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IODINE TO SUPPRESS OVULATION

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Additions of iodine to egg production diets have been used experimently to delay sexual maturity in pullets. A low energy 14% crude protein grower diet with 0, 2,500, 5,000, and 10,000 ppm iodine added in the form of potassium iodide was fed to replicate pens of pullets on litter and replicate groups of pullets in multiple hen cages. All pullets had been grown under nine hours of light per day from eight weeks until the start of the experimental period, at which time day length was increased to twelve hours. The dietary treatments were started at 17, 18, and 19 weeks of age. All pullets were on treatment for four weeks. They were changed to a 16% crude protein layer diet after the four week treatment period.

Groups of pullets receiving the high level of iodine consumed significantly less feed during the treatment period. This level of iodine was effective in delaying sexual maturity, (Table 1). Fertility and hatchability were adversely affected by the two highest iodine levels. These differences remained evident over several months, (Table 1). The amount of iodine excreted into the egg was unacceptably high for several weeks following the treatment period, (Table 2).

Experimental work this year will involve supplementation with 10,000 ppm iodine. A hormone-type drug will also be tested at various levels for its effectiveness in retarding ovulation in twenty-week-old pullets.

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TABLE 1. HEN-DAY PRODUCTION AND HATCHABILITY OF ALL EGGS  
SET FROM HENS FED VARIOUS LEVELS OF IODINE

Age in Weeks	ppm iodine			
	0	2,500	5,000	10,000
26	12.3*	9.6	8.7	5.9
	67.6**	57.4	55.7	22.2
30	67.8	68.4	65.7	63.7
	77.5	76.1	68.9	60.7
34	79.1	79.8	69.7	78.2
	83.6	81.4	72.3	53.8
42	75.7	76.3	71.4	74.6
	62.5	81.4	57.8	44.9
48	72.6	74.1	72.0	70.3
	85.2	86.6	77.5	68.0

\*Percent production.

\*\*Percent hatchability.

TABLE 2. PROTEIN BOUND IODINE IN POOLED EGG ALBUMEN SAMPLES

Diet	Weeks after withdrawing experimental diet		
	3	5	7
Control	1.7*	1.4	1.3
2,500 ppm iodine	28.2	3.5	13.4
5,000 ppm iodine	28.6	12.3	18.0
10,000 ppm iodine	46.0	19.4	24.0

\*Amount of iodine in microgram percent.