

# Buyers be cautious of soil conditioner, plant growth claims

**UNIVERSITY PARK** — Any product marketed in the Commonwealth which is advertised to modify soil conditions or improve plant growth is subject to regulation under the Pennsylvania Fertilizer, Soil Conditioner and Plant Growth Substance Law.

Registration of a product, permitting sale, assures consumers that manufacturers make no statements as to the benefits of use which cannot be proven to the satisfaction of the registering agency, the Division of Feeds, Fertilizers and Lime of the Pennsylvania Department of Agriculture.

Chief of the Division is John Longenecker, whose responsibility is to interpret and enforce the licensing and labeling regulations. The task is both complex and difficult, and Longenecker wants consumers to understand that just because a product is registered for sale, there is no implied assurance that it will really help improve growth under all conditions.

The earlier portion of the law, which requires labeling of fertilizers, was enacted in 1955. This part of the law is relatively straightforward and its enforcement presents no unusual problems. Percentages of nitrogen, phosphate, and potash must be shown on fertilizer labels. However, additional legislation was passed in 1977 in an attempt to regulate an assortment of products from a wide variety of sources and varying widely in composition. These products, grouped as either "plant growth substances" or "soil conditioners" are more difficult to evaluate.

Plant growth substances, expected to perform as their name implies, may include among other materials seaweed extracts, microorganisms which fix nitrogen in the soil, and chemical plant growth regulators. Soil conditioners, marketed to bring about a physical or chemical change in the soil, contain peat or other plant materials to be added to the soil especially for

greenhouse use, liquid wetting agents similar (sometimes identical) to those used in dishwashing detergents and newly discovered organisms which are supposed to break down herbicide residues.

The 1977 legislation requires that these products be sold only on the basis of claims which can be supported by laboratory and field research. But, although a product's claims may be found to be valid, it still may not satisfy consumers for several reasons.

First, manufacturers' claims, in light of this legislation, become very modest, such as "adds nitrogen to your soil." The quality of nitrogen contained in the bottle might satisfy the claim, but be insufficient to do much for crops.

Second, there is the problem of interpreting research results. The regulatory agency requests manufacturers to supply research data to support the advertising claims for their products. These reports are carefully evaluated to determine if the results have been achieved under controlled, reproducible conditions. Even though the research procedures may satisfy scientific standards, the results still may not be pertinent for Pennsylvania consumers. For example, products which ameliorate problems existing elsewhere — such as the arid West — may have no effect under the wet, acid conditions found in Pennsylvania.

Third, laboratory tests performed by the regulating agency may show that the product can do what manufacturers claim, although for agricultural purposes the effect may be negligible.

Agronomists at Penn State, led by Dale Baker, spent three years investigating wetting agent-type soil conditioners for the PDA to come to this conclusion. Their study revealed that these concentrated wetting agents, when added to water in a beaker, did reduce the surface tension of the water. This is a well known property of wetting agents, or

surfactants.

They also found that when applied to soil columns in laboratory test tubes — in concentrations 10 to 1000 times higher than that recommended by manufacturers for use in the field — these products increased the depth of percolation.

Field results were less impressive, however. The wetting agents were taken to the University's research farm and applied to newly planted soybeans. They were tested for soil moisture retention (after the first irrigation following application), for germination, and for yield. Products were applied according to manufacturers' recommended rates, and at 10 times that rate. No significant difference was discernible, statistically or otherwise, either between untreated plots and those that had been treated, or between the recommended application rate and the tenfold rate.

Apparently field conditions are so varied and complex that the impact on soil conditions of the small change in water brought about by the very dilute wetting agent could not be measured on the

soils at the PSU farm.

The Pennsylvania Department of Agriculture has adopted the laboratory test for surface tension reduction as the performance test for the claim "makes water wetter." If a soil conditioner passes this test, its manufacturer is considered to be practicing truth in advertising. Passing the test does not necessarily indicate that the product will change soil drainage characteristics.

Proof of claim, which the legislation requires, is not the same as proof of value, which the consumer must determine for himself. To do this, the consumer has a number of options: he can read the label very carefully to identify the specific contents and claims, as distinguished from the imaginative text on the label; he can consult his county Extension agent to see if he has any information on the product and whether it might help solve his particular problem; and he can try a little of the product on a strip of ground adjacent to an untreated strip to see if there is a recognizable effect from the product under conditions existing on his own land.

Registered products do not bear a seal of approval by the PDA, but lists of the products registered and those rejected are available from the Department. PDA agents are continually checking stores throughout the Commonwealth; but if a retailer or private consumer has any doubt about whether a product is registered, Longenecker urges him to call the Department in Harrisburg. In this way, consumers can assist the agency in assuring that only registered products are found on the shelves of garden centers and agricultural supply stores. An alert retailer can save himself the money lost when a stop sale is issued if he checks with the Department before stocking up on an unfamiliar product.

"I think we evaluate these products pretty thoroughly" says John Longenecker, whose office also screens products for substances harmful to plants, fish, animals, or humans. Nonetheless, he feels that his agency cannot relieve consumers of their own responsibility to choose products which will be of value to them.

## Angus breeders set 1981 records

**ST. JOSEPH, Mo.** — U.S. Angus breeders broke all past performance department records during the 1981 fiscal year which ended September 30 as they reported a combined 179,703 weaning and yearling weights to the Association compared to last year's record total of 163,769 weights, reports Richard Spader, executive vice president of the American Angus Association.

"Despite the depressed economy and the even more depressed cattle market Angus breeders continued to build for the future by increasing the breed's base of vital performance information," Spader said.

Total number of weaning weights reported in the

Association's Angus Herd Improvement Records program was 126,037 head compared with the previous record high of 114,853 in 1980. The 1981 yearling weight total was 53,666 head, also up sharply over the 48,916 head weighed as yearlings in 1980. The number of American Angus Association members actively participating in the AHIR program reached 1,863 in 1981 compared with 1,671 the previous year.

Registrations of purebred Angus cattle declined during 1981, a reflection of the declining economy, and the resulting decline in demand for beef. Total registrations for the 12-month period was 209,416 head. The number of purebred Angus sold

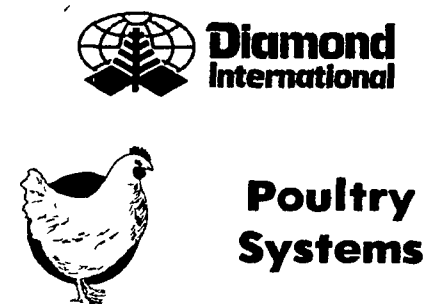
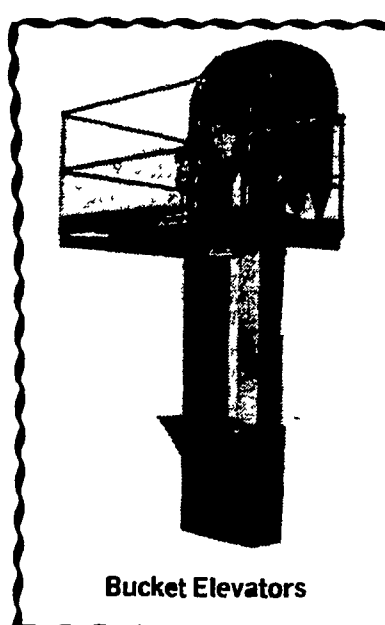
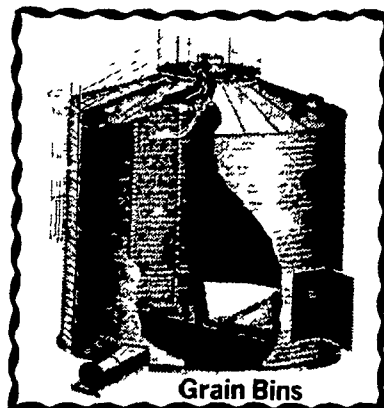
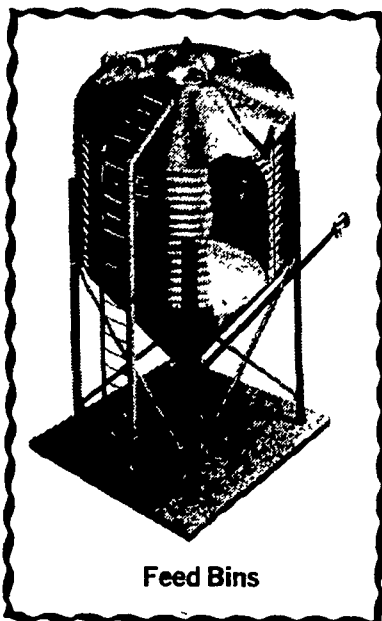
was only down slightly, however, as reflected in transfers of registered Angus from one owner to another. The 1981 transfer total was 141,403.

New Angus herds continued to be formed at a rapid pace. During the year 2,326 new regular memberships were issued along with 1,038 new junior memberships.

Despite the economy, the average value of registered Angus cattle sold at auction showed a slight increase. The average price paid at 567 auctions in 1981 figured \$1,461 per head compared with \$1,422 per head at 553 auctions in 1980. The average price of 24,010 cows sold at auctions was \$1,394 while 16,689 bulls went for an

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