

Recycling Of Antifreeze Gains Impetus From Penalties Imposed by EPA

The idea of recycling antifreeze is becoming more attractive than ever before, according to a spokesman for Miller Diesel Inc., 6030 Jonestown Road.

This is especially true because of two current situations. First, the EPA and various state environmental agencies are imposing large fines on any business or other facility that discharges anti-freeze to the environment.

The only other way to get rid of old anti-freeze is to have an approved waste-removal firm haul it away in a contained environment. This type of removal can cost around \$200 per 55-gallon drum.

The second situation is the starting point in manufacturing. anti-freeze is a raw material called ethylene oxide, which is also the base for many plastics and other products. The production of plas-

tics is far more profitable than the making of anti-freeze.

Because of this, the price of anti-freeze will continue to rise, and the supply may be very tight in the coming months.

FPPF Inc., for which Miller Diesel is an authorized distributor of additives to improve engine performance, has worked on laboratory experiments with Union Carbide Corp.

These experiments have found that from the time anti-freeze and water are mixed, the ethylene glycol starts to break down chemically. The more operating hours, the faster the breakdown.

The condition of the anti-freeze is known from the pH reading (normal levels of pH 9.5 to 10). Readings below those levels are corrosive and attack the less-noble metals — zinc, aluminum, steel, iron and cast iron, respectively.

FPPF has designed the first anti-freeze recycling system. The theory behind this system is to restore anti-freeze to its original form for reuse.

The anti-freeze is stored in a 100-gallon or 200-gallon tank. Once the tank is full, it is run through a series of three different micron filters.

Once the anti-freeze is clean, a sample pH test is performed to determine the amount of Glyclean that is to be added. Glyclean is used to neutralize organic acids

that are produced as ethylene glycol "ages" or breaks down over time.

Glyclean restores the pH and preserves the alkalinity of anti-freeze. The rest of the Glyclean ingredients serve as a corrosion inhibitor, anti-precipitant, metal passivator, anti-foam and dispersant.

The next and final step is to find the freeze point of the anti-freeze and add appropriate amounts of pure anti-freeze. This regenerated material can then be stored for future use.

The recycling system and the Glyclean will more than pay for themselves in a short period of time. These savings are based on the elimination of the need for waste removal and the fact that only a few gallons of anti-freeze are required to make 100 to 200 gallons.

For more information, car and truck owners are invited to call Miller Diesel at 545-5931.

Aflatoxin Is A Drought Concern

DeKALB, IL. — Beyond drought induced lower yields, corn growers may face another problem in 1988--aflatoxin. Drought and severe heat are environmental factors that favor the production of aflatoxin, a poisonous by-product of the fungi *Aspergillus flavus* or *Aspergillus parasiticus*, the latter being very rare in the Corn Belt.

"Aflatoxin is a concern because of its carcinogenic effect on many animals and humans," stated Larry Martin, an agronomist with DeKalb-Pfizer Genetics. "Reyes syndrome, a disease which is fatal to children, has also been linked to aflatoxins. Effects on livestock include reduced feed efficiency, stunting, abortion, decreased protein utilization, liver animals, and increased susceptibility to heat and cold stress. Livestock react differently to aflatoxin consumption. Young pigs are very susceptible followed in order by pregnant sows, calves, finishing hogs, mature cattle and sheep. Lactating dairy cows should not be fed contaminated feed because residue

may appear in the milk they produce."


Conditions must favorable for aflatoxin production include temperatures from 80 to 100 degrees F., a relative humidity of 85 percent or more and grain moisture about 17 percent. "Damage from insects (especially earworm and corn borer), hail, birds, and mechanical injury can also contribute to the fungus growth," said Martin.

"After infection, aflatoxin can be produced in less than eight hours," Martin stated. "Harvested corn that is suspect should be dried immediately, preferably with a continuous flow dryer. Drying temperatures above 110 degrees F. will kill the vegetative growth, however, spores will remain viable. Grain that will be stored should be dried to a 13 percent moisture level. Other means of limiting *A.flavus* growth include the reduction of kernel breakage during harvest, the removal of foreign material, and regular monitoring of stored grain.

"Interstate shipments of grain

containing aflatoxin are illegal at levels above 20 parts per billion (1 kernel per 625 bushels). Blending to achieve levels below 20 ppb is also illegal. Detection can be made with an ultra-violet light. If infected, a bright greenish-yellow fluorescence will be present. The light test can verify the presence of *A.flavus*, not aflatoxin. To determine if aflatoxin is present, a chemical test must be conducted."

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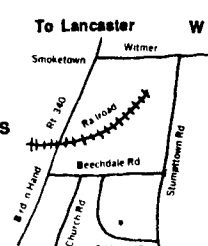
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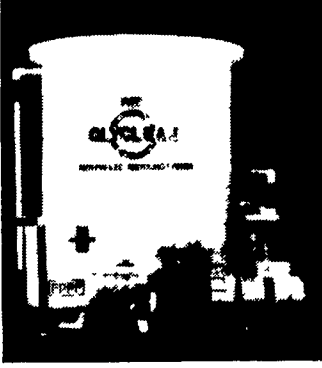
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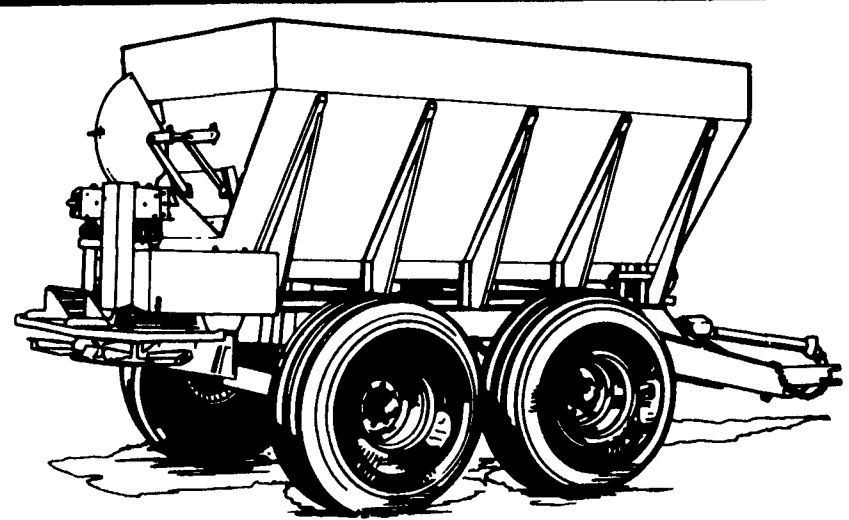


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