

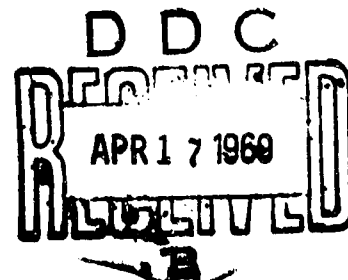
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/Studies of the viability of spores in the anthrax STI vaccine during its preservation/

Gosudarstvennyi Nauchno-Kontrol'nyi Institut Veterinarnykh Preparatov. Trudy v. 6; (Biopreparaty, virusy, nikroby). p.264-266. 1956. Moskva. 41.9 Un39

(In Russian)

STUDIES OF THE VIABILITY OF SPORES IN THE ANTHRAX
STI VACCINE DURING ITS PRESERVATION

In the complex of antiepidemic measures, specific prophylaxis held an extremely important place in the control of anthrax in agricultural animals. For conveying stable and longlasting immunity to animals against anthrax, living vaccines were widely used. L. S. Taenkovskii's anthracis vaccines were applied successfully for 70 years. Since 1942, positive results were obtained from vaccinations of animals with the anthrax STI vaccine, introduced by N. N. GINZBURG.

The stability and duration of immunity in vaccinated animals depends not only on the maintenance conditions, care and feeding, but also on the nature of the applied anthracis vaccine; whereas the mentioned action is connected with the viability of spores contained in the vaccine, consequently the studies of the viability of spores of the Anthrax STI vaccine was of paramount importance. /Begin. p.265/

In the years 1953 and 1954, we investigated 57 series of the STI vaccine; included were 28 series prepared without the conservative (on distilled water) and 29 series prepared on 30 per cent glycerin solution. The investigation of the viability of the spores of the STI vaccine prepared on distilled water was conducted after 6 months (12 series), 1 year (12 series) and 2 years (5 series), whereas the series of the vaccine prepared on glycerin were investigated 6 months (10 series), 1 year (8 series) and 2 to 2 1/2 years (10 series) postpreparation.

The investigation of the biability of the spores in the STI vaccine was conducted by the following method: the flasks with the vaccine were preliminarily shaken, then 1 ml of the vaccine was taken into a pipet of 1 ml capacity (graded up to the very top) and deposited into a flask containing 9 ml physiological solution. From this dilution, five dilutions were made; for their preparation an analogous method was applied, however, a new pipet was used every time. Thereafter, from the dilution 1,000,000 and 1,1,000,000 seedings of 0.1 ml were made into agar of Petri dishes; three Petri dishes were used for each dilution. Using a spatula, the planted vaccine was distributed on the surface of the agar; for germination, the dishes were placed into the incubator (thermostat) for 24 hours. Thereafter, the vaccine colonies, grown on the agar, were counted, and the concentration of spores was determined (tables 1 and 2).

Conclusion

After the preservation of the anthrax STI vaccine, prepared on glycerin, and stored for a period of 6 months and 1 year, the amount of viable spores had not changed, whereas during the storage of the vaccine for 2 years,

the amount of viable spores had decreased by 17 to 29 per cent.

2. The amount of viable spores in the series of the anthrax STI vaccine prepared on distilled water and stored for 6 months had not changed, however, after its preservation for a period of 1 year, the amount of viable spores in the vaccine had decreased by 15 to 37 per cent.

Table 1.

Results obtained from investigations of the vaccine prepared on glycerin

Concentration of viable spores at time of the issue of the vaccine (per cent)	Period after which investigation of viable spores was conducted	Concentration of viable spores (per cent)	Concentration of viable spores at time of the issue of the vaccine (per cent)	Period after which investigation of viable spores was conducted	Concentration of viable spores (per cent)
26	6 months	25	31	1 yr 3 mon.	34
26	6 "	26	26	1 yr 3 mon.	29
31	6 "	30	25	1 yr 3 mon.	26
26	6 "	25	25	1 yr 3 mon.	26
27	6 "	27	25	2 years	30
29	6 "	30	28	2 "	23
25	6 "	26	25	2 "	20
25	6 "	25	28	2 "	20
25	6 "	27	31	2 "	34
26	6 "	27	24	2 "	21
26	1 year	26	27	2 "	20
30	1 "	28	29	2 "	22
29	1 "	27	24	2 "	20
27	1 "	28			

Results obtained from the investigation of the vaccine
prepared on distilled water

Table 2

Concentration of viable spores at time of issue (per cent)	Period after which investi- gation of viable spores was con- ducted	Concentration of viable spores (per cent)	concentration of viable spores at time of the issue of the vaccine (per cent)	Period after which investi- gation of viable spores was conducted	Concen- tration of viable spores (per cent)
25	6 months	23	20	1 year	25
27	6 "	25	35	1 "	22
25	6 "	25	27	1 "	25
29	6 "	30	27	1 "	24
26	6 "	27	29	1 "	22
25	6 "	25	31	1 "	21
28	6 "	29	29	1 "	25
28	6 "	26	29	1 "	25
25	6 "	24	33	1 "	19
26	6 "	25	28	1 "	15
26	6 "	26	27	1 "	19
30	6 "	29	27	1 "	23

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