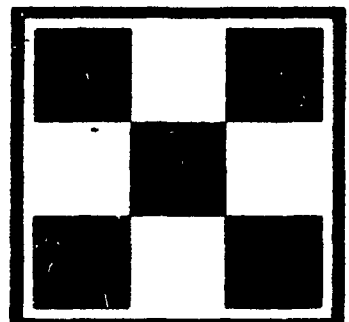


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# Purina BIO-MITTENT™ Lighting Program



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### The Bio-Mittent™ Lighting Program

The Purina® Bio-Mittent Lighting Program is a unique lighting program for pullets and layers which saves energy and money without adversely affecting growth or egg production. It supplies pullets and layers with 15 minutes of light and 45 minutes of darkness each hour they receive light under a standard lighting program. This intermittent lighting program resulted from the discovery that chickens will grow and produce well when supplied 15 minutes of light per hour instead of 60 minutes.

### Why Bio-Mittent Lighting Works

Bio-Mittent Lighting works because short periods of light repeated often are interpreted by the chicken as constant light. The chicken's hormonal reproductive control system does not recognize darkness unless she is without light over 3 hours. Thus, the dark periods are never perceived as such by the hen's system. For Bio-Mittent Lighting to provide maximum benefits, light tight housing is required. In non-light tight houses, electrical savings are realized but feed savings are slightly less. In open-sided housing, the advantage is only electrical savings. However, this still can be significant.

### Potential Bio-Mittent Lighting Savings Per Cycle For John Smith Egg Farm, Inc.

No. of light bulbs	350	Feed price = \$180/ton = \$.09/lb.	Timeclock	\$120
Wattage per bulb	40	No. of layers = 50,000	Override timer	\$ 30
Cost/kilowatt	4*	Type housing <input type="checkbox"/> Brownout	Wiring/Installation	\$130
		<input checked="" type="checkbox"/> Blackout		

#### Electrical Savings

350 bulbs x 40 watts/bulbs/hr ÷ 1000 watts/kilowatt = 14 kw/hr			
Standard Lighting Program:	14 kw/hr x 17 hrs/day x .04/kw	=	\$9.52/day
Bio-Mittent Program:	14 kw/hr x 4.25 hrs/day x .04/kw	=	\$2.38/day
Difference in Standard vs. Bio-Mittent Lighting		=	\$7.14/day
No. of days Bio-Mittent Lighting used/cycle		x 240 days/cycle	\$1713.6/cycle
No. of layers		÷ 50,000 birds	3.4*

Electrical Savings/Bird/Cycle

#### Feed Savings

For Non-Light Tight Houses. 0 1 lbs/doz	0.2 lbs/doz feed savings	
For Light-Tight Houses 0 2 lbs/doz	x 15 doz eggs/bird/cycle/while on Bio-Mittent Lighting	
For Open-Sided Houses No feed savings, only electrical	3.0 lbs/bird/cycle	
	x .09/lb feed cost	
	Value of Feed Savings/Bird/Cycle	.27*

#### Extra Saleable Eggs

15 doz eggs/bird/cycle during x 2.7% Cracks & Checks x 10% Fewer Cracks & Checks = .04 doz.

Bio-Mittent Lighting	(Estimate)	with Bio-Mittent Lighting
Value difference of Saleable Grade A vs. Cracks & Checks		x .20*/doz
	Value of Extra Saleable Eggs/Bird/Cycle	.8*

Value of Extra Saleable Eggs/Bird/Cycle

TOTAL VALUE/BIRD/CYCLE 31.2\*

No. of birds x 50,000

GROSS VALUE to John Smith Egg Farm \$15,600.00

#### Cost To Implement

Timeclock (with 15 minute setting)	\$120.00
Override timer	\$ 30.00
Wiring and installation	\$150.00
TOTAL COST to John Smith Egg Farm	\$300.00

Net Value = Gross Value - Total Cost  
to John Smith Egg Farm \$15,300.00

### Bio-Mittent Lighting for Pullets

The function of a pullet lighting program is to control sexual maturity. As with a standard lighting program, on the Bio-Mittent Lighting program pullets receive constant light from 1-14 days of age. Afterwards, until 20 weeks of age, the Bio-Mittent Lighting Program is implemented. The intermittent pattern of 15 minutes light/45 minutes darkness per light hour is used during the time lights are normally used.

### Bio-Mittent Lighting For Layers

When the hours of light are increased to stimulate onset of lay, constant light should be initiated and continued through 36 weeks of age. At which time, layers can gradually be phased onto Bio-Mittent Lighting. Intermittent lighting is continued throughout the laying cycle and can be used in the second cycle with comparable savings, if the flock is molted.

## PROOF OF PERFORMANCE Research Results Layers:

Table 3. Effect of Bio-Mittent Lighting on Egg Production, Egg Weight, Feed Efficiency and Weight of Layers

Lighting Program**	Production Hen-Day %	Egg Wt. Gms.	Lbs. Feed Per Doz. Eggs	Body Weight Change lbs.
60L:0D	76.9	53.5	3.24	83
15L:45D	76.6	53.5	3.06	64

Lighting Program**	Relative Shell Strength, %	
	Comparison #1	Comparison #2
60L:0D	100.0	100.0
15L:45D	101.6	101.0

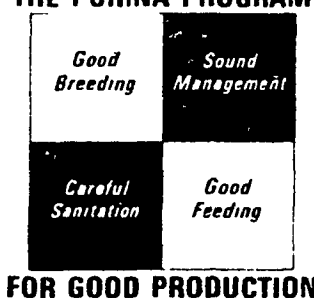
\*Tests were conducted at Purina Research Farm with commercial White Leghorn strains of hens lighted 15 hours per 24 hour day.  
\*\*Number of minutes of light/number of minutes of dark per light hour. Birds were grown under the same lighting regimes as pullets using 8 light hours per 24-hour day. At 20 weeks, lights were increased to constant light for 13 hours and at 24 weeks to constant light for 14 hours. At 28 to 36 weeks, 45 patterns of designated light sequences were used.

## FOR HELP IN IMPLEMENTING THIS PROGRAM CONTACT YOUR PURINA DEALER

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### THE PURINA PROGRAM



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