

### "Germicidal Lamps"

Excerpt from a talk—Farm and Hatchery Sanitation  
Presented at the 25th Annual Meeting

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Germicidal Lamps. Special electric lamps such as the Westinghouse Stereolamp, the General Electric Germicidal lamp and the Sperti Sterilizer produce an abundance of ultraviolet light rays in the region of 2550 Angstrom units. These light rays kill micro-organisms when they shine on them for a period of time. We have observed the following results with a germicidal lamp on *Salmonella pullorum*:

Distance from Lamp	Time required to kill
1 inch	1 second
2 inches	15 seconds
3 inches	1 to two minutes
4 inches	2 to six minutes

Germicidal light rays will not penetrate a film of dust, dirt or grease. They will only kill germs exposed on the surfaces of objects or in the air which are in their direct path.

The lamps produce some ozone forming and some vitamin D rays as well as bactericidal rays. In case a ration is being used which is on the borderline of vitamin D deficiency, the use of germicidal lamps will result in a slightly better growth or egg production and fewer cases of crooked beaks or thin egg shells.

We have observed the following vitamin D effects of germicidal lamps:

Exposed chicks (hatched at 1 and 2 hrs., 5 min. daily)	Total 1	
	Weight 6 weeks	Beak Area
450 pairs	45.50	45.50
500 pairs	35.25	35.25

Vitamin D and steroid lamp	Total 2	
	Weight 14 wks.	% Crooked tarsi
3.5 hr. 0	10%	
15 min. 14	12%	
3.5 hr. 14	20%	
15 min. 14	20%	

Germicidal lamps will reduce the bacterial count slightly in incubators and separate hatcheries. However, they have not been found to be a substitute for incubator fumigation. Not many of the bacteria pass in the direct light of the lamps and many of those that do, re-

main too short a time to be killed. The lights cannot be used in the hatching trays because they will blind the chicks.

Germicidal lamps have been used in laying houses to observe their effect on mortality of layers. The results obtained in Ohio State have been variable. The following data are typical from a trial conducted during a 28 week period (October 10, 1945—April 23, 1946).

	Avg. Production	Mortality
White Rocks—		
Filtered light.....	103	13%
Germicidal light.....	100	4
White Rocks—		
Filtered light.....	96	41
Germicidal light.....	96	11
White Leghorns—		
Filtered light.....	106	12
Germicidal light.....	104	17
New Hampshires—		
Filtered light.....	82	4
Germicidal light.....	87	4
Incandescent light.....	103	8

The lights are being used under practical laying house conditions again this year, which will be the third year for the test. An outbreak of cainix hit the farm a few days ago. The germicidal did not prevent the spread of the infection to the pens in which they were used. It is too early yet to know if the infection will be as severe or the slump in production as great in the germicidal light pens as in the control (incandescent light) pens.

It is believed that the germicidal lights will not take the place of ordinary light bulbs for supplying light rays for stimulation of egg production. (Refer to the trial above with New Hampshires). The light rays are too short.

Germicidal lights should be suspended of more than 4 ft. from the birds to avoid injury to their eyes. A person working near the lights should wear glasses or turn the lights off until the work has been completed. Dust should be removed from the lamps daily by means of a clean cloth.

Germicidal lamps may be used as a supplement to but not as a substitute for other sanitation practices on the poultry farm and in the hatchery.



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