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## EC1488 Hybrid and Standard Bred Chicks

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Williams, Irven L., "EC1488 Hybrid and Standard Bred Chicks" (1947). *Historical Materials from University of Nebraska-Lincoln Extension*. 2603.

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January  
1947

Nebraska  
COOPERATIVE EXTENSION WORK  
IN AGRICULTURE AND HOME ECONOMICS  
U. of N. Agr. College & U. S. Dept. of Agr. Cooperating  
W. H. Brokaw, Director, Lincoln

Extension  
Circular  
1488

HYBRID AND STANDARD BRED CHICKENS

By

Irven L. Williams, University of Nebraska

The exceptional yields of corn obtained through hybridization have led many to believe that any organism that can be termed a hybrid will be a high producer.

The word, "hybrid", is used universally in chick advertising, but the term, "cross-bred", would be most accurate for most of the chicks now offered under the hybrid name. Recently the word, "hybrid", has also been used with the phrase "bred like hybrid corn".

The Fair Trade Practice Committee of the International Baby Chick Association, held open hearings in July 1946, and adopted standard terminology to be used by the Federal Trade Commission in determining honesty in advertising and other phases of interstate commerce. The definitions which were adopted were for the sole purpose of clarifying and standardizing some of the terms used in poultry breeding. The terms are defined as follows:

1. Crossbred: A chicken produced from a mating between different varieties.
2. Inbred: A chicken resulting from several generations of the mating of relatives so that the inbreeding will exceed the equivalent of three generations of brother-sister matings (an individual exceeding 50 percent inbred).
3. Hybrid: The first generation resulting from a cross between unrelated chickens, which are the progeny from the mating of two or more inbreds with no common ancestor in the four immediately preceding generations.
4. Single Cross Hybrid: The first generation, resulting from a cross between two inbreds with no common ancestor during the four immediately preceding generations.
5. Three Way Cross Hybrid: The first generation produced by the mating of a single cross to an inbred with no ancestor common to the parents of the single cross during the four immediately preceding generations.
6. Four Way Cross Hybrid: The first generation produced by the crossing of two single crosses; involving four inbreds with no common ancestor during the four immediately preceding generations.
7. Top Cross Hybrid: A chicken produced by mating an inbred to a non-inbred.



Inbreeding tends to bring together a greater number of factors or genes in the homozygous condition in the offspring. Inbreeding brings together undesirable as well as desirable factors. Since many recessive genes have less desirable effects than dominant ones, inbreeding has the effect of bringing out undesirable characters and a general weakening of the strain, which becomes more pronounced with continued mating of closely related birds. By inbreeding and discarding individuals exhibiting the undesirable characters, it would appear as though the poultry breeder could eventually eliminate from a given strain of birds all the undesirable characters. To date, this has not been accomplished, since many of the undesirable traits cannot be discarded without also discarding many desired characters or entire families of birds.

The added vigor obtained from crossing inbred lines of corn (hybridization) has been termed "heterosis". Hybridization in poultry to date has not achieved the results as with corn. Egg production of hybrid chickens now available to producers cannot be expected to compare with the yield of hybrid corn.

A comparison of the results for 1946 of the various Standard Egg Laying Contests will give some idea of the egg producing ability of hybrids as compared to standard bred birds.

Table I

Results of all Standard Egg Laying Contests in the United States in 1946.

Breed	Test	Eggs	
		Ave. per Hen	Total Pen
S. C. White Leghorn	Penna.	307.51	3998
Rhode Island Red	Penna.	282.46	3672
New Hamp. Red	Florida	280.30	3644
Barred Rock	New Jersey	277.00	3602
White Rock	Florida	249.84	3248
Hy-line Hybrid	Illinois	244.38	3177

Table I gives the high pen of each breed at all standard egg laying contests for 1946, also the average per hen in the contest. A pen consists of 13 birds. At the Illinois contest, a pen of hybrids had a higher egg production record than any other pen of birds in that contest, and yet they were sixth among all breeds in the United States. This pen of 13 birds laid 3177 eggs with an average of 244 eggs per bird. At the Pennsylvania contest, a pen of 13 White Leghorns produced 3998 eggs or an average of 307 eggs per bird.

A summary of the production records of all contests in 1946 furthermore shows that the hybrid pen at the Illinois contest was exceeded in eggs produced by pens of S. C. White Leghorns, Rhode Island Reds, Barred Plymouth Rocks, New Hampshires, and White Plymouth Rocks.

Hybridization in poultry breeding is relatively new, and many years of testing the various single and four way combinations will be required before its place in a poultry breeding program is established.