of Somatic Cell Count as an Indicator of Colostrum Quality. *PlosOne*, 15(8):e0237615. <https://doi.org/10.1371/journal.pone.0237615>.
2. PUPPEL K., GOŁĘBIEWSKI M., KONOPKA K., KUNOWSKA-SLÓSZARZ M., SLÓSZARZ J., GRODKOWSKI G., PRZYSUCHA T., BALCERAK M., MADRAS-MAJEWSKA B., SAKOWSKI T., 2020: Relationship Between the Quality of Colostrum and the Formation of Microflora in the Digestive Tract of Calves. *Animals*, 10, 1293; doi:10.3390/ani10081293.
3. PUPPEL K., GOŁĘBIEWSKI M., GRODKOWSKI G., SLÓSZARZ J., KUNOWSKA-SLÓSZARZ M., SOLARCZYK P., ŁUKASIEWICZ M., BALCERAK M., PRZYSUCHA T., 2019: Composition and Factors Affecting Quality of Bovine Colostrum: A Review. *Animals*, 9, 1070; doi:10.3390/ani9121070.
4. WĄSOWSKA E., PUPPEL K., 2018: Changes in the Content of Immunostimulating Components of Colostrum Obtained From Dairy Cows at Different Level of Production. *Journal of the Science of Food and Agriculture*, 98(13): 5062-5068.

### Weblinks

- Check the [Organic Farm Knowledge Platform](#) for more practical recommendations.

## About this practice abstract and ProYoungStock

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**Name of the Project:** Promoting young stock and cow health and welfare by natural feeding systems. The project is running from April 2018 to September 2021 as part of the CORE Organic Cofund.

**Project website:** <http://projects.au.dk/coreorganiccofund/research-projects/proyoungstock/>

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