

## Conjugated Linoleic Acid (CLA)

Considerable interest has been given to the subject of Conjugated Linoleic Acid (CLA) by the beef and dairy industry, the health care community and researchers. CLA is a very unique fatty acid that is produced naturally in ruminant animals. Interest by these groups is due to CLA's extraordinary health-enhancing properties. Hundreds of studies have been and are being conducted to determine the benefit of CLA in the diet of animals and humans.

CLA is an intermediate by-product of the biohydrogenation and enzymatic isomerization of linoleic acid by rumen microbes. Research trials have demonstrated it is possible to significantly increase the level of CLA in cattle whose diets are supplemented with high levels of linoleic acid.

### **HUMAN HEALTH**

The list of potential benefits of this nutrient is quite extensive. The list of properties and benefits include anticarcinogenic effects, antiatherogenic properties, hypocholesterolemia properties, enhanced immune response, anti-diabetic effects, an ability to induce a relative decrease in body fat levels and an increase in lean muscle, and an ability to promote enhanced rates of bone formation. The implications and potential benefits of CLA to the beef and dairy industry are enormous. Cattle, through their meat and milk, are the only major, natural source of CLA. CLA's health enhancing properties can give the industry the positive exposure and the edge that it has been seeking for so long.

## **LEAN MEAT**

In addition to the health enhancing benefits that CLA offers to humans, these same benefits are believed available to the host animal. From a beef and dairy production standpoint this has numerous implications. Primary among these is CLA's affect on body fat levels and the proportion of lean to fat, particularly in young growing animals. CLA appears to have the ability to induce a relative decrease in body fat levels and an increase in lean muscle. This could be of great use in the production of lean beef and especially important for young growing females. It is detrimental for a heifer to lay down too much fat in her mammary tissues during puberty. Doing so can reduce her lifetime milk production potential. Supplying a linoleic acid source in the diet of these young animals should facilitate a reduction in the deposition of fat in the mammary gland. Furthermore, because the diets fed to these animals in each of these situations could contain higher energy due to their fat content, feed efficiency and average daily gain could be increased without the usual adverse fat buildup or "fleshiness" that is normal for a young animal on this type of high caloric diet.

## **ANIMAL HEALTH**

Research has also shown that CLA has the ability to prevent the suppression of growth that commonly occurs when an animal's immune system is challenged. Normally, tissue breakdown occurs upon stimulation of the immune system and energy is partitioned away from important processes such as growth. This phenomenon is often observed when animals are vaccinated. CLA seems to be able to modulate the immune response and prevent muscle degradation and growth suppression. Animals that have CLA in their system appear better able to handle outside challenges to their immune system.

## **SUMMARY**

There is tremendous opportunity and potential for the beef and dairy industry as the primary natural source of CLA.



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