

## Vitamin E: Triple Duty For Sows, Pigs

PRINCETON, N.J. — The potential to increase litter sizes and improve animal health is leading animal scientists to advise pork producers to double-check the vitamin E content in their sow rations.

Currently, the National Research Council (NRC) lists the vitamin E requirement for adult swine as 20,000 international Units (IU) per ton of feed. Over the past few years, however, studies by Ohio State University scientists have indicated that when sows' rations provided vitamin E at double or triple that level, litter size increased by an average of one pig and the incidence of costly mastitis-metritis-agalactia (MMA) in

newly farrowed sows decreased significantly compared to controls.

Meanwhile, other research has shown that when the lactating sow's diet included higher levels of vitamin E, her nursing piglets had a boost in their developing immune systems.

The discrepancy between NRC requirements and recent research isn't all that surprising, said Dr. Donald Mahan, who led the Ohio research team. For one thing, the NRC itself has emphasized that its requirements are minimums, designed to prevent classic deficiency signs rather than promote optimum health and performance. Additionally, the current NRC requirement for vitamin E, which

was published in 1988, is based on studies that were done a decade or longer ago — and that used growing/finishing hogs rather than sows.

"The bottom line is that if a producer is trying to keep a sow in the herd for a longer period — which is what many producers are trying to do — I would probably recommend a minimum of 60,000 IU per ton of ration to meet that requirement for reproduction and enhancing the immune response," Mahan said.

MMA presents an especially common problem in newly farrowed sows, Mahan said, "because the birth process disrupts a lot of tissue. And with the exposure of what are basically open wounds or sores, there's a greater opportunity for pathogenic bacteria to cause disease."

It's long been known that a strong immune response requires adequate vitamin E stores. The connection still isn't fully understood, but in experiments with swine and other livestock, researchers studying increased supplementation have reported benefits ranging from increased survival rates in newborn pigs and lambs to fewer, less severe outbreaks of mastitis in dairy cows.

"If the sow is in a good vitamin E status at the time of farrowing, she can have a lower incidence of MMA. In addition, her milk production and the subsequent reproductive effects appear to be enhanced," Mahan said. Scientists have also conducted studies suggesting that increased levels of vitamin E can play another role in reproductive performance (affecting litter size) through the formation of prostaglandins involved in

reproduction, he notes. However, research in this area is continuing.

Producers' goals will largely determine how much vitamin supplementation proves optimum, Mahan said. "If your goal is simply to maximize reproductive effects, you can probably see results at around 36,000 to 54,000 IU per ton of feed," he said, based on his studies. "But the immune response seems to require a higher level of vitamin E in the diet. If you're interested in reducing MMA, vitamin E is apparently effective at 60,000 to 80,000 IU."

In balancing rations to optimize vitamin E intake, Mahan cautions against relying too much on the levels found in feedstuffs. "Grain,

for instance, is a very good source of vitamin E, but once the kernel is cracked or the grain is heated or exposed to minerals, the vitamin E will be destroyed," he said.

University of Kentucky swine nutritionist Dr. Merlin Lindemann estimates that it will probably cost about \$1.50 per sow per year to supplement sow rations at these levels of vitamin E. "It's not going to take much more than a tenth of a pig per sow per year for that increased level of vitamin E to pay off," Lindemann said. "Or looking at it another way, you won't need more than one or two sows to conceive that might have had to be rebred to pay for that higher supplementation level."

## Science Olympiad Announces Winners

DOYLESTOWN (Bucks Co.) — Delaware Valley College hosted the Southeastern Regional Science Olympiad recently on its Doylestown campus.

First in the middle school division was Unami Middle School. First in the high school division was Harriton High School.

The teams competed in 23 scientific and technical events throughout campus and received points based on their successes compared to other schools in their division. The 11 highest ranked teams in the middle school division and the nine highest ranked teams in the high school division will attend the Pennsylvania Science Olympiad in April at Juniata College.

Advancing teams in the middle school division, listed from first to

11th place, were Unami Middle School, Bala Cynwyd Middle School, Haverford Middle School, Governor Mifflin Middle School, Stetson Middle School, New Hope-Solebury Middle School, Welsh Valley Middle School, Fleetwood Middle School, Fugett Middle School, Abington Junior High School, and E.T. Richardson Middle School.

Advancing teams in the high school division, listed from first to ninth place, were Harriton High School, Haverford Senior High School, B. Reed Henderson High School, Central Bucks West High School, Abington High School, Wilson High School, Germantown Friends School, Lower Merion High School, and Central Bucks East High School.

## Sheep, Wool Festival

(Continued from Page D9)

but they do need to make a high quality wool and focus on the types of wool that are returning the most money.

Marketing is the final area Pope sees as vital to the success of the operation. He said wool is the only industry where the buyer tells the seller what it is that he is trying to sell. By knowing exactly what it is you're producing, which requires becoming familiar with your wool — the diameter, fiber length, and other factors — you can most effectively market it. He suggests coring the wool clip and selling it on the core. "Several pools core their wool and want a price on the core. Some even want a clean price," he said. "Put it into volumes you can objectively measure."

Communication between the seller and customer is important,

whether you are niche marketing to the cottage industry, or pooling your wool, Pope said. On the small scale, a handspinner may be interested in the life story of a particular sheep. Turn that information into a marketing tool.

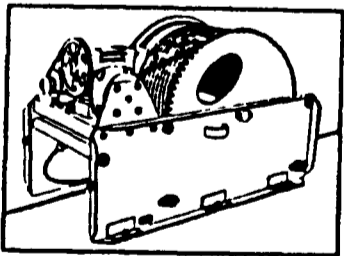
The same holds true when talking about larger quantities. Commercial processors need volume, approximately 150,000-250,000 pounds to process at one time. They don't buy one lot that size — they blend: American with Australian, Eastern with Western domestic, in many different combinations. They don't mix wide varieties or fiber diameters, but the blending that they do allows them to produce a cheaper product that still has the value they need. Information that the grower provides is valuable to them. They can then utilize the information to their advantage in blending.

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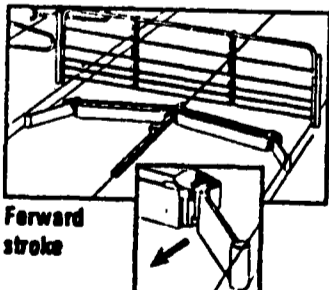
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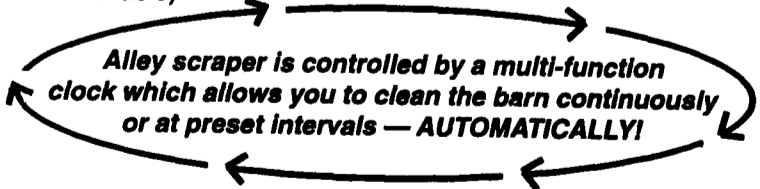
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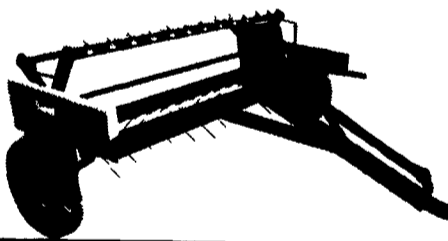
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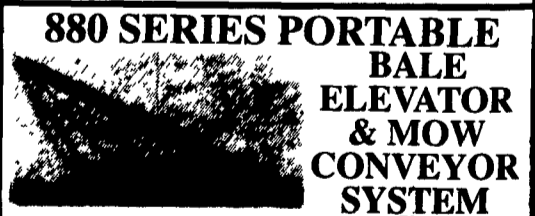
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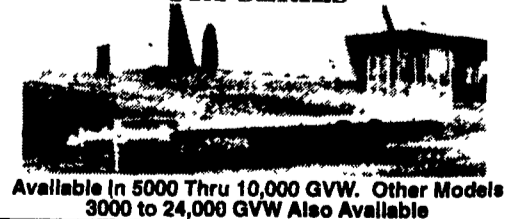
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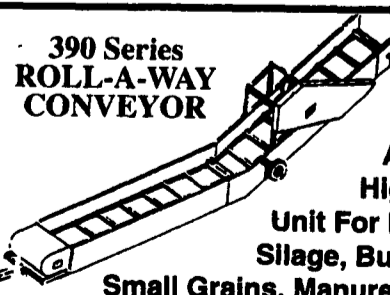


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