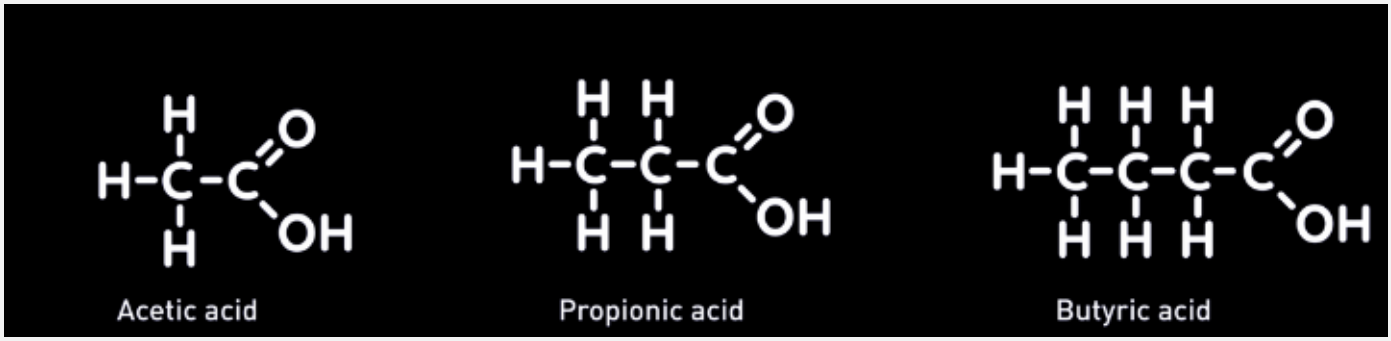
Volatile Fatty Acids (VFAs)

Volatile fatty acids (VFAs) are crucial energy sources for ruminants, produced through microbial fermentation in the rumen. These short chain fatty acids, primarily acetic, propionic, and butyric acid, are absorbed through the rumen wall and provide sheep/goats with the majority (~70%) of their energy needs. The type of diet (e.g., forage vs. grain) can significantly impact the proportions of the different VFAs produced in the rumen. For optimal rumen health, a balanced profile of volatile fatty acids is essential. A typical ratio for a roughage-based diet is 65:25:10 while a concentrate-rich diet might shift the ratio towards 50:40:10



Acetate is a by-product of fiber fermentation and is important for fat synthesis, especially for dairy sheep/goats. It is a building block for milk fat. Ruminants on high-forage diets tend to produce more acetate relative to propionate. Too much acetate can lead to problems.

Propionate is a precursor for glucose production. It is produced from the breakdown of starch and some sugars. Higher grain intake leads to increased propionate production which is beneficial to meat, milk, and fiber production. However, excess production of propionate can lead to acidosis (increased acidity of the rumen).

Butyrate is produced from fiber and starch. Higher proportions of grain in the diet lead to increased butyrate production. Too much butyrate can have negative consequences, too.

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For more information, go to sheep101.info/201/ or sheepandgoat.com.