



Energy Edicts

By James W. Garthe

Penn State Ext. ag engineer

With petroleum fuel prices rising each year, Pennsylvania farmers have taken a critical look at ethyl alcohol for tractor fuel, says James W. Garthe, Penn State Extension agricultural engineer. But many farmers have discovered that most engines will not operate with alcohol as fuel, unless certain modifications are made.

Most problems with alcohol as a fuel relate to its chemical properties. First, pure alcohol is difficult to make. The highest grade attainable through distillation is 190 proof, or 95% alcohol. Pure alcohol, 200 proof, requires an industrial process available only at large facilities. Alcohol is also tricky to store, because it is hygroscopic, meaning alcohol absorbs water quite

readily, often moisture from the air.

To burn straight alcohol requires several engine modifications, while petroleum fuel and alcohol mixtures also have problems. When mixed with diesel fuel or gasoline, alcohol will mix with any available water, and settle out. This separation will result in erratic engine performance, since the engine will be burning alcohol and water one minute and petroleum fuel the next.

To burn straight alcohol in a gasoline engine requires modification of the carburetor and a few other engine components. Since alcohol requires about two and a half times more heat to vaporize than gasoline, the carburetor must be warmed almost constantly to prevent icing. A

CARLISLE — The Bush Hog Squealer line of inexpensive Rotary Cutters were introduced in 1982 with a single 60" model available. Due to tremendous customer acceptance, this line has been expanded to five widths; 36", 42", 48", 60", and 72".

The 36" and 42" models have

gasoline engine also requires about one and a half times as much alcohol to run properly. This means the carburetor jets must be enlarged about one and a half times to allow greater fuel flow.

The best way to burn alcohol in a diesel engine is to mix 100 percent pure ethyl alcohol fuel to get a fuel called diesohol. Diesohol is 90 percent No. 2 diesel fuel and 10 percent alcohol. This mixture results in satisfactory engine performance with no modifications to the engine. Other fuel mixtures or straight alcohol in diesel engines require extreme modifications and may result in unacceptable performance.

Alcohol can and will continue to be used as a fuel. However, precautions must be taken to ensure that engines are not damaged and satisfactory performance is had, especially if you do the modifications yourself.



The Squealer Rotary Cutter line from Bush Hog includes five models of varying widths.

modified Cat. 0 - Cat. 1 three point hitch, shear pin protection on the drive line and optional round blade holder.

The 48", 60", and 72" models feature Cat. 1 hitch, shear pin in the drive line and round bale holder as standard equipment.

All models come equipped with solid rubber tire gauge wheel assembly which is warranted for

two years. The rest of the machine carries a one year warranty.

The Squealer line of cutters are designed for tractors up to 40 HP and are intended to be used to cut anything up to light brush. Their low price makes them ideal machines for owners who have small acreage to maintain. They are available through authorized Bush Hog dealers.

Pennwalt names manager

PHILADELPHIA — Neil DeStefano has been named Product Manager for Insecticides and Fungicides for Pennwalt's Agchem Division.

Prior to joining Pennwalt, DeStefano was a Product Supervisor with FMC Corporation's

Agchem Group.

A resident of Medford, N.J., DeStefano is a member of the American Marketing Association, the National Agricultural Marketing Association, and the National Agricultural Aviation Association.

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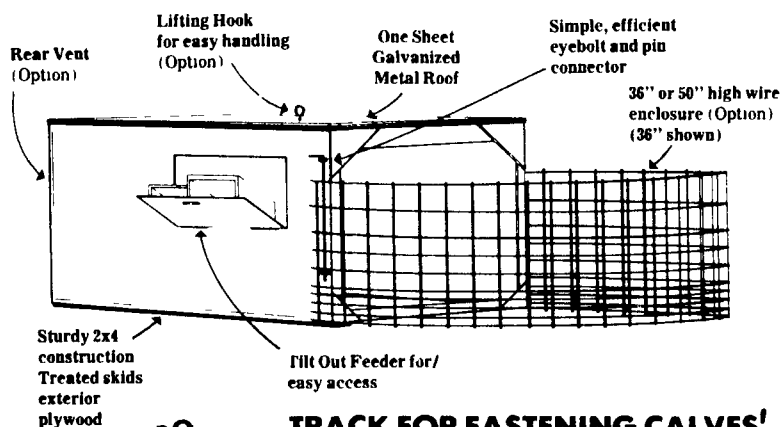
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