Value Of Poultry Improvement Plans To Producers And Buyers Of Chicks, Poults, Eggs Defined

A. S. Rosenwald

"Caveat emptor, let the buyer beware," is an old adage which no longer need challenge poultrymen buying chicks, poults, or hatching eggs.

The participants in the National Poultry Improvement Plan and National Turkey Improvement Plan have voluntarily secured disinterested supervision for the protection of purchasers of chicks or poults. This supervision, based as it is on much research and experience, is assurance that the source breeding birds meet specific minimum requirements. Terms like "Chicks from U.S. Pullorum Clean Stock," "U.S. Pullorum Controlled Chicks," "California U.S. Approved Pullorum Clean Poults," etc., have definite meanings which must be understood to be of value to prospective buyers of baby chicks and poults.

LABELS TO PROTECT POULTRYMEN

Class	Safety	Testing Tolerance
U. S. Pullorum Clean	Excellent	No infection. Turkeys and chickens.
U. S. Pullorum Passed	Very good	No infection at last test. Turkeys and chickens.
U. S. Pullorum Controlled	Good	In California less than 1% infection. Chickens only. Not recognized for turkeys.
U. S. Pullorum Tested	Questionable	Less than 4% infection. Not recommended. Not recognized in California.

The National Poultry and Turkey Improvement Plans are projects sponsored by the United States Bureau of Animal Industry. In cooperation with official state agencies they maintain supervision of plans for pullorum disease control and eradication, and for breeding improvement. While details vary, the standards for the different classifications in all states under the plans must meet the same minimum requirements. Each state cooperating in either of the National Plans has an official state agency. In California the Poultry Improvement Advisory Board and the Turkey Breeding Advisory Board are the official state agencies operating under the authority of the Director of Agriculture by virtue of the California Marketing Act, through marketing agreements between the Director of Agriculture and the participating chicken and turkey producers. These boards are independent agencies, composed of members of the industry which they serve. They employ a competent staff to aid in the administration of the plans.

Scope Of The Plans

Now, just exactly what do these plans mean to prospective purchasers of baby chicks or poults? At the present time the California Poultry Improvement Plan concerns itself only with the supervision of official pullorum disease control and eradication for both chickens and turkeys. In chickens there are three classes in the California pullorum disease program; while in turkeys only the higher classifications are recognized. Effective in the fall of 1947, a Turkey Breeding Improvement Plan was initiated to assist in the verification of the quality of the turkey breeding stock used.

Labels Are Buyer Insurance

The signatories to these Plans have, in all likelihood, operated under self-imposed limitations or standards for much longer than either of the Plans has been in operation. Participation in either Plan means that the official state agency verifies the fact that certain practices are being followed. It provides assurance to the buyer that birds bought under the Plan will meet certain minimum specifications as labeled.

Though participation in the Plan sets certain minimum requirements, it does not set a ceiling on improvement above that level. Breeders who operate outside the California Poultry or Turkey Improvement Plans may have disease control or breeding programs of equal or greater merit. However, no third party verifies minimum qualifications nor supervises their work.

Official Disease Control

At the present time the California Poultry Improvement Plan is concerned only with pullorum disease, a bacterial infection caused by **Salmonella pullorum,** and for which efficient blood tests have been developed. Properly used as an integral part of a program, these tests can effectively curtail or eliminate this disease from a flock of adult birds. Obviously, all infected birds detected by the test must be removed from the flocks as soon as practicable and before any hatching eggs are saved from that flock. If the testing, removal of infected birds, and other details of the disease control program are properly done, prospective buyers can be more certain that pullorum disease, which is carried through some of the eggs from infected birds, will not cause early mortality in a brood of chicks or poults. The California U.S. Poultry Improvement Plan supervision assures correct procedures.

Top Pullorum Grade and Label

The top grade recognized under the Plan, for both turkeys and chickens, is U.S. Pullorum Clean. The stock used to produce the chicks, poults, or eggs passed official blood tests and no infected birds were found. Two official negative tests are required for chickens. All eggs hatched at "U.S. Pullorum Clean" hatcheries must meet identical standards. Containers of this grade of chicks, poults, or eggs have the official label with the words "California U.S. Pullorum Clean" printed in **blue.**

Other Turkey and Chicken Grade

The next class in U.S. Pullorum Passed, also recognized for both turkeys and chickens. Eggs or day-old birds in this grade came from stock which had passed one test at which no infection was found. Previous tests might have indicated some infected birds, which were removed from the flock. No less than 21 days, nor more than 6 weeks later another test was run that showed no infection. The label for this class is printed in **red** and has the words "California U.S. Pullorum Passed."

Other Pullorum Classes — Chickens Only

For chickens only there is one additional class recognized that of California U.S. Pullorum Controlled. In California this classification means that the eggs or chicks came from breeding stock which had no more than 1% infection with pullorum disease at the last test. In many states U.S. Pullorum Controlled means that not more than 2% of the birds in the flock were infected. The label "California U.S. Pullorum Controlled," printed in **black,** designates this class.

Danger From U.S. Pullorum Tested Class

In some states an additional, lower classification, U. S. Pullorum Tested, is recognized. At the present time this means that not more than 4% of the birds from which the young stock originated were infected with pullorum disease at the last test. The California Poultry Improvement Plan does not recognize this class, "U.S. Pullorum Tested," because it was felt that it permitted the use of breeders which were almost certain to have pullorum infection. Thus the purchaser must expect mortality from this disease.

Only participants in the official program may use the official labels in their advertising or on their boxes, and they may use only the label to which the classification entitles them.

Turkey Breeding Plan

Under the California Turkey Breeding Improvement Plan the hereditary qualities of the breeder-turkeys must come up to certain minimum specifications. Selection is supervised by the Turkey Breeding Advisory Board, the official state agency for this Plan in California. The four classifications under this plan are: California U.S. Approved, California U.S. Certified, California U.S. Record of Performance (R.O.P.), and California U.S. Register of Merit (R.O.M.).

CALIFORNIA TURKEY BREEDING IMPROVEMENT PLAN STAGES

Stage	Breeding Quality	Requirements
California U.S. R.O.M.	Superior	Progeny and performance tests plus conformation.
California U.S. R.O.P.	Excellent	Performance tests and conformation.
California U.S. Certified	Very good	Superior toms plus conformation.
California U.S. Approved	Good	Conformation.

At present, the U.S. Approved stage is the one which will probably be used by most California turkey breeders. The turkeys must be selected for normal conformation, posture and gait, and be free of abnormalties. An official inspector must approve the flocks and must "handle" at least 10 per cent of the breeding birds. The California U.S. Certified flocks fulfill these requirements but in addition the hens are mated to superior toms from one of the two higher breeding stages. The California U.S. R.O.P. and R.O.M. stages are still higher and embrace records, made under official supervision, indicative of certain minimum performance in egg production, egg weight, hatchabitity, and body weight. The R.O.M. class in addition includes progeny test records of viability and market quality. Turkey breeders working in these two highest stages should exert a most beneficial effect on the industry through providing superior foundation stock.

A buyer can be sure that turkey poults or chicks come from flocks which have met certain minimum requirements if he buys by label.

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Further details about the Improvement Plans are available from local Farm Advisors, or the Poultry Improvement Advisory Board, 1030 Forum Building, Sacramento 14, California.

Market Adjustment May Face State's Prune Industry

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packed in 25 pound boxes were sold by packers at an average of about 4c a pound f.o.b. California, and by New York wholesalers at close to 5c. California prune crops generally average between 60 and 65 prunes to the pound on a natural weight basis. They gain between 3% and 4% in weight from the water absorbed in processing.

Packers' prices for processed French prunes f.o.b. California shipping points packed in 12 pound boxes during 1934-1938 averaged about 4c a pound for 50/60's which are packed about 59 to the pound. In the face of the very strong demand for food, the f.o.b. prices of 50/60's were held to about 9½c during the war by price ceilings and by government subsidies of about 3c a pound to consumers. With the removal of price ceilings and subsidies, f.o.b. prices for 1946 pack rose to about 16½c for 50/60's and held near this level until about April, 1947. Then under the pressure of slow trade movement and large stocks, prices began to drop sharply until f.o.b. sales were down to about 13c for 50/60's in July. Prices continued to fall and the new 1947 pack was quoted generally at about 11½c for 50/60's during October and early November.

United States retail prices of dried prunes averaged close to 10c a pound during 1934-1938 and about 17c during 1942-1945 under price ceilings and a subsidy of about 3c a pound. The price ceiling and the subsidy were removed from the 1946 crop and at the same time farm prices rose greatly. As a result, retail prices for the 1946 crop rose to a record season's average of about 25c a pound. They reached a peak of about 26c in the spring of 1947 and had declined very little by August. It usually takes a few months after f.o.b. prices fall substantially in California before retail prices fall in the East.

Foreign Competition Uncertain

With normal weather conditions and the better peacetime care that may be expected in the war-damaged orchards of Europe, total foreign production of dried prunes during the next few years may exceed the wartime average of about 25,000 tons, but will probably still be below the prewar level of about 50,000 tons. Whether European production of dried prunes during the next 10 or 15 years will rise to, or above the prewar level seems almost impossible to guess, largely because of the great changes in political and economic conditions that have taken place and that may occur in the future in European prune producing and importing countries, particularly in Germany and in those countries under Soviet domination.

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Ladybirds, Lacewings, Parasites, Tested As Long-tailed Mealybug Controls In California Citrus

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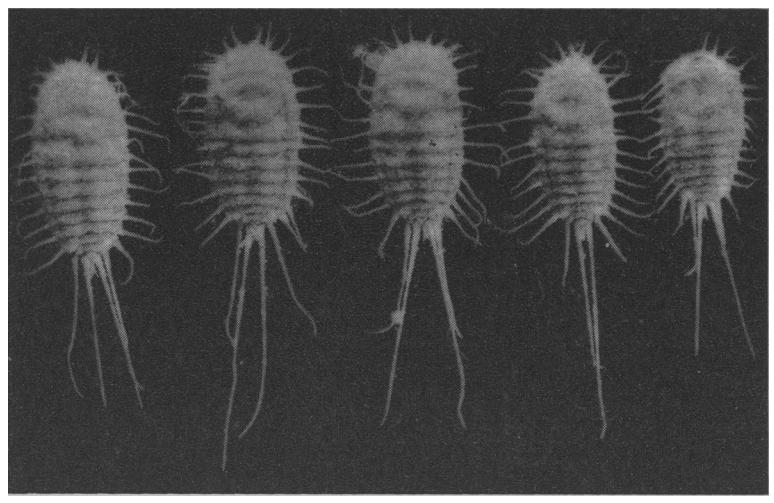
same time preliminary tests have been conducted to determine the effect of various insecticidal materials on the natural enemies of the long-tailed mealybugs. Although these studies are not yet complete, certain of the results may be of interest now.

In addition to these local investigations, the University's Division of Biological Control has sent a scientist to South Africa to search for natural enemies of pests of California agriculture. Part of his task is to obtain parasites or predators of the long-tailed mealybug.

Thus far, aside from natural enemies of other pests, one mealybug predator species and one parasite species new to California have been received and are being reared and tested in the insectary.



The long-tailed mealybug—PSEUDOCOCCUS LONGISPINUS—a relatively recent pest of citrus. Insect enemies of the long-tailed mealybug are being studied as possible controls.

As numbers increase they will be liberated in the field in mealybug infestations.

Parasites and Predators Identified

The work during 1946 demonstrated that several natural enemies in addition to the parasites introduced in the 1930's, were killing the long-tailed mealybugs. Six species of primary parasites and seven species of predators were reared.

Among the parasites, **Anarhopus sidneyensis,** was by far the most common, comprising 85% of those recovered. **Tetracnemus pretiosus** comprised 9%; **Coccophagus gurneyi** 4%; and **Tetracnemus peregrinus** 1%.

Among the predators the California brown lacewing,—**Sympherobius californicus** — was the most common, comprising 74% of those recovered; whereas the Australian ladybird beetle — **Crytolaemus** — comprised 16%, and the California green lacewing **Chrysopa californica**—10%.

Based on an average for 10 citrus groves, records graphically portray the changes which occurred in the long-tailed mealybug and its predator and parasite populations during 1946.

Records show that the long-tailed mealybug started to build up rapidly in early spring. Natural enemies started to increase soon thereafter and, in general, effectively stopped the long-tailed mealybug outbreak by May and drastically reduced it by June.

The increase was not checked until mealybugs had reached economic proportions in certain groves.

In all groves studied, long-tailed mealybugs were reduced to low levels by June or July. They remained low until the following spring.

Field observations indicated that predators, not parasites, were primarily responsible for this control.

Careful analysis of data from the population censuses, as well as experimental tests, confirmed these observations. The predators showed the ability to increase in numbers and overtake the mealybug populations as was shown by the relative change in their proportions from March and April to May, June and July. The parasites did not show this ability.

When predators were excluded from trees by treatment with DDT, which did not exclude the principal long-tailed mealybug parasites, it was evident that the parasites, although beneficial, were not nearly as effective as were the predators on trees not treated with DDT.

In the spring of 1947 long-tailed mealybug populations again started their annual upward trend. For some reason, however, the most common and efficient natural enemy of 1946, the California brown lacewing, did not appear in numbers as early as it had previously.

Parasites, as in 1946, apparently were not an efficient regulatory factor. The other common predators, Australian ladybird beetle and California green lacewing were not able to overtake the mealybug as early as the brown lacewing had done the year before.

As a result, long-tailed mealybug population increases in general were not checked as soon or as effectively as in 1946. General reductions occurred principally in July in 1947.

The green lacewing appeared to be about as effective as the brown lacewing in the final subjugation of the long-tailed mealybug in 1947, although the Australian ladybird beetle also became common in certain groves.

Effect of Insecticides

Preliminary studies on the effect of various insecticides on predators and parasites of the long-tailed mealybug indicate that most residues, even certain ones such as talc, not possessing toxic properties, can slow or even stop the increase of predators for an appreciable period of time. DDT is especially toxic and long-acting in its adverse effects on predators but it had no apparent effect on the principal parasite of the long-tailed mealybug.

Studies to Continue

Studies projected for 1948 are designed to test the relative effects of mass liberations of both larvae and adults of the California brown lacewing, the Australian ladybird beetle and the California green lacewing. The Orange County Department of Agriculture will cooperate in this work.

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