

**Sales Up**

(From page 2)

Standard steers \$22 50 - 25  
 according to weight. Load  
 lb standard grades, \$23.  
 1545 lb commercial  
 \$22 00, two loads 1150-  
 lb utility steers \$21 50  
 22 50 Shipment choice  
 prime 1004 lb heifers  
 75, highest price straight  
 in loadlots since last  
 late bulk good and choice  
 \$25 50 - 28 25. Cho-  
 largely \$27 00 up, stan-  
 to low-good heifers  
 50 - 22.75 Two loads  
 standard and good 905  
 Nebraskas, \$25 00  
 new standard cows \$20 50-  
 0 Utility and commer-  
 cows closed at \$17.50 -  
 60, mostly \$18 - 20. Late  
 canners and cutters \$16-  
 75 Few heavy Holstein  
 \$19 00 Few light or  
 canners as low as \$13  
 and commercial bulls  
 at \$23 50 - 25.50.  
 good vealers \$29 - 32 Util-  
 and standard \$20 - 29  
 down to \$15 Two  
 good 500 - 575 lb mix-  
 steer heifer stockers  
 25 - 28 Few head good  
 k steer calves sold up to

**At Beltsville**

**Insect Resistance To Flight Stress Tested**

When aircraft from a foreign country land at our airports, the planes are inspected inside and out. Plant material that may harbor insects is removed. Inspectors search the interior for larvae, pupae, and adult stages of pests dangerous to agriculture and public health. They look at the wings of the aircraft for egg masses of destructive insects. And they treat infested aircraft with insecticidal aerosols.

But with the coming of the jet age, new quarantine problems arise. Though high altitude may be fatal to insects, high speeds cut the transportation time. USDA entomologists are conducting tests to determine the mor-

ality of insect hitchhikers on jet wings or inside the aircraft in both heated and cold sections.

Experiments have been conducted by ARS entomologists W N Sullivan and entomology student E B Knippling in the laboratories at Beltsville, Md, and in actual flight tests in co-operation with the US Navy Disease Vector Control Center, Jacksonville, Fla, the Naval Air Test Center, Patuxent River, Md, and the military Air Transport Service USAF.

LABORATORY STUDIES at Beltsville indicated that several species of insects were killed after one hour of refrigeration at five degrees to minus 22 degrees F. During tests at Jacksonville, yellow fever and common malaria mosquitoes, American and German roaches, rat fleas, and flies, died in

unheated areas of "Fury" fighter aircraft that flew over 40 minutes at 40,000 feet.

Insects were also killed when "Skywarrior" bombers flew for three hours at 40,000 feet. Outside temperatures in both instances varied between minus 38 degrees and minus 78 degrees F. In some areas warmed by radar and other electronic equipment, insects survived. During flights at lower altitudes, where temperatures are warmer, insects remained alive. What other insects will do under the same conditions and what various insects will do in other sections of the plane is still not known. During inspection of planes entering Miami (Fla) International Airport, Phalaenidae egg masses occasionally are found. To determine the effect of jet speeds and altitudes on egg masses, eggs of laboratory-reared armyworms were laid on aluminum foil and the foil taped on the wings of jets before takeoff at Patuxent. When the aircraft returned, scientists checked the eggs, usually the most difficult stage to destroy, and found they had been killed. Altitudes were up to 40,000 feet with outside temperatures as low as minus 76 degrees F. More experiments must be made with other species of egg masses before final conclusions can be reached.

Laboratory tests showed that insects die at excessive temperatures, too. They're

unable to stand as much heat as man. To determine how much heat insects could endure from friction in unrefrigerated sections of aircraft in supersonic flight, scientists conducted laboratory tests to estimate the thermal death point of several species. Insects were exposed from 15 to 60 minutes at 104 degrees F in an electric oven.

Northern house mosquitoes and common malaria mosquitoes showed 100 percent mortality at 133 degrees F. Yellow fever mosquitoes and Mexican bean beetle larvae were killed at 122 degrees F and Mexican bean beetle adults, house flies, Japanese beetles, confused flour beetles, and American dog ticks at 131 degrees F. Grasshoppers and Colorado potato beetles were hardest to kill. It took a temperature of 140 degrees F to kill all these insects.

Temperatures were recorded inside a grounded C-47 fuselage to simulate conditions in an un-insulated jet plane. On half the summer days the temperature inside the plane (parked in the sun) reached 120 degrees F or higher. Thus, many insects in uninsulated aircraft in the tropics would be killed throughout the year.

These studies help us understand how air transportation may spread insect pests and what safeguards must be provided through quarantine procedures.

**REPLACEMENT PULLETS**

**WHAT WILL THEY COST?  
 HOW WELL WILL THEY DO?**

In the late fall we completed the raising of 2888 pullets at the Miller and Bushong Manor Farm.

**RECORD OF GROWING PERIOD**

Number of chicks started	2,888 (540 were heavy breeds)
Number of pullets fit to be housed	2,715 (94.01%)
Age	144 days
Mortality in growing	148 (5.12%)
Number of birds culled	25 (0.87%)
Total mortality and Culls	173 (5.99%)

**GROWING COST PER PULLET (144 days)**

Feed cost per pullet (bulk feed)	79 10c
(Feed consumption per pullet - 19.1 lbs)	
Litter cost	1.57c
Grit	0.24c
Electric	0.29c
Gas for brooders	0.72c
Medication	2.00c
Vaccination	1.90c
Newcastle (twice) Bronchitis (twice) Chicken Pox	
Insurance	0.20c

Total cost per pullet (Excluding cost of chick and labor) **86.02c**

\* Costs slightly higher than normal because a special medication was used in the feed for the first six weeks. This extra precaution was taken because forty-eight different strains were housed in one building.

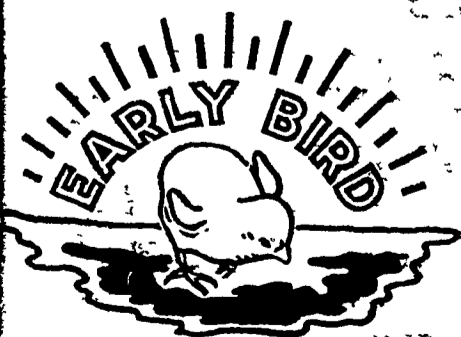
**TALK ABOUT PERFORMANCE** . . . 94.01% acceptable at maturity . . . 79.1c feed cost per pullet . . . 86c total growing cost per pullet. How much more money would you earn each year if your pullet replacement flocks produced records like this?

**S. We have customers who do better than this. More about that later.**

You can enjoy this sort of performance if you start with good chicks, feed a good feed and follow proper management techniques. The chick selection we leave to your own good judgment. But, surely, the results of this twenty and 1/2 week growing period leaves no doubt in your mind as to the best feeding and management program! It's the Early-Bird Feeding and Management Program for Replacement Pullets. Free Management Manual available. Or, get the information right from the source — your Miller and Bushong Serviceman. Call us!



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**High Egg Quality**—Bessies rate very high in interior egg quality for many months of lay. Grading stations report over 95% AA's and A's for Bessie eggs.

**Thick Shells**—Bessies produce eggs with thick shells that the grading stations and housewives demand.

**Excellent Livability**—Bessies are hardy. They give you excellent livability as both chicks and layers because the breeding stock is tested under extreme stress conditions.

**Friendly Layers**—Easy birds to handle, as the result of 20 years of breeding for gentle birds in large flocks and in cages.

Bessies continue to have the high rate of lay, persistency, large white eggs and efficient body size that have long made them popular. These qualities improve year after year under selective breeding and tireless research.

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