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Current Information Letter

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AGRICULTURAL EXTENSION DIVISION—PAUL E. MILLER, DIRECTOR

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FILE UNDER: ANIMAL HUSBANDRY -- Feeding - Poultry

Relative Value of Vitamin D Products for Poultry -- By H. J. Sloan, professor of
poultry husbandry.

In view of the present situation various kinds and sources of vitamin D are being offered to poultrymen. On the basis of the information available the following is our opinion of the relative value of these products.

A and D Feeding Oil--Straight cod-liver oil which has commonly been used is extremely high priced at the present time. In view of its scarcity the feed control officials have permitted the sale of what is known as "A and D feeding oil". This is an oil base in which various kinds of vitamin A and D supplements have been added to provide different levels. These feeding oils are being offered at prices of four to five cents less per pound for the concentrated product than the straight cod-liver oil or sardine oil products of the same potency. The various A and D feeding oils offered are usually of the following grades: 400-D 3000-A, 400-D 2000-A, 400-D 1000-A and 100-D 600-A. The quotations on the latter are usually based on a price per gallon, the others on a price per pound. The regular fish oils are commonly offered in similar potencies. So long as the potency is guaranteed in A. O. A. C. (Association of Official Agricultural Chemists) chick units we feel that the buyer may well take advantage of the lower price because it is the D primarily for which the oil is bought and this is relatively stable regardless of the kind of oil used as a carrier. We feel that the oils with the lower vitamin A content can be used if a moderate amount of alfalfa leaf meal is already being used in the mash. Where little or no alfalfa is being fed, the oils with a higher vitamin A potency should be used.

In comparing the relative costs of the fortified or concentrated oils with the regular low potency oils a comparison may be made as follows: 400-D 3000-A oil at 52¢ per pound is equivalent to approximately 13¢ per pound for a 100-D 600-A oil which is equivalent to approximately \$1.05 per gallon. At the present time 100-D feeding oil is quoted at \$1.40 wholesale and 85-D cod-liver oil at \$1.75. We cannot justify the high cost of straight cod-liver oil on the basis of the price for the concentrated products. In feeding these various oils an amount should be used that is proportional to the potency.

Dry Vitamin D Products--Also on the market are various kinds of so-called dry vitamin D such as Delsterol, D-Sec and others. These are activated animal sterol of the same type and are quite satisfactory for poultry if the D content is guaranteed. These, of course, contain no vitamin A and consequently are not worth quite as much per pound as are the oils based on the same vitamin D content per gram. These products are as

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satisfactory in supplying D for chickens as is cod-liver oil or other vitamin D fish oils. These products should not be confused with vitamin D in irradiated yeast which is not satisfactory for poultry and consequently irradiated yeast should not be recommended as a vitamin D source for various kinds of poultry. Irradiated ergosterol which is the active substance in irradiated yeast would likewise be of little value. The various powders that are used as carriers for the dry vitamin D should be valued primarily on the basis of their vitamin D content even though they are claimed to have some milk substituting value, because the quantity used is so small that only small amounts of milk vitamins would be added.

Ultra Violet Lamps--More recently the question of the use of various kinds of ultra violet lamps, particularly the one known as the General Electric S-4 sun lamp has come in for discussion. There seems to be no question that they can supply ample vitamin D but on the basis of the work done at Ohio we estimate that considering the depreciation and cost of current at three cents per KWH these lamps are somewhat more expensive for laying and breeding hens than the concentrated vitamin D fish oil. There is nothing to recommend them in addition to the vitamin D since so far as we know they have no special qualities in addition to this particular one. Where electric rates are higher than three cents per KWH they are likely to be much more expensive than the concentrated fish oils or feeding oils. Since the bulbs are rather expensive, accidental breakage would increase the cost appreciably. In the early brooding of chicks there is not much difference because of the relatively small amount of light that needs to be used.

Generally recommended levels for various uses:

<u>Source</u>	<u>Chick Starter</u>		
	<u>All-mash</u>	<u>Laying Mash*</u>	<u>Breeder Mash*</u>
100-D fish or feeding oil	0.5%	2.0%	2.5%
400-D fish or feeding oil	0.125%	.5%	.6%
S-4 sun lamp	1 hour daily	1.5 hour daily	2 hours daily

The sun lamp should be suspended about 30 inches above the floor over the feed hoppers. Mash hoppers for hens should be low (about 14 inches to top of feeder) to give clearance below lamp.

*Assuming equal parts grain and mash are used.