

They can burn the skin, damage the eyes, and irritate nasal passages. When treating grain or handling the acids, protective clothing including safety goggles, rubber gloves, and an apron should be worn. Fresh water should be kept close by in case of accidental spillage or skin contact. Also, breathing fumes during treatment and entering freshly treated grain bins should be avoided. The acid is quickly absorbed by the grain, but it would be advisable not to handle the grain or go into bins for a day or two after treatment. Manufacturers' brochures and label directions should be consulted for additional safety recommendations.

Feeding Treated Grain

Acid-treated grain has been fed to all kinds of livestock and poultry with no reported palatability problems or poor performance. Most feeding trials have been with acid-treated corn fed to cattle. The treated corn had generally the same feeding efficiency as corn stored in an oxygen-limiting silo, with both kinds of high moisture grain being superior to dry grain.

Because the reports vary as to how much advantage there is in feeding high moisture grain, it is not possible to state a certain percentage increase in efficiency that one can expect. However, some nutritionists feel that 4 to 6% is a reasonable average for beef cattle.

Acetic and propionic acids are naturally occurring compounds, and a readily digestible energy source. They are intermediate products in digestion, produced in particularly large quantities in ruminants. The quantities consumed in acid-treated grain would not be great enough to upset normal acid levels in the digestive system.

Advantages of Acid Treatment

The principal advantage of chemical preservatives is that very little energy is required to treat the grain. Therefore, the producer is not dependent on the availability of fuel in order to successfully store his crop.

The cost of the equipment used to apply acid is much less than the cost of most types of dryers. Therefore, a low initial investment is another advantage to the producer in that he retains investment flexibility. Furthermore, grain can be harvested and treated at almost any rate, removing a possible bottleneck created by a low capacity dryer.

Other advantages, such as early harvest date, harvesting at high moisture, etc., are common to other high moisture storage methods as well.