

# NUTRITION GUIDE

## FAT: RUMEN-PROTECTION

**Fat is an essential nutrient in an animal's diet and must be balanced with other nutrients such as protein and starch to ensure maximum production is achieved from a diet.**

- Dairy cows have a very high requirement for fat for milk fat production.
- Fat is the highest energy nutrient available to increase energy supply in diets.

### Main sources of fat in the diet

- Vegetable oil (100% fat) – soya, rape and palm are common
- Fish oil (100% fat)
- High-fat ingredients – brewer's grains (10% fat) and distiller's grains (10-15% fat)
- Fat supplements



### Increasing fat in diets

- Increasing fat by adding vegetable or fish oils, or ingredients such as brewer's grains or distillers products, can lead to problems in the rumen and poor animal performance.
- The oil in these products is released in the rumen causing an oil 'slick' which coats the fibre particles and prevents them being broken down and digested in the rumen.

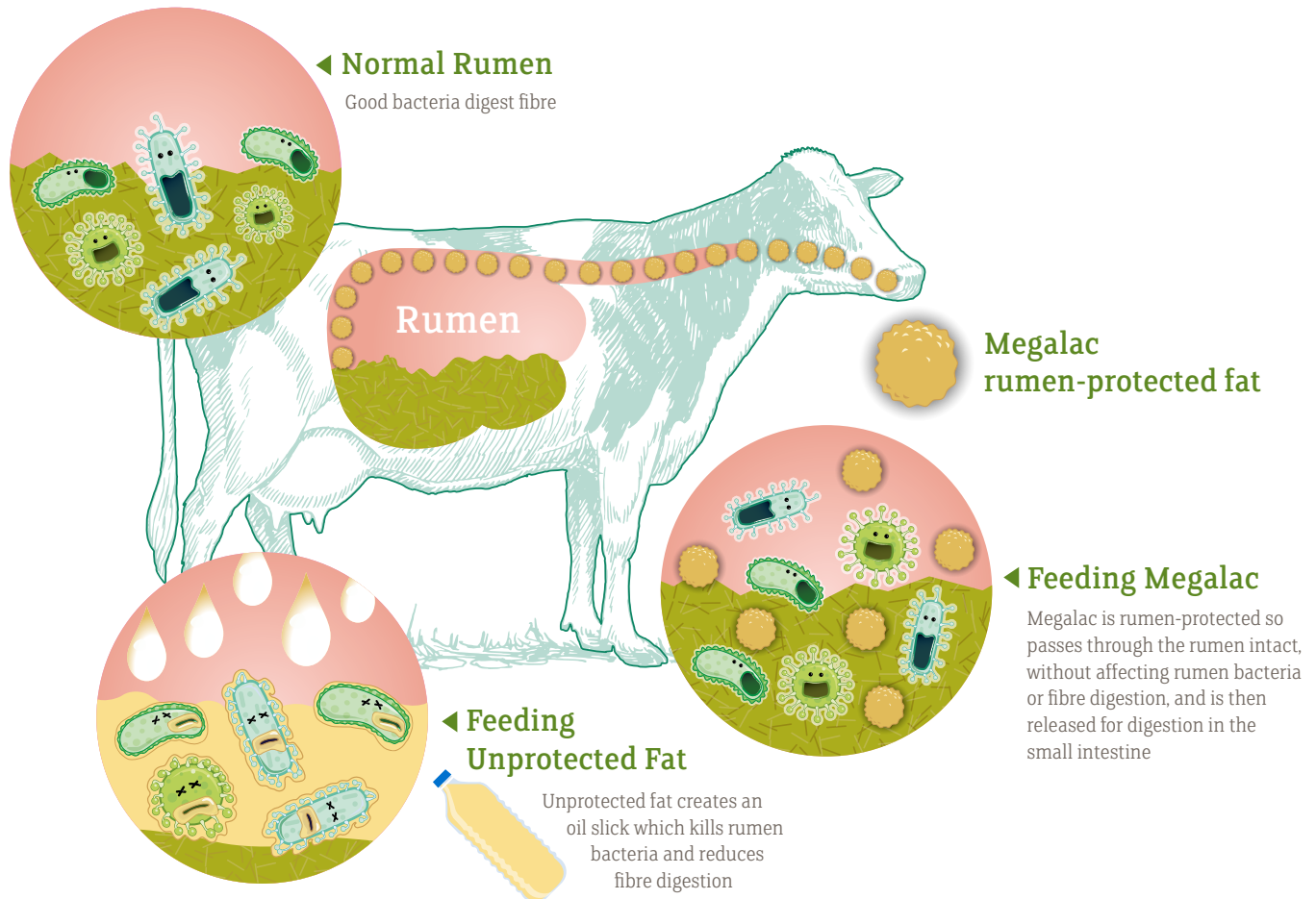
### Fat supplements

- Many different commercial fat supplements are available (typically 84 to 100% fat)
- Most supply fat in 'rumen-protected' form

### Rumen-protected fats

- Rumen-protected sources of fat are those which pass through the rumen unchanged and avoid the undesirable effects on rumen fibre digestion associated with traditional high-fat ingredients (e.g. vegetable oil).
- These fats are broken down in the small intestine where the fat is released for use by the animal.

# Benefits of rumen-protected fat



## Types of rumen-protected fat

There are several different types of rumen-protected fats on the market and products should be chosen to meet the specific requirements on farm.

**Calcium salts** – for example Volac Wilmar's **Megalac** rumen-protected fat.

- The fat in this product is reacted with calcium to produce solid granules which are insoluble in the rumen. Targeted primarily to increase milk yield and cow fertility.

**Hardened fats** – for example Volac Wilmar's **Mega-Fat 88**, **Mega-Fat Extra** and **Mega-Energy**.

- These fats have high melting points (typically around 60°C) so the supplements remain solid when passing through the lower temperature in the rumen (around 37°C). Targeted primarily to increase milk fat %.

## THE CONCLUSION

**Rumen-protected fats** are a **safe method** of increasing diet fat for dairy cows and other ruminants.

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