

Evaluating Response To Newcastle Vaccine

SINCE 1970, virulent strains of Newcastle disease have produced severe worldwide losses in poultry. If the disease becomes so widespread in the United States that it cannot be eradicated, an economical means of evaluating vaccination procedures will become necessary.

Present methods of vaccination have had highly varied results. Scientists think this extreme variability may be due to the particular strain and potency of the vaccine as well as the route of administration.

In studies at ARS' Southeast Poultry Research Laboratory in Athens, Ga., a simple and rapid microtest procedure was evaluated for measuring response of poultry to Newcastle vaccination. During a year's application in at least one large diagnostic laboratory in Georgia, the manual-microtest hemagglutination-inhibition (HI) procedure proved to be a very satisfactory compromise between the old test tube method (macrotesting) and a highly automated and expensive microtest method. The automated microtest method uses a machine costing \$5,000

to \$6,000 which automatically adds reagents and makes the dilutions.

Hemagglutination (HA) is the clumping reaction of red blood cells when suspended in a liquid that contains Newcastle disease virus. Specific antibodies directed against that virus will inhibit the hemagglutination.

ARS researchers employed commercially available manual microtest equipment in conjunction with inactivated HA antigen in the modified procedure. In many laboratories, the HI test often involves highly virulent HA antigens which may serve as a source of contamination in virus isolation attempts.

Blood samples were obtained with syringe and needle either from the wing vein of the chicken or by cardiac puncture and then placed in tubes treated with a silicone solution to aid in clot release. After clotting was adequate and the serum had been chilled at 4° C., sometimes overnight, it was harvested with disposable glass pipettes and placed in microtest plates.

Similar plates were prepared for serum dilution by adding antigen-saline mixture to each well. The sera were di-

luted until there was lack of inhibition of agglutination—evidenced by a distinct "button" of red blood cells in the bottom. From this end point the antibody titers were determined.

Using stock inactivated antigen and washed red blood cells which have been prepared in advance, an experienced technician can test as many as 700 sera in approximately 7 hours.

The serum-storage plate, developed by Southeast Poultry Research Laboratory scientist Dr. James E. Williams and biological laboratory technician Alton D. Whittemore, occupies min-

imum freezer space and allows simultaneous pickup and dilution of 12 sera, utilizing 12 microdiluters to each microdiluter handle.

Equipment costs are 10 times less for the compromise manual method than for the automated microtest method.

Described by veterinary medical officer Charles W. Beard and biological laboratory technician William J. Wilkes, the procedure also affords savings in reagents and makes possible a reproducible determination of antibody levels in serum.

American Model Crop Dryer

Because of the additional acreage planted this year, major grain growers are turning to larger capacity crop dryers. One that is proving extremely popular is the American Model 2420. According to the manufacturer, the 2420 can dry up to 11,400 bushels in 24 hours, removing 5 points of moisture, from 20 percent to

15 percent. The dryer is ideal for corn, milo, beans, other grains and seeds.

One of the outstanding features is the completely automated operation. As long as wet grain is available in the holding tank, the dryer will continue to cycle automatically...filling, drying, cooling, emptying and refilling. Controls may be set for a specific drying period and a separate control regulates the grain cooling time. These can be easily changed to meet varying conditions of the grain or weather. The improved controls are located on the dryer in a tamper-proof box.

Another unique feature of the Model 2420 is the cycling burner. This provides an ideal drying climate for the grain since the moisture is removed by a sweating process rather than a conventional continuous "baking" process. Alternate short bursts of hot and cool air move through the 12" drying column. Moisture is removed rapidly while maintaining a lower kernel temperature which aids in maintaining grain quality.

The 2420's twin burners can generate up to 12 million BTU's of heat and 10 hp fan

motors move the heated and cooling air the full length of the dryer. Fans are automatically shut down during the filling and emptying cycles. This keeps air pollution to a minimum.

The American Farm Equipment Company has a complete line of dryers ranging in capacity from 1,400 to 36,000 bushels per day. These are available on a purchase, lease or rental basis. The company has authorized distributors throughout the major grain producing areas of the United States.

For additional information on prices, contact the American Farm Equipment Company, 340 East Main Street, Lake Zurich, Illinois 60047.

Lunch Box Blues

Brighten lunchtime sandwiches with a new idea or two Mash with a fork a 12-ounce can of luncheon meat and a ripe banana Moisten with ¼ cup mayonnaise blended with one teaspoon lemon juice

Any of the ground leftover meats or ready to serve meats are pepped with ½ cup chopped celery and one teaspoon prepared horseradish to one cup of the ground meat Moisten with two or more tablespoons of mayonnaise



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