



Glycerin in Swine Diets

The expansion of biorenewable fuels has led to an increased number of biodiesel production plants. Biodiesel is often made from soybean or vegetable oil, with crude glycerin being the by-product. This compound is a pure energy source. This month's Tech-Line will address some of the most commonly asked questions regarding glycerin in swine diets.

1. What is glycerin?

A syrupy, sweet, light to amber colored liquid obtained from fats and oils as a byproduct of chemical reactions that yield fatty acids for renewable fuels. The name glycerol is preferred for the pure chemical, but the commercial product is usually called glycerin. Glycerin is about 3/4 as sweet as sugar, has the consistency of maple syrup and stays liquid down to minus 10 degrees Fahrenheit.

2. How is glycerin being used in swine diets?

The increase in corn prices has led to glycerin being studied as a partial replacement for energy sources. Research done by the USDA-ARS in collaboration with Iowa State University and Mississippi State University indicates crude glycerin has an energy value similar to corn.

3. Has Hubbard Feeds done any research on glycerin?

At our research facilities near Nicollet, MN, Hubbard Feeds has completed one trial and has two trial in progress in relation to glycerin. The first trial compared the cost effectiveness of crude glycerin at 3% in grow-finish diets. Results show grow-finish pigs ADG, ADFI, and F/G about the same on diets with 3% glycerin compared to diets with 1% added fat.

Another trial compares diets with 6% glycerin to diets with 2% and 6% added fat. Results are still pending, but preliminary results indicate that ADG, ADFI, and F/G are similar for pigs fed diets with 6% crude glycerin in comparison to 2% added fat.

Other studies are in progress to better determine the true value of crude glycerin in swine diets.

4. What are the economics of feeding glycerin?

When considered as a replacement for energy sources, the following guidelines can be used to determine the economics of feeding glycerin.

As a replacement for corn:	Glycerin should be priced at 75% of the value of corn
As a replacement for fat:	Glycerin should be priced at 25% of the value of fat

5. What other factors should be considered when feeding glycerin?

Freight –long distances and higher freight rates can reduce the cost competitiveness of glycerin

Holding tank – do you have the proper storage tank for glycerin and does the size match the quantity you will purchase it in?

Methanol content – FDA has established a maximum limit of 150 ppm in glycerin.

Glycerol content—what concentration is the glycerol? Higher levels of glycerol correlate to increased energy content.

For flowability concerns, consistency of the diets will be similar to the same amount of added fat.

6. Are there any drawbacks to feeding glycerin?

Research is being done how glycerin might impact meat quality. To date, Hubbard Feeds has seen no negative effects on belly quality.

Because of the long term concern of low levels of methanol, Hubbard Feeds has no recommendations for feeding glycerin in sow diets at this time.

The use of glycerin in nursery diets has not been established at this time.

7. Where can I have a sample of glycerin evaluated?

Glycerin samples should be evaluated for methanol and glycerol levels. In order to have consistent sampling results, Hubbard Feeds prefers all glycerin samples sent to the same lab:

MVTL
2 N. German Street
New Ulm MN 56073

8. Where are sources of glycerin located?

There are presently 148 companies actively marketing biodiesel. Visit the website of the National Biodiesel Board at www.nbb.org to find the supplier closest to you.

Early studies on the use of glycerin in swine diets show that it has about the same energy as corn and therefore can replace it on almost a one to one basis. Hubbard Feeds will continue to evaluate glycerin and other by-products that become available to the swine industry as we for ways to reduce feed costs.

If you have any specific questions on glycerin, please contact your local Hubbard Feeds representative.

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