

FIFTY YEARS OF PROGRESS IN SHEEP PRODUCTION

Carl Menzies

Research has provided the basis for improving production of quantity and quality of lamb and wool. Knowledge obtained concerning improved breeding, feeding, management and disease control practices has been used to increase profits through more efficient production of quality lamb and wool.

Following are a few areas where major change and improvement have been accomplished.

Types of sheep produced. The sheep industry has matured from a frontier-type industry with wool as the major source of income to making lambs the major product. Consumer preference for meaty, high-quality lamb has decreased market age, weight and finish. This trend has resulted in using more mutton-type rams in crossbreeding, in a considerable improvement in mutton characteristics of fine-wool breeds, and has even caused formation of new breeds of sheep such as the Columbia. The Kansas fall lambing program, with 90- to 100-pound, 5-month-old choice and prime crossbred lambs being sold in the spring, is one result of this trend.

Sheep nutrition. Considerable basic research on mineral, protein, and vitamin requirements for sheep has been conducted in the past 50 years. This has been important; however, much applied research concerning the value of feeds, combination of feeds and methods of feed preparation and feeding has contributed considerably to the sheep industry. Probably one of the most valuable has been the development of pelleted rations. Pelleting complete mixed roughage-concentrate rations has decreased death loss from overeating, increased feed consumption (particularly low-quality roughages), increased gains, improved feed efficiency, and reduced labor involved in feeding. Cost of pelleting should become more reasonable as better pelleting equipment is developed and as pelleting becomes commoner.

Fattening feeder lambs. Much research has been conducted with feeder lambs, since this practice has developed largely during the past 50 years. Self-feeding ground-mixed or pelleted rations has increased gains and mechanized feeding. Many lambs have been fattened on wheat pasture in western Kansas. Research has indicated that no supplement other than salt is needed for fattening lambs on wheat pasture. Implanting or feeding diethylstilbestrol has improved feed efficiency and gains of feeder lambs. Antibiotics, vaccination for enterotoxemia, and management practices have been used to control death loss from overeating disease.

Breeding. Sheep producers have largely practiced mating the best to the best, "best" being determined by visual selection. Recent interest in using performance records in connection with type scores in selection should increase rate of economic improvement.

Attempts to control out-of-season breeding of sheep have not been successful. The newly developed oral, effective progesterone-like compounds, reported effective in synchronizing the estrous cycle, may have real practical value. This points to a need for research on storing ram semen for artificial insemination.

Environmental factors such as level of nutrition and temperature have been shown to affect number of lambs produced. Consequently practices such as flushing ewes and shearing rams in hot weather are recommended for increasing lambing percentages.

Parasite control. New anthelmintics have helped control internal parasites, which are a serious problem.

Sheep production is a minor industry compared with beef cattle and hogs. However, there is no surplus of lamb or wool in this country. All the lamb produced in the United States is eaten (actually about 10% of the lamb and mutton consumed is imported). About 50% of the apparel wool plus all the carpet wool used in the United States is im-

ported. So sheep producers have a demand for increased production of quality lamb and wool in the future. Continued research and increased promotion of these products should result in continued progress.

FIFTY YEARS OF SWINE PRODUCTION

B. A. Koch

Changes in methods of feeding, breeding, and managing swine have been almost revolutionary the past 50 years. Consumer preference, disease control, new knowledge concerning nutrition, new and more adaptable equipment, new structural methods, improved breeding techniques and specialized management all have contributed to the changes in swine production.

Housing and Management:

- 1910's—Open shed, dirt floor, dirty lots.
- 1920's—Portable housing, pasture—McLean County System of sanitation.
- 1930's—Legume pasture, central farrowing, vaccination.
- 1940's—Limited pasture, concrete, blood testing.
- 1950's—Pig hatcheries, pig parlors, confinement.
- 1960's—Slotted floors, manure lagoons, automation.

Feeds and Feeding:

- 1910's—Skim milk, ear corn, 450 pounds of feed per 100 pounds gain.
- 1920's—Water gruel, corn, tankage and bonemeal, 400 pounds of feed per 100 pounds gain.
- 1930's—Dry feed, self fed, full fed, vitamins and minerals added, 350 pounds of feed per 100 pounds gain.
- 1940's—Commercial rations, trace minerals, B-complex vitamins, plant protein, 330 pounds of feed per 100 pounds gain.
- 1950's—Antibiotics, nitrofurans, arsenicals, hormones, pelleted feeds, 320 pounds of feed per 100 pounds gain.
- 1960's—Limited feed for finishing, automation, linear programming, 300 pounds of feed per 100 pounds gain.

Feeding Standards:

- 1910's—Henry
- 1920's—Morrison
- 1930's—Morrison
- 1940's—Morrison, Schneider
- 1950's—Morrison—National Research Council
- 1960's—National Research Council—Morrison

Experimental Methods:

- 1910's—Feeding trials.
- 1920's—Feeding trials, paired feeding.
- 1930's—Metabolism studies, carcass analysis, breeding studies.
- 1940's—Factorial design, carcass quality.
- 1950's—Testing stations, breed certification.
- 1960's—On-the-farm testing, breed certification, testing stations.

Market Animal Produced:

- 1910's—300 lbs., very fat, 12 months old.
- 1920's—300 lbs., rangy, fat, 12 months old.
- 1930's—275 lbs., fat, 9 months old.
- 1940's—250 lbs., fat, 8 months old.
- 1950's—230 lbs., less fat, more meat, 6 months old.
- 1960's—210 lbs., lean, meaty, 5 months old.