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(1248 Product Used)
PCB/RESULTS MATURE LAYING HENS
(Cornell University)

Diet Used - Cornell Random Sample Test Laying Mash

Birds Used - Mature Laying Hens

PCB Levels - (PPM) 0, 0.5, 1.0, 10.0, 20.0

Results -

A. Egg shell strength - normal, no effect on shell thickness.

B. Fertility - Hens artifically inseminated - Semen PCB free - Normal.

C. Embryos - Fully mature and normal. No abnormal amount of early embryonic mortality. Birds pipped shells but lacked vigor to emerge from shell. Embryos appeared "damp."

D. PCB Accumulation in Fatty Tissue*

Dietary PCB Level PPM	Diet Consumed Wks.	PCB Level in Fat PPM
0		0
0.5	1	1.54
	4	2.16
Concentration ratio 1-8 wks. = 2.01	8	3.10
1.0	1	2.20
	4	4.40
Concentration ratio 1-8 wks. = 3.0	8	6.60
10.0	1	10.4
	4	22.7
Concentration ratio 1-8 wks. = 3.7	8	37.0
20.0	1	16.3
	4	54.7
Concentration ratio 1-8 wks. = 5.1	8	82.7

*Continuing accumulation in fat with time, when birds put back on control diet for 4 weeks 10 PPM, 8 week group dropped to 24 PPM; 20 PPM, 8 week group dropped to 44.7 PPM.

MONS 090501

E. Accumulation in Eggs*

Dietary PCB Level PPM	Diet Consumed Wks.	PCB Level in Eggs PPM
0		0
0.5	4	0
	6	0
	7	0
	8	.22
1.0	4	0
	6	0.42
	7	0.45
Concentration ratio 6-8 wks. = 1	8	0.41
10.0	4	2.2
	6	2.8
	7	3.1
Concentration ratio 6-8 wks. = 1.1	8	3.1
20.0	4	4.5
	6	5.37
	7	5.72
Concentration ratio 6-8 wks. = 1.3	8	7.04

*Leveling off and plateaus after about 6 weeks. 10 PPM 8 week group dropped to 1.72 PPM at 4 weeks, 20 PPM 8 week group dropped to 3.38 PPM at 4 weeks on PCB free feed.

F. Egg Production (8 weeks on feed)

PCB Level PPM	Level of Production %
0	77
0.5	76
1.0	77.4
10.0	70.4
20.0	67.0
PCB Free After 8 Weeks	
10.0 (0-8 wks.)	Normal after 2 weeks
20.0 (0-8 wks.)	Normal after 4 weeks

G. Hatchability

PCB Level PPM	Diet Consumed Wks.	% Hatchability
0	4	89.8
0.5	4	91.3
1.0	4	88.2
10.0	4	65.4
20.0	4	4.0
0	8	90.5
0.5	8	91.6
1.0	8	93.7
10.2	8	50.0
20.0	8	2.4

H. Tissue Levels (Muscle)

Dietary PCB PPM	Diet Consumed Wks.	PCB Level
0	2	0
0.5	2	0
1.0	2	0
10.0	2	.44
20.0	2	.85