


Penn State

Poultry Pointers



Agricultural & Biological Engineering Agricultural Economics

Shorthorns Receive Stamp Of Approval

OMAHA, Neb. — Several of the nation's largest and most prominent feedlots have announced their intent to purchase and feed Shorthorn crosses as their preferred feeder cattle.

This announcement was made at a meeting of the American Shorthorn Association at the National Western Stock Show in Denver, Colo.

function. Later we found that ACTH or high temperature increased the amount of corticosteroids that are bound to the lymph cells. We now have shown that not only are some of these lymph cells reactive to corticosteroids but may also respond to the active form of thyroid hormone.

There is now strong evidence that some cells of the immune system produce their own hormones. Researchers at Penn State have described how certain groups of lymph cells of chickens secrete hormones that communicate to the rest of the body that the immune system is being activated. This "feedback" mechanism is part of a total integration of the healthy bird's defense to combat disease. Any suppression of this mechanism will lower the bird's ability to resist disease.

Personnel representing the feedlots and the order buying service explained their renewed interests in demanding Shorthorn and Shorthorn cross calves as their preferred feeders. The ability of Shorthorn influenced feeder cattle to reach the USDA Choice grade at acceptable carcass weights at 14-15 months of age has been instrumental in cementing the fact that Shorthorn-sired cattle offer the greatest profit potential under a value based pricing system.

Data generated at the USDA Meat Animal Research Center (MARC) at Clay Center, Neb., through the germ plasm evaluation (GPE) study confirms that Shorthorn-sired calves presented the fewest calving problems and led all breeds in carcass performance with 88 percent USDA Choice carcasses at an average age of 417 days, final weights of 1,195 pounds, and yielded industry demanded carcasses weighing 741 pounds.

The National Beef Quality Audit completed last year confirmed that 45 percent of the cattle

slaughtered have USDA Quality grades below choice. The audit showed the average beef carcass has nearly \$280 in lost value, with the majority of these losses because of excessive fat losses, poor quality grades, and carcasses (and ribeyes) that are too large or too small for the consumer. The MARC data clearly shows that Shorthorn-sired cattle most closely meet the audit's standards and offer the greatest profit potential under a value based marketing system.

Ty McMurtury, head order buyer, indicated that he and his staff will travel to view the feeder calves at the ranch. Top dollar will be paid for top quality with the service costing the producer two percent of the gross sale. McMurtury indicated that he has orders for more than 1,200 head of quality feeder cattle daily to meet the demands of the feedlots that he represents.

Any questions and inquiries for additional information should be directed to the American Shorthorn Association in Omaha, Neb.

ENVIRONMENT AND IMMUNITY

H. S. Siegel
Professor of
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immunity (direct action by cells of the immune system).

Research has shown that a variety of stressors usually, but not always, can suppress both types of immunity. Stressors, such as temperature extremes, crowding, toxins (mycotoxins, insecticides, etc.), can depress the ability of the immune system to produce antibodies against specific disease organisms or to directly attack foreign cells.

The degree to which stress influences the immune system depends on the intensity of the hormone response of the bird. Much of the early research in chickens emphasized the role of two glands that produce the hormones — ACTH (pituitary gland) and corticosteroids (cortisone-like hormones produced in the adrenal glands).

It was shown that these hormones, which increase during stress exposure, reduced the size of the lymphoid tissues, cardinal sites for cells necessary for immune

In a previous article (*Lancaster Farming*, October 3, 1992), I discussed the ways that environmental factors influenced the number of disease organisms that the bird encounters, and pointed out that as concentrations of organisms increase the probability of infection also increases.

Now I would like to discuss how the environment may affect the way in which the bird combats disease organisms after they enter the body.


Most of an animal's defense against disease depends on the activity of its immune system, which is generally divided into two major categories, humoral immunity (antibodies) and cell-mediated

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