

Animal Weight-Gain Enzyme Tested For Key To Future Use

How much and how fast you gain weight may be related to an enzyme in the body needed to build strong bones and teeth. As a "chemical carburetor," the enzyme regulates calcium in the blood stream but is still something of a mystery to scientists.

Oregon State College researchers are delving into the behavior of the enzyme — serum alkaline phosphatase—to learn if it will serve as an indicator of weight-

gaining tendencies. The amount of weight gained from one pound of feed is commonly called "feed efficiency" and varies greatly among animals.

While humans are usually less interested in the "efficiency" of their food-intake than its gross results, it is a matter of cold economics in feeding of livestock. Margins of profit are often measured in whether it takes seven or nine pounds of feed for an

animal to gain one pound in weight.

Beef animals with highest levels of alkaline phosphatase in their systems made fastest, cheapest gains in preliminary trials at the college. Further research is scheduled by G. I. Alexander, veterinarian; Hugo Krueger, physiologist; and Ralph Bogart, geneticist, at OSC's agricultural experiment station.

Questions yet to be answered include whether phosphatase levels can be altered by diet or other treatment. Scientists are also wondering if inheritance plays a part in amounts of the enzyme in the body. Phosphatase is found in all body cells except certain types of cartilage and walls of blood ves-

sels. Large amounts of the enzyme show up in bones of growing animals, in the lining of the intestines, and in outer layers of the kidney. Most of the enzyme is believed to be manufactured in the bones. It is probably excreted into the bile, scientists explain.

Implications to the livestock industry can be readily seen if blood levels of the enzyme can be used as a measure of inherited gaining ability. Ranchers could use the in-

formation for selecting breeding stock rather than waiting out the slow evaluation of an animal's lifetime performance and the demonstrated gaining ability of his offspring.

The OSC study is part of a U.S. department of agriculture western regional research project on beef cattle improvement.

SPANISH BREAKFAST DISH

NEW YORK (UPI) — Pep up breakfast menus with Spanish scrambled eggs. To serve 4 persons, peel and chop 1 medium tomato; seed and chop 1/2 green pepper; slice one small onion. Saute vegetables in 3 tablespoons olive oil in heavy skillet until tender and soft. Sprinkle with 1/2 teaspoon salt. Beat 8 eggs until light, add to vegetables in skillet, stirring until eggs are cooked. Mix in 3 tablespoons grated cheese and serve.

BUDGET MINDED

MONTPELIER, Vt. (UPI)—Lt. Gov. elect Robert S. Babcock was forced to hitchhike to the Vermont Statehouse to attend budget hearings when the bus he was riding in broke down.



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Big Improvement For Oregon Livestock Forecast In Future

Livestock improvements that will produce such gains as 40 per cent more beef with the same amount of feed are seen for Oregon in the next 25 years by an Oregon State College animal husbandry expert.

Dr. Ralph Bogart, whose new book on "Improvement of Livestock" was published this month in New York and who is chairman of the western regional research project on beef cattle, says "tremendous opportunities" exist for improving livestock.

Improvement through breeding on the basis of selection records—is a big factor but consideration must be given to other things as well, such as nutrition, range improvement, etc. Good inheritance is not worth much in a poor environment and good environment is not much good without good stock, he said.

The first key in livestock improvement on a farm or ranch is determining the goal of the operation, and then deciding what's involved in reaching that goal, he advises. Record keeping is an essential part of any improvement program, he noted. "Eye" selection has obvious limitations.

Several characteristics must be considered in overall rating and selection of animals, he emphasized. They include fertility, ability to convert feed to protein, "mothering" ability, quality of carcass, longevity, disposition, and freedom from inherited defects.

Bogart anticipates that new breeds will be used to a larger extent in the future. New breeds in recent years have helped boost production and brought out breeds better suited for particular areas, he noted. Color prejudice has held some promising new breed developments back, however.

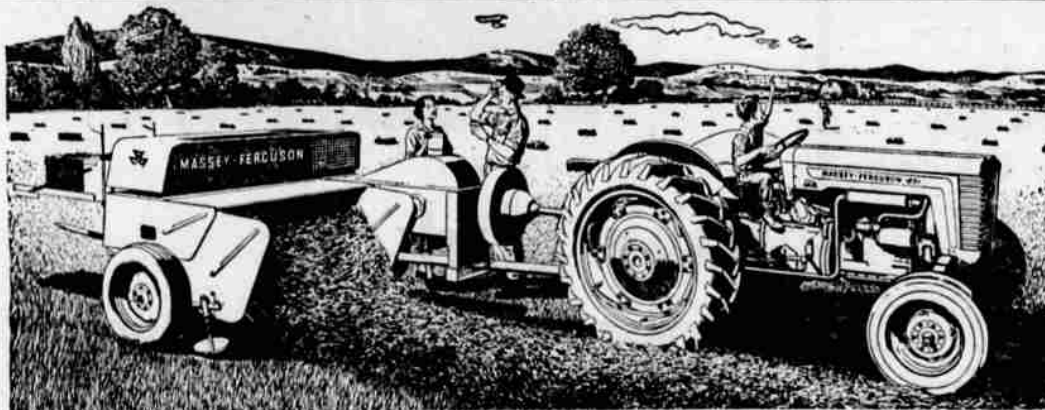
Color is an interesting factor in livestock improvement, Bogart noted. It is of little importance in livestock production as far as rate of gain, feed efficiency, and milk production are concerned, but is of great economic importance in sheep because white fibers lend themselves to dyes much better than pigmented fibers. Color is also important in adaptability of hogs to certain environments. White hogs do well in areas with little sunshine, but dark-colored hogs that are sun-burn free do better in hot, sunny regions.

In sheep, big improvements are possible in lamb crops, Bogart pointed out in the book. The average pounds of lamb weaned per ewe is about 65. Some ewes have averaged 175 pounds, however, giving an indication of improvement potential.

Inherited abnormalities constitute a big problem, according to Bogart. In cattle, there are 47 recognized abnormalities and losses in some herds run up to 20 per cent because of them. In eliminating defects, breeders must look to a progeny testing program, he said.

Research is currently underway in each western state on a different phase of the improvement program — breeding, nutrition, range management, defects, diseases, and reproduction physiology — Bogart reported. Cooperative research avoids duplication of effort, cuts costs, and speeds results, he said.

Just as hogs are taking on a "longer and leaner" better-bacon type look, so are beef cattle "trimming down," Bogart stated. The old concept that animals have to be fat to be good is true in the case of more mature beef animals. Younger beef animals that are more economical to produce are coming into their own now, however, and they do not have to be fat to be good eating.



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