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CIRCULAR NO. 66

FEEDING FOR WINTER EGGS

BY

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FIG. 1.—These results were secured by the addition of meat meal to the hen's ration.

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In order to secure winter egg production it is **absolutely necessary that the hens be properly fed.** If they are fed only a grain ration they should not be expected to produce winter eggs. In addition to the grain a dry mash mixture containing such ingredients as meat scrap, meat meal, or a high grade of digester tankage, added to the shipstuff,* ground oats, alfalfa meal, or corn meal must be fed. (See page 3 for ration.)

Feeding Suggestions.

It should be remembered that **no one ration will fit all conditions.** The cheapness and availability of the feeds should be considered. Ready-mixed poultry mashes are very satisfactory and, if readily available and not too high priced, may be fed.

If corn and corn meal are the only available feeds, a dry mash of three parts corn meal and two parts meat scrap should be fed with the whole or cracked corn. In this case the birds should be made to consume twice as much grain as mash, by weight.

Feeding should be done at regular hours, preferably twice a day, once in the morning and once in the evening.

Keep the **water pans clean** and filled with pure, fresh water.

If skim-milk is fed, avoid changing from sweet to sour, or the reverse. It is best to feed sour milk continuously.

While the appetite should always be kept keen, nevertheless the birds should be fed all they want to eat.

Feeding is but one of the **four essential means of securing high egg-production.** The other three are: pure-bred birds of a high-laying strain; strong, vigorous and healthy birds; and a comfortable house with plenty of room for exercise. From this it may be seen that correct feeding alone cannot give maximum egg-production.

Necessity of A Meat Feed.

The fact that a meat feed is essential is clearly brought out by an experiment covering a period of twelve months conducted at the Kentucky Experiment Station poultry farm. (See cut on title page.)

Thirty S. C. White Leghorn pullets were divided into two pens of 15 each, both pens receiving the same grain ration. Pen 1 received a mash of equal parts corn meal, bran, middlings, ground oats and meat meal, while Pen 2 received the same mash minus the meat meal. Pen 2 averaged but 23.6 eggs per bird for the year, while the meat meal pen averaged 124.2 eggs per bird, showing that the **addition of meat meal to the mash increased the egg production about five times.**

At the Purdue Experiment Station (Indiana) Philips† fed three pens of White Plymouth Rock pullets for three years, each pen consisting of 30 birds. All pens received the same grain ration and the same mash, with the exception of the meat-scrap pen which had meat scrap added to the mash. The meat-scrap pen averaged 135.9 eggs and the skim-milk pen 140.2 eggs, while the check pen, which received neither meat scrap nor skim milk, averaged but 61.2 eggs. This showed that **skim-milk and meat scrap have practically the same value.**

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*Equal parts bran and middlings or shorts.
†Indiana Exp. Sta., Bul. 218—A. G. Philips.

If sour skim-milk or buttermilk is readily available, it may be fed in place of the meat scrap, in which case it should be kept before the birds in pans or pails, instead of drinking water. To get the best results, **30 hens should drink about a gallon of milk a day.** If that amount cannot be secured or the birds will not drink that much, a small percentage of meat scrap should be added to the mash.

RATIONS

Grain Mixtures

(1)

	Pounds		Quarts
Cracked Corn	50	or	30
Heavy Oats	20	or	20
Barley	20	or	13¼
Wheat	10	or	5¼
	100 Lbs.		

(2)

	Pounds		Quarts
Cracked Corn	70	or	42
Heavy Oats	30	or	30
	100 Lbs.		

(3) 100 lbs. (60 qts.) Cracked Corn.

Dry Mash Mixtures

(1)

	Pounds		Quarts
Shipstuff	40	or	60½
Corn Meal	20	or	18
Ground Oats	20	or	46½
*Meat Scrap	20	or	11
	100 Lbs.		

(2)

	Pounds		Quarts
Shipstuff	50	or	75½
Corn Meal	30	or	27
Meat Scrap	20	or	11
	100 Lbs.		

Or, if shipstuff cannot be secured:

(3)

	Pounds		Quarts
Corn Meal	40	or	36
Meat Scrap	25	or	13¾
Ground Oats	20	or	46½
Alfalfa Meal	15	or	27
	100 Lbs.		

Any one of the grain mixtures may be fed with any of the mashes. The ground oats and corn meal in mash mixture No. 1 may be reduced to 15 lbs. each and 10 lbs. (18 qts.) of alfalfa meal added.

Oyster shell or ground limestone, mica grit and charcoal should be kept before the birds at all times.

The necessity for the shell-forming material is indicated by an experiment conducted at the Kentucky Experiment Station poultry farm from January 1, 1918, to May 31, 1918, with sixty late-hatched S. C. White Leghorn pullets. The pullets were divided into four pens of 15 birds each, as nearly alike in size, vigor and development as possible. The birds were kept housed thruout the experiment in the same kind of houses and fed the same ration. The only varying factor was that of the shell-forming material and grit.

The pens were divided as follows:

	Average egg-production per hen for 5 months.
Pen No. 1 No grit. No oyster shell	31
Pen No. 2 Grit only	29
Pen No. 3 Both grit and oyster shell	48
Pen No. 4 Both grit and ground limestone	54

It may be seen from this table that **lime is a limiting factor in egg production** and that it may be furnished in the form of oyster shell or ground limestone. The grit used contained little or no lime and did not supply shell-forming material.

*A commercial name for a by-product from the packing houses.

Green feed should be fed during the winter and also during the summer if the birds are in confinement. Some of the best green feeds are sprouted oats, mangel beets, cabbage and kale.

How to Feed.

The grain mixture should be scattered in a straw litter from six to ten inches deep; about one-third the total amount in the morning and two-thirds in the evening. **The birds should be made to scratch hard and work hard for every grain they get.** The dry mash should be placed in a hopper (see Fig. 2) and kept before the birds at all times.

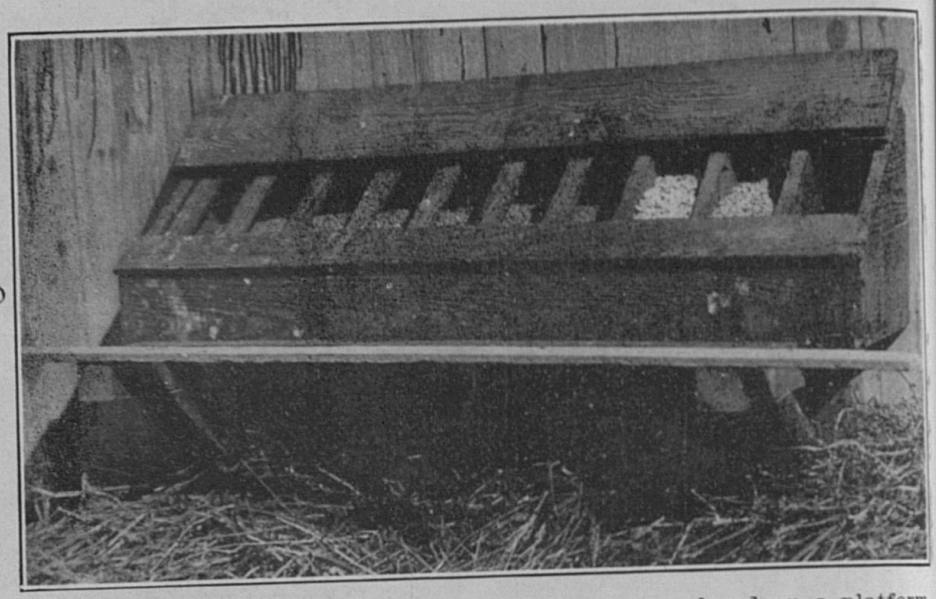

FIG. 2.—Dry mash feed hopper for laying hens, placed on a platform to allow maximum floor space, and to keep straw out of the mash. (Note the three compartments in the right hand side for oyster shell, grit and charcoal, respectively.)

Proportion of Grain to Mash.

The meat scrap or meat meal should comprise from ten to twelve per cent. of the total amount of feed consumed; hence, if a mash consisting of 20 pounds of meat scrap per 100 pounds of the mash is fed, **equal quantities of grain and mash should be consumed.** The easiest way to keep the proportions correct is to weigh out the desired amounts of grain and mash at the same time, putting the mash into the hopper and the grain into a bucket which is hung in the house. The amount of grain fed should be determined by the amount of mash the birds consume, so that the feed bucket will be empty when the mash in the hopper has been eaten. The amount of feed to provide for the flock may be estimated on the basis that a flock of ten hens will consume a total of 2 to 2½ pounds of grain and mash in a day.