

these related pesticides inhibit the enzyme acetylcholinesterase, causing death from respiratory and circulatory failure.

8. In addition to the similarities between the end products, many intermediates such as phosphorus trichloride, phosphorus oxychloride, ethyl and isopropyl alcohol, and ammonia are common to the production of pesticides and nerve agents. All are common industrial chemicals. In the mid-1960's, annual production of organophosphorus pesticides in the United States alone was approximately 30,000 tons. Present United States output is approximately 65,000 tons of organophosphorus pesticides per year, produced in the facilities of 14 basic manufacturers. Elsewhere in the world, there are at least 50 plants involved in the production or formulation, or both, of commercial organophosphorus pesticides in a total of 12 countries, including countries of Western and Eastern Europe. The total world output of the entire organophosphorus pesticide industry is estimated to be in excess of 130,000 tons annually.

9. The basic technical information for production of nerve agents, including descriptions of the chemical processes and amounts of raw materials required, is in the public domain. Such production does not present any insurmountable technical difficulties, although the problem of maintaining safety for plant personnel is, in view of the deadly character of the agents, quite complex.

10. From the foregoing discussion, it can be seen that the capacity for producing chemical warfare agents grows out of, and is linked to the commercial chemical industry of a given country. The raw materials for various chemical warfare agents, and even some agents themselves, are produced in vast amounts in a great many locations throughout the world.