



DALE R. WALDO (left) and William P. Platt, USDA dairy husbandmen, check equipment used to measure the amount of gas a cow exhales. Bag on other side of cow collects gas samples for analysis. In-

formation gathered from these tests will give dairy scientists facts on why a cow uses more energy to maintain her body on pasture than in a barn, and the extent of this energy expenditure (USDA Photo)

### Insulin Injection Test Still Gives Promise of Dwarfism Detection

Insulin injections are still giving promise of detecting beef animals that produce dwarf offspring, says

John F. Lasley, University of Missouri animal husbandryman who developed the test

"However, still further study is needed before the limitation of the test under a wide variety of conditions is fully known"

"Since the test was first developed some two years ago, its been used to test approximately 1,800 beef animals of various breeds, ages and sex in different parts of the country under various climatic conditions," he continues

"DURING THIS work some errors have been made in predicting whether or not an animal is a carrier or non-carrier of the gene guilty of producing dwarf calves," Lasley says "And, too, 10 to 15 per cent of the cattle don't give a clear-cut response to the insulin treatment"

However, he notes that in most cases where test conditions were carefully controlled and great care taken to conduct the insulin test properly, results have been highly satisfactory.

In describing the way the test is conducted, Lasley says an insulin injection is used to put the animal to be tested under stress. Then with the aid of three blood samples — one taken prior to an injection and two following — the animal's reaction to the stress-producing insulin can be traced by white blood cell counts

TESTING OF known carriers of the dwarf-producing gene and pedigree-clean animals has shown that the white blood cell count rises much higher and at a more rapid rate in a clean animal than it does in the carrier animal

According to the animal breeding specialist, several factors are now known to affect the accuracy of the test to detect carrier animals. The first and probably the most important, is the human error involved in making blood cell counts

A second important factor that seems to affect the results of the test is the stressing of animals before the test is made. Lasley says that no animal should be tested unless it is quite and has been for several hours before being tested.

QUICK CHANGES in weather from warm to cold or intense heat over a period of days are suspected of interfering with

the response to insulin. "Possible means of increasing the accuracy of the test by learning more about factors which influence the response of individual animals to insulin, by improving the technique of making cell counts, and by adding to the means of distinction between pedigree-clean and carrier animals are currently being studied," he says.

According to Lasley, additional studies show that differences in blood sugar levels of pedigree clean carrier and dwarf cattle are greater as the size of the insulin dosage is increased. When a heavy insulin dose was used in the Missouri work, blood sugar differences between the three groups of animals were considerable

WHEN A LIGHTER dose of insulin was used, no definite difference was noted in the blood sugar levels of pedigree-clean and carrier animals as both groups showed essentially the same reactions to the reduced dosage, he continues. However, the dwarf

cattle used in the testing still showed considerable reaction even though the amount of insulin used had been lowered considerably.

Research work has shown that the removal of the pituitary gland from small laboratory animals has made them more sensitive to insulin treatments, Lasley says. And, current research results indicate that dwarfs, and the carriers to a lesser extent, may be deficient in one or more of the pituitary hormones or that the hormones may be present, but are unable to function properly.

### May Milk Production Down 1 Per Cent

Milk production in May, estimated by the Crop Reporting Board at 12,889 million pounds, was 1 per cent less than in May 1957, but 4 per cent above the 1947-56 average for the month. For the first 5 months of this year, production totaled 54.4 billion pounds, slightly more than for the same months of 1957.

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