



# OMEGA MIX

Among common oilseeds, flaxseed or linseed contains the most Linolenic acid (omega-3) (Table 1). Today, it is proved that omega-3 and omega-6 fatty acids have many benefits in different stages of Lactation cycle. Similar to monogastric animals, in order to get the desired result, especially in the first phases of lactation, the optimal ratio of omega-3 and omega-6 in cattle's diet must be around 4:1. Without using foods rich in Linolenic acid, this ratio will not be achieved and instead we have the ratio of about 6-7:1. Extensive research on this ratio in dairy cows in the beginning of their lactation cycle reveals that the lower ratio, results in more milk production. Moreover, reducing this ratio, increases Linolenic acid in the milk fat (4-6 times), which helps prevent cardiovascular diseases and improve the quality of dairy products that evidently affects human health.

**Table 1 – Relative Comparison of Oilseeds in Terms of Unsaturated Fatty Acid**

	Soybean	Canola	flax	Sunflower
Total Fat (%)	19-21	28-32	35-40	47-50
Linoleic acid (Omega-6)	50	30	14	60
Linolenic acid (Omega-3)	7	7	50	0
Omega-3: Omega-6	1:7.14	1:4.3	1:0.28	1:60

It is to be noted that the table above indicates approximate values and depending on the sources, the numbers and ratios may slightly change.

**A number of valid studies have been carried out about positive effects of omega-3 on cattle reproduction. In short, omega-3 fatty acids are precursors of anti-inflammatory agents, while omega-6 fatty acids are precursors of pro-inflammatory agents. It is recommended that in transition period, omega-6 ration in cattle's diet is increased in order to produce pro-inflammatory agents which are necessary for calving process and improvement of immune system against tensions. On the other hand, in the lactation yield period, it is necessary to increase omega-3 ration to reduce inflammation and improve reproduction.**

Omega Mix<sup>®</sup>, containing the ingredients listed in Table 2 below, helps you reduce the ratio of omega-6 to omega-3 in cattle's diet to see how it affects milk production (with higher quality of nutrients) as well as reproduction.



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Table 2 – Chemical Ingredients of Omega Mix®

NE <sub>L</sub> (Mega Calories in one Kilogram)	2/3
Protein (%)	25
Fat (%)	35
NDF (%)	14.2
ADF (%)	8.4
NFC (%)	19.9
Omega-3 (%)	15.4
Omega-6 (%)	8.8
Omega-3:Omega-6	1:0.57

Similar to other oilseeds, the fatty acids of which contain a number of double bonds (PUFA: polyunsaturated fatty acid), raw flaxseeds have anti-nutrients and produce negative effect on fiber digestion in rumen. Thermal processing of oilseeds by denaturation of protein matrix around fat granules in flaxseed helps protection and smooth passing of fat from rumen. This way, negative effect of polyunsaturated fatty acids on fiber digestion is controlled and post ruminal digestion of these fatty acids will be made possible for ruminants. Another advantage of thermal processing of oilseeds, such as flaxseed, is increase in the amount of bypass protein in dairy cows. However, there is 35% possibility that the raw seed is egested if it is not ground properly.

- Omega Mix® is recommended for fresh and high producing cows.
- Omega Mix® could be used to the amount of 8 percent concentrate.

Presentation: 25 kg.