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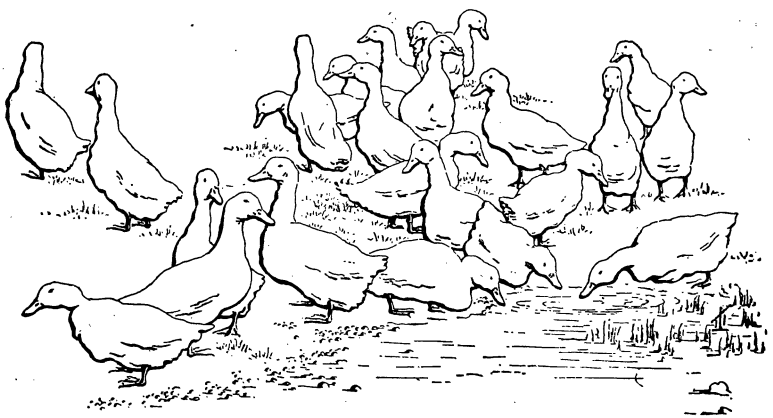

HOW MUCH MEAT SHALL DUCKS EAT?

F. H. HALL AND W. P. WHEELER.

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* Connected with Fertilizer Control.
‡ In Second Judicial Department.

POPULAR EDITION *

OF

BULLETIN No. 259.

HOW MUCH MEAT SHALL DUCKS EAT?

F. H. HALL.

Ducks must have animal food.

Through instincts inherited from long lines of wild ancestors, the domestic ducks are water-loving birds with well-developed appetites for fish, worms, snails, mollusks, insects and other kinds of animal food. It is possible to raise ducks successfully and profitably—perhaps easier and better, at least so far as certain breeds are concerned—with a minimum of water, since this is largely an external requirement; but no system of breeding or feeding has as yet developed ducks that can do their best without any animal food. If given a plentiful supply of good, clean, drinking-water, to moisten the food and to maintain proper fluidity in the blood, the secretions and the excretions, ducks can dispense with the swimming pond or bathing pool without great detriment to health or growth. Whether or not they are happy under such conditions the animal psychologist must decide.

But to take away the chance to hunt for snails, worms and insects; and to feed ducks upon grains alone will inevitably result in disaster. In a most conclusive test along this line made at the Station several years ago, a varied and palatable

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*This is a brief review of Bulletin No. 259 of this Station, on the Proportion of Animal Food in the Ration for Ducklings, by W. P. Wheeler. Anyone interested in the detailed account of the investigations will be furnished on application, with a copy of the complete bulletin. The names of those who so request will be placed on the mailing list to receive future bulletins of the Station, popular or complete as desired. Bulletins are issued at irregular intervals, as investigations are completed, not monthly.

grain ration, well balanced so far as the commonly considered nutrients are concerned but without animal protein and deficient in the ash which is found in animal products, was fed to a lot of ducklings. Half of them died within four weeks; and the others, though saved by the addition to the ration of a little meat meal, remained poor, scrawny, half-developed weaklings throughout the test. A similar lot, fed a ration of the same apparent nutritive value, but with part of the protein from animal products, and in consequence also richer in ash, throve, remained healthy throughout the test and made a rapid and profitable growth.

Later, the lack of sufficient ash in the all-grain rations was proven the cause of the inferiority of such rations in feeding chicks; but with ducklings the addition of ash did not make the grain rations equal to the others in growth-producing power, although it greatly improved them. Practically speaking, *ducks must have some animal food.* Rations on which they would grow might possibly be made up without such food; but not from materials ordinarily used.

How much?

Recognizing the importance of this element of rations for ducklings, it is essential that we know how much is necessary, how much may be fed with profit, and how much the birds can eat without injury. Recent experiments have been planned to bring out these points. In a preliminary feeding trial with two lots of ducklings of various ages, the rations contained only sand, green alfalfa and a combination of animal foods, including "meat meal," "animal meal," dried blood, bone meal and milk albumen (a by-product from the milk-sugar factories). For four weeks these animal products supplied 94 per ct. of the dry matter of the rations and 98 per ct. of the protein; yet the ducklings ate these rich rations, with a ratio of about 1:1, without apparent ill effect and made good growth; though the cost was high, of course, as these are all expensive feeds as compared with grains. As the birds grew older and took on weight the rate of gain became slower and the cost of production excessive.

Large proportion best for young birds.

In another experiment, planned to bring out the effect and value of various quantities of animal food in the rations, four similar lots of ducklings, each of 28 birds one week old, were fed for ten weeks. Two grain rations were used as the basis, one containing seven parts corn meal, six parts animal meal, four parts wheat middlings and three parts wheat bran; and the other composed of two parts Chicago gluten meal and one part each of germ gluten meal and old process linseed meal. These were fed in varying proportions to the different lots of ducklings and were so supplemented with animal meal and other foods that one lot received about 20 per ct. of the protein in the ration from animal food, the next lot 40 per ct., the next lot 60 per ct., and the fourth lot 80 per ct. Bone ash was used in the rations with smaller amounts of animal meal to prevent any possible deficiency of mineral matter in any ration, and to avoid any great differences in amount of ash; for the animal meal contained so much bone that rations in which it was freely used had a high percentage of ash constituents. This bone ash, which would be unnecessary for ordinary feeding, added considerably to the cost of the rations. The most important results of the feeding are shown in the summary table below:

AVERAGE GAIN OF DUCKLINGS ON RATIONS CONTAINING DIFFERENT PROPORTIONS OF ANIMAL FOOD.

Proportion of protein from animal products in ration.	First three wks. of test.			First seven wks. of test.			Entire ten wks. of test.		
	Average gain.	Food * for each pound gain.	Cost of each pound gain.	Average gain.	Food * for each pound gain.	Cost of each pound gain.	Average gain.	Food * for each pound gain.	Cost of each pound gain.
	Ozs.	*Lbs.*	*Cts.*	*Ozs.*	*Lbs.*	*Cts.*	*Ozs.*	*Lbs.*	*Cts.*
20 per ct.....	15.9	2.5	3.6	56.3	3.0	4.2	71.7	3.9	5.4
40 per ct.....	19.1	2.2	3.3	64.2	3.0	4.6	78.8	4.0	6.0
60 per ct.....	22.5	2.1	3.3	68.4	3.0	4.7	82.7	4.0	6.2
80 per ct. ...	20.8	2.3	3.8	66.2	3.1	5.2	78.7	4.2	7.0

* Dry matter.

From these figures it can be clearly seen that in the first month or so of the duckling's life a large proportion of the food can,

with direct profit, be of animal products. With 60 per ct. of such food in the ration the birds grew more rapidly than upon any other ration, while for the first month the cost of production was as low as with any. As the birds became larger the direct financial advantage in using large proportions of animal food lessened and finally disappeared; but the gain which would result from the early attainment of marketable size still remained; for when the "60 per ct." lot would have weighed about 145 pounds as prepared for market, the "20 per ct." lot would have weighed only 125 pounds. The advantage of getting birds ready for market quickly is often so decided that greater profit would lie with the more costly ration. In this case the heavier feeding of animal products saved about two weeks time, or produced 15 per ct. more of poultry in the same time.

Practical application. So far as this experiment goes, it seems that it will pay to feed freely of animal food during the first three to five weeks, and depend after that more on increasing proportions of the cheaper grain foods. The exact proportions most profitable to use and the best form of animal food to select will depend upon the relative cost of different foods, the demand for the product and the price obtained.

Contents

Contents (Continued)