

What's in the bag - calf milk replacers

Price differences in milk replacers can be due to differences in ingredients, manufacturing technology and nutritional quality. It is important that producers understand these differences and make informed decisions.

It is difficult to assess milk replacer quality from the label. The only legal requirement is that ingredients are listed in descending order of inclusion. Generally, higher quality ingredients are more expensive.

The constituents usually listed are crude protein, fat, fibre, ash and sometimes moisture. Milk replacer should contain 20-26% crude protein and 16-20% fat to achieve optimal growth rate in early life.



Protein

Protein is necessary for tissue growth. Protein sources in milk replacer can be milk based (e.g. dried skimmed milk, dried whey, delactosed whey, casein), egg based or plant based (e.g. soya, wheat gluten, pea). Calves are better able to digest powders with milk-based proteins, particularly those less than three weeks of age.

Skim milk-based powders are typically around 80% casein and 20% whey. The casein forms a clot in the abomasum and is digested like whole milk. Whey-based powders are digested in the small intestine and do not form a clot in the abomasum due to the absence of casein.

Traditionally, it was thought that milk replacers which did form a clot were inferior and responsible for scours in young calves. Recent research does not support this and suggests that poor performance of calves on some milk replacers is more to do with the ingredients and the age of the calf.

Oil and fat

Generally, vegetable fats (palm oil, coconut or soybean) have similar digestibility to milk fat in calves over two weeks old. For calves under two weeks of age, vegetable fats may increase the risk of scour.

Fibre

Fibre is an indicator of protein quality:

Products with less than 0.15% fibre contain milk or egg

Fibre levels over 0.20% indicate inclusion of plant proteins

Ash

Ash indicates the overall level of minerals. The ash content should not be higher than 8%.

It is important to choose a milk replacer that will deliver the target growth rate of at least 0.8kg/day up to weaning. Maintaining consistency of product and a high level of hygiene when feeding is critical. Always read the label and mix milk replacers according to the manufactures instructions.

For more information, see the AHDB Dairy factsheet on [calf milk replacers](#)