

# Penn State Sheep Research Presented at Livestock Day

A truly enthusiastic group of Pennsylvania Sheepmen attended the 1973 Livestock Day at Penn State on March 22. One of the best crowds in recent years listened to Penn Staters present summaries of their recent research results. According to the enthusiasm shown by the sheep participants, a stronger sheep industry in the state may be coming in the near future. Some of the reports are summarized below.

## Testing Makes Cents

Almost 200 lambs from 28 sires have been evaluated in the Meat Animal Evaluation Center sponsored by the Pennsylvania Department of Agriculture. Breeders consign lambs at weaning time for post-weaning growth and carcass evaluation. Although many rapidly growing and meaty lambs have passed through the station, none of the rams has received a superior rating based on the performance of their lambs. However, two Cheviot and two Hampshire rams have received excellent ratings. Part of the group of lambs from each sire is slaughtered, and the other half of each group may be left as rams for sale or use by the breeder at the end of the test. The comparisons over the past few years show that there are tremendous differences in the genetic ability of rams being used in Pennsylvania flocks.

## Slaughter Weights of Ewe and Ram Lambs Important

Ram and ewe lambs were assigned to three different slaughter weights. Ewe lambs were slaughtered at either 90, 108, or 115 pounds. Ewe lambs slaughtered at greater than 108 pounds yielded extremely fat carcasses, and required costly amounts of feed to result in the last seven pounds of gain. All of the lambs were from western ewes (of Columbia, Suffolk and Hampshire breeding) and Hampshire rams. The 133-pound rams, the heaviest slaughtered in this study, averaged 27 inches of fat cover, which is not excessive. The amount of feed required per pound of weight gained was not excessive for the heavy-weight rams. According to these results, even large-type, growthy ewe lambs should not be slaughtered at more than about 95 pounds, and ram lambs should not be slaughtered over about 135 pounds. Wethers of the same growthy type should not be slaughtered over 110 pounds. These results were based on weaning the lambs at about 90 days of age after a creep-feeding period, and feeding a high-grain ration from weaning to slaughter.

## Factors Affecting Pelting Difficulty Studied

Hand fisting (removing lamb pelts) requires a great deal of labor. The only real factor causing difficult pelting was that rams do pelt much harder than ewes. Larger lambs did not pelt any harder than lighter-weight lambs, and none of the carcass traits measured (dressing percent, fat thickness, or pelt weight) affected the degree of pelting difficulty. There was some indication that different breeds did pelt harder than other breeds, and this will be studied in more detail. Withholding water before slaughter was not important.

## Controlling Internal Parasites

Although there are many highly efficient and safe drugs to control the mature internal parasites of sheep, parasites are still a problem. Good management must be used with

medicines to control parasites. Some of the management practices discussed were allowing one head of cattle for each five or six head of sheep to graze together. The cattle will eat more of the coarse grass which the sheep will not consume, thereby improving the nutritional value of the grass eaten by the sheep. Rotating pastures each two weeks, leaving the grass short at the end of a two-week grazing period, will allow the sun to destroy the majority of larvae before they can become infective. Use of a rotary mower to cut off grass not consumed by the sheep after grazing also helps. Allowing lambs to graze new grass ahead of the ewes (pasture creeping) also reduces larvae exposure of the young animals. Ewes which produce enough milk for the lambs also maintain a thrifter condition. Winter feeding and watering facilities should be kept clean.

## Ration Characteristics Related

One of the keys to profits in sheep production is maximizing the use of high quality forages. Different amounts of concentrates and roughages have been fed to growing wethers and lactating ewes in order to determine the factors deter-

mining feed consumption. Three different characteristics of rations are being studied. First is the actual digestible energy (amount of energy per unit of weight). Second is bulk density (weight of a certain volume of feed), and third is bulk energy density (amount of feed energy contained in a certain volume of feed). These three factors have all been related to the amount of feed energy consumed by growing wethers and lactating ewes. One important result noted thus far is that most animals will consume only a certain amount of feed energy, regardless of how bulky or compact the feed.

## What Causes Lamb Flavor?

Flavor of meat from young animals is usually more desirable than that from older ones. Lamb flavor from wethers is usually less than that of ewes, and the intensity of flavor from ewe lamb meat is less than that from rams. Intensity of ram flavor is usually greater in carcasses from lambs fed white clover compared to those fed a grass such as rye grass. Slaughtering procedures, or sire effects within breeds, usually do not play a role in development of lamb flavor, but cooking procedures do. Research has

indicated that lamb flavor is caused by chemicals contained that are water-soluble, but that the characteristic aroma of heated lamb is contained in the fat.

## Suckling Behavior of Single, Twin and Triplet Lambs

With some of the new breeds, such as the Finnsheep, which regularly produce more than two lambs at each lambing, it has become more important to know the suckling patterns of triplets. At seven weeks of age, ewes suckling single, twin or triplet lambs produced 34, 69, and 86 percent of their own body weight as lamb. This indicates the tremendous producing capacity of ewes having and suckling triplets. From two to six weeks of age, triplets suckled less frequently and for shorter durations than did single or twin lambs. Average daily gain of triplet lambs was 0.41 pounds compared to 0.47 for single and twin lambs. Ewes suckling twins or triplets tended to produce more milk, probably because they were "challenged" by more thorough suckling, thereby producing more total milk per

day. Copies of the 1973 Animal Science Research Summary, containing complete reports on Beef Cattle, Sheep, Swine and other research areas can be obtained by writing Animal Science Research Summary, 324 Animal Industries Building, University Park, Pennsylvania 16802 and enclosing \$2.00.

## Feeding Behavior of Sheep Fed Forages

Penngift crownvetch and DuPuits alfalfa were each cut at late-bud and fullbloom stages and preserved as either silage or hay. Accurate records were kept to determine the time lambs spent eating the different types of forages. Sheep fed crownvetch spent 20 percent more time in the feeder than did the alfalfa-fed sheep, but the lambs ate alfalfa at a 38 percent faster rate. Late-bud forages were also eaten more rapidly (31 percent) than were the full-bloom forages. These results indicate that the bulkiness of the diet is the main factor determining the rate at which forages are eaten. Bulkiness, in turn, is influenced primarily by variety and maturity.

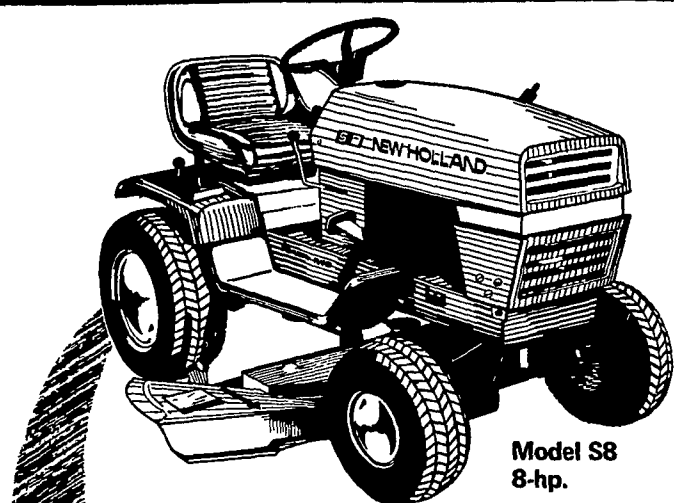
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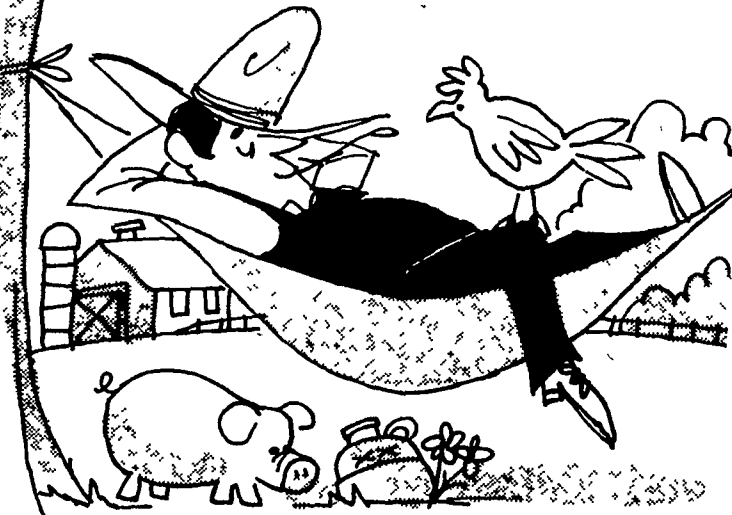
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