

David Kradel Herbert Jordan Milton Madison

# Penn State Poultry Pointers



Forest Muir

Herbert Siegel Donald Singletary Morris Mast

## THE GENETICS OF GROWTH

Herbert Siegel  
Professor and Head  
Department of Poultry Science

The rapid growth rate of the commercial broiler can be traced to advances in knowledge in nutrition, physiology, disease control, and genetics.

In the period from 1940 to 1960, the broiler chicken changed from a 3-pound bird marketed in 16 weeks to a 3.50-pound bird mark-

eted in 8 weeks, with total consumption of more than 12 pounds of feed. In 1990, the broiler chicken is marketed at 3.50 to 4.25 pounds, and requires 6.50 to 8.0 pounds of feed — a conversion rate of about 1.88 pounds of feed per pound of gain — which is a 100 percent improvement in efficiency in 30 years.

The consequence to the consumer is that today's broiler costs less per pound than it did in 1940. During the same period, the value of the dollar has declined by about 300 percent.

While some of this tremendous increase in efficiency can be attributed to better nutrition and management, the greatest effect has been the result of genetic progress. However, associated with this rapid growth rate is an increase in the fat content of the carcass, especially in the abdominal area.

This increase in fat is wasteful to the grower and processor, and — in today's health-conscious society — distasteful to the consumer. When chickens are bred to grow more rapidly, they are also bred to have larger appetites. In fact, up to 90 percent of the rapid growth can be attributed to the bird's willingness to eat more, even when the digestive tract is partly full.

In the laboratory of Dr. Guy Barbato, assistant professor of poultry science at Penn State, researchers are studying the inheritance of growth rate and how this relates to appetite. With very sensitive instruments, they can measure minute quantities of the brain chemicals that control the appetite of the bird, relate the levels of these

chemicals to daily gain, and, most importantly, show how these chemicals influence the amount of fat distributed in the carcass.

By studying genetic stocks dif-

fering in growth characteristics, the researchers will be able to understand the relationship between growth and appetite, and eventually manipulate the fat levels in the finished product.

## Ag Conservation Banquet Held

EBENSBURG (Cambria Co.) — The annual conservation banquet sponsored by the Conservation District, ASCS, SCS, FmHA, and the Bureau of Forestry was held here on April 24, 1990.

James McMullen, director, conservation and environmental protection division, ASCS, was guest speaker for the event. Coming from a farm background in Armagh, Indiana County, PA. McMullen previously was an ASCS district director and northeast area director, ASCS office in Washington, D.C.

Mixing humor and fact,

McMullen discussed aspects of the 1985 Food Security Act relating to conservation. He emphasized the importance of protecting groundwater and planting trees.

Greater flexibility in crop planting, income protection, and an extension of the Conservation Reserve Program through 1995 may be aspects of the 1990 Farm Bill farmers can anticipate.

McMullen noted that everyone can actively conserve natural resources if they recycle, avoid littering, and conserve water. He stressed the importance of teamwork in the environmental age.

The Conservation District then presented John and Dave Shoemaker of T&E Farms, RD Ebensburg with the District's Outstanding Farmer Award. The Shoemakers operate a sheep farm just north of Ebensburg. Their operation consists of 275 ewes and 500 lambs. They follow the intensive grazing system.

Mike Yasick from Penn Cambria High School received the Outstanding Conservation Educator Award.

Winners of the 1990 Conservation District poster contest were Ashley Waddell, University Park School; Daniel Hinton, Westwood Elementary; and David Oravec, Central Cambria High School.

Distinguished Length of Service Certificates were presented to George Farabaugh, Carrolltown for 30 years of service and Edward Hogue of Loretto for 20 years of service as community committeemen for the Agricultural Stabilization and Conservation Service.

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