

Individual features of the development of anthrax pathogen strains with different phenotypes on a soil environment model

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The study of the ability of *Bacillus anthracis* strains with different phenotypic properties to spore germination, reproduction, and sporulation on a medium based on an aqueous soil extract can help assess the role of these processes in the formation and maintenance of soil anthrax foci. We used 12 *B. anthracis* strains, that differ in toxin and capsule formation, proteolytic and lecithinase activity, and also in belonging to the main genetic groups A and B. On a group of strains of anthrax microbes with different plasmid composition and virulence, the possibility of spore germination, reproduction of bacilli, and at least some of them productive spore formation on the soil stead has been revealed. Three scenarios of strain culture development processes were identified: 1 – *B. anthracis* spores remain intact without germinating, 2 – after germination of spores, bacilli are formed, which multiply with different intensity, passing into involutinal forms without spore formation; 3 – the passage of a complete physiological cycle "spore – bacillus – spore". The presence of 2 % blood in the soil environment contributed to the germination of spores and reproduction of the culture, but inhibited the process of sporulation during the observation period of 3 days. No correlation was found between a certain phenotype of the studied strains and *B. anthracis*. The data obtained that only 1–7 % CFU gives rise to the formation of colonies on the soil medium allows us to assume the heterogeneity of the properties of the population of the strains used. Identification of such crops and further detailed study of the complex of their properties will make it possible to identify among them the most significant for the implementation of a complete physiological cycle under conditions simulating soil.