TABLE 1

STERILIZATION OF THE ATMOSPHERE WITH ULTRA-VIOLET RADIATION

Hours of radiation	Average number of contaminants in 10 dishes exposed for 3 minutes
None	15.1
1	11.6
2	9.7
3	1.3
4	.1
5	.1

killed in two hours at this distance. The Alternaria and Monilia spores were killed after 1.5 hours of radiation. In order to secure consistent results it is necessary to agitate the suspensions violently before spraying, since the spores frequently tend to stick together in clumps and screen each other from the radiation.

The lethal dosages of three common spore-forming bacteria were determined in the same manner. *Bacillus subtilis* and *B. mycoides* were killed in 25 minutes. *B. mesentericus* was killed after 45 minutes of radiation.

The effectiveness of the ultra-violet generators was practically illustrated by using them in the commercial manufacture of grain spawn. In the spawn plant where the tests were carried out,[3] 180 bottles are sterilized and inoculated at one time. The sterilizer is inside the chamber. The records showed that the average loss from contamination over a period of time was about 11 per cent. or 20 bottles per set when no attempt was made to sterilize the chamber. The average loss was cut down to about 6 per cent. or 11 bottles per set when the air filtration apparatus was used. In this method, filtered air was admitted into the chamber for a period of two hours before the inoculation and was allowed to remain on during the inoculation. The loss was cut down to about 1 bottle per set with a modification of the air filtration technique. The modification consisted of fumigating the room with formaldehyde and then blowing out the fumes with filtered air. It was not considered possible to reduce the loss below this figure under commercial conditions. When the ultra-violet generators were used, the chamber was radiated for four hours previous to the inoculation. The average loss in ten sets was about 1 bottle per set.

The radiation method of reducing contamination is more desirable since it is simpler and less drastic than the formaldehyde-air filtration technique.

In laboratories, and especially in industrial operations, where contamination is a constant problem the installment of a chamber equipped with ultra-violet generators would be a practical solution. It is advisable, although probably not necessary, to have the autoclave right in the chamber to avoid carrying sterile material through a contaminated atmosphere.

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SOLUBILITY OF ANTERIOR PITUITARY GONADOTROPIN IN ALKALI HALIDE SOLUTIONS[1]

IN a study of the extraction and purification of the gonadotropic factor of the anterior lobe of the pituitary gland, it was found that aqueous solutions of the alkali halides are good solvents for this hormone.

Acetone-dried sow pituitary powder was extracted with 20 and 10 parts of the salt solutions. The powder was shaken with the salt solution in a mechanical shaker four hours, then centrifuged at 3,500 rpm for twenty minutes at room temperature. Aliquot portions of the supernatant fluid were then dialyzed against distilled water for 14 hours in a refrigerator.

Values given in Table I (calculated back to the original extract) show the R. O. U. (rabbit ovulation unit) per cc of solvent as compared with distilled water extract.

TABLE 1

Solvent	Rabbit Ovulation Unit/cc	
	10 : 1 solution	20 : 1 solution
Distilled water	70	40
25 per cent. satn. NaCl	80	..
50 " " " "	90	45
64 " " " "	70	..
10 " " " LiCl	65	..
25 " " " "	180	95
50 " " " "	< 40	..
50 " " " KCl	60	..
50 " " " NH_4Cl	170	> 100

Studies in progress using acetone-dried sheep and horse pituitary powder indicate comparable results.

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