

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

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Working Paper on Toxins

1. The United States has renounced the production, stockpiling and use of toxins, and has confined its military programme on toxins to research and development for defensive purposes only. Thus, the United States policy on toxins is identical to its policy on biological programmes.
2. Toxins are poisonous substances produced by biological organisms, including microbes, animals, and plants. Examples of microbial toxins are botulinum toxin, staphylococcus enterotoxin, diphtheria toxin, and tetanus toxin. Toxins produced by animals include puffer fish poison, snake and bee venom, and shellfish poison. Plant toxins include ricin, produced by the castor oil plant, cicutoxin produced by the poison hemlock, and abrin, produced by the Indian licorice seed plant. Laboratory experimentation has shown that, in general, these naturally occurring poisons are far more toxic than the known nerve agents.
3. Two bacterial toxins, botulinum toxin and staphylococcal enterotoxin, have long been discussed as potential agents of warfare. The botulinum toxin is one of the most poisonous substances known to science, and has been estimated to be up to 10,000 times as poisonous as nerve agents. For comparison purposes, if 15 tons of nerve agent would cause 50 per cent deaths over an area of up to 60 square kilometers, then about one and one-half kilograms of botulinum toxin would theoretically produce the same effect. Or, 15 tons of botulinum toxin could theoretically cause 50 per cent deaths in an unprotected population in an area up to 600,000 square kilometers. Effectiveness would of course depend upon dissemination technology, and actual coverage could vary significantly. Consequently, because of their inherently different characteristics (for example, toxicity), toxins and nerve agents have different possible military roles.
4. Where the target population is without protection, toxins could be delivered in a given area with relatively limited logistical effort. Even when masked, the target population would not be certain of protection against toxins because their extremely low dose rate would make masks with minor leaks ineffective, although effective masks would provide substantial protection.