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## **The Iraqi Biological and Chemical Weapons (BCW) programme**

### **1. Introduction**

Since the departure of the UNSCOM-inspectors in 1998, the international community has a limited capability to monitor the state of Iraq's weapons of mass destruction programme (WMD), as is called for in SCR 687. In December 1999, a new inspection regime has been set up by the United Nations, the UN Monitoring, Verification and Inspection Commission (UNMOVIC –established through SCR 1284); however Iraq has not agreed to any inspection since. The automated video-monitoring system installed by the UN at WMD-locations has been completely taken apart by the Iraqis. In other words, to a large extent no eyes and ears are left. Widely held suspicions exist throughout the international intelligence-and security community that Iraq has taken advantage of the absence of international verification, and rebuilt –despite a trade-embargo on anything but food and medicines, elements of its WMD-programme. Recently, talks between the UN and Iraq have started about continuation of weapons-inspections. In anticipation of the return of UN inspectors, there are indications the “cat-and-mouse”-game of moving and hiding weaponsprogrammes has recommenced.

### **2. Biological programme**

In the area of biological weapons, suspicions exist of a reinitiated BW production capacity and infrastructure. During the Gulf War, Iraq had in its possession thousands of liters of anthrax, botuline toxin, aflatoxin, and ricin. UNSCOM estimated in the late 1990's that Iraq probably possessed three to four times as much biological agents than it admitted and had declared. Iraq will most probably have developed biological agents with the remnants of the available know-how, equipment and supplies it managed to hide.

#### *Agents and dispersal means*

UNSCOM has discovered that Iraq produced on a large scale at least the following agents: botulinum toxin (19000 liter), anthrax (8500 liter), clostridium perfringens (340 liter), and ricin (10 liter). Research has been carried out on aflatoxin, clostridium perfringens, ricin, mycotoxins, anti-wheat fungus, rotavirus, the camelpox virus and probably also the smallpox. During inspections in 1995 vials were found labeled “smallpox” and “smallpox vaccine”, as well as a freeze-drier labeled “smallpox machine”. At least three agents - anthrax, botulinum toxin, en aflatoxin- have actually been *weaponised* in warheads and bombs. It is not completely clear what Iraq's intentions were with regard to the research into and weaponisation of aflatoxin, normally a non-lethal toxin resulting in possible liver

cancer.

UNSCOM-inspectors have confirmed that Iraq used *bentonite* in its BW-programme to increase the dispersal of agents in the air. At an early stage it was speculated that the recent anthrax letters in the US were treated with the same *bentonite*. We have no information to link the two events; however the use of bentonite demonstrates the advanced nature of the Iraqi BW-effort. For dispersal, warheads (Al Husayn SCUDs), bombs and helicopters/planes equipped with spraytanks were available, such as MiG-21 and Mirage F-1. It is not known whether these means of delivery have all been destroyed. According to CIA open source information Iraq continues the development of its unmanned aerial vehicle (UAVs), type L-29 originally from the Czech Republic, for the delivery of B(C)W.

It is suspected that Iraq still possesses significant quantities of anthrax, botulinum toxin, clostridium perfringens, ricin toxin, and aflatoxin. A laboratory-scale production capacity is likely to be present for anthrax, botulinum toxin, tularemia and typhus. Also the necessary amounts of growthmedia (necessary for the cultivation of the bacteria) is not accounted for in the Iraqi declarations; about 3500 kg is missing for which Baghdad does not have a sufficient explanation. In general, UNSCOM has typified the Iraqi BW-programme as a *black hole*.

#### *Facilities*

During the Gulf War Iraq possessed at least 18 facilities involved in the BW-programme, of which seven production facilities. Those were at Muthanna (the Sepp Institute), Amaria (Amiriyah Serum and Vaccine Institute, recently improved with new capabilities such as a large cold-storage capacity), Al-Dawra Foot and Mouth Disease Institute (rebuild according to our information), at Al-Hakim, Salman Pak Taji and Fudaliyah. The Al-Hakim facility has been completely destroyed during the war. Recently, some BW-relevant plants haven been rebuild, apparently for civilian purposes. For example, the Al-Ramadi Milk Powder Factory after destruction in 1991 is completely rebuild. The Fallujah III Castor Oil Production Plant is suspected of producing ricin toxin, under the disguise of the production of castor oil for brake-fluid. A disguise, since no activity appears to be taking place at the nearby break-fluid plant. Another (development of) concern is the apparent Iraqi interest in a mobile BW-production capability. Conversion of the vaccine- and biopesticides plants, and therefore the rebuilding of Iraq's biological weapons infrastructure can take place within a few weeks to a few months.

#### **Chemical programme**

Since the Gulf War Iraq has rebuild part of its chemical production infrastructure. In the past this has resulted in substantial amounts of the nerve agents sarin, tabun, probably VX, and the traditional mustard gas -which actually has been used for example at the Kurdish town of Halabjah. In order to revive the production of chemical agents to the level before Operation Desert Storm, Iraq requires goods and know-how from other countries. There are no indications however, that these goods have been purchased in the Netherlands

#### *Agents and dispersal means*

Iraq admitted to have possessed enough precursors for the production of 70 tonnes of VX. Precursors found were choline, phosphorous pentasulfide en di-isopropylamine. A lot of uncertainty existed during UNSCOM about the actual amount of VX, which existence Iraq

denied until 1995, and specifically about the amount Iraq claims to have destroyed. Technology was available for a high quality of VX resulting in a high persistency of the agent. Next to VX, Iraq produced a few hundred tonnes of sarin and mustard gas. Again, large amounts of the probable stock have not been traced and accounted for by the Iraqis in their declarations to the UN. It is estimated that Iraq still possesses around hundred tonnes of chemical agents, of which tens of tonnes of VX.

For delivery of the chemical agents, warheads and bombs filled with these agents have been found, as well as sprayplanes equipped with spraytanks. These have been destroyed. As is applicable for the biological programme, Iraq continues to develop unmanned aerial vehicles (UAVs), for dispersal of B(C)W.

is capable of disseminating agents over large areas. Specific experiments were carried out for drop-tanks and spray tanks, in the latter case capable of releasing as much as 2000 liter of anthrax.

### *Facilities*

During the Gulf War Iraq had several production facilities under the disguise of pesticide plants, such as at Muthanna, Salman Pak, Samara, en Habbiniyah. There are strong suspicions that many of these facilities have been rebuild, and are applied for the CW-programme under disguise of industrial/commercial purposes. First of all however, the production capacity of these facilities, significantly exceeds what would be common for civilian purposes. Second of all, dual-use equipment is being installed and/or repaired in the facilities, like for example at Fallujah. The Fallujah (1, 2, 3) plant was part of the Muthanna Establishment, involved in the production of chlorine and other CW-precursors. There are indications that key positions are taken by personnel from the former CW-programme. It is suspected that Iraq has attempted, by circumventing the UN embargo, to purchase several dual-use items that can be manufactured for WMD-purposes. With the existing stocks it managed to keep away from UNSCOM, Iraq would only need a few weeks for the production of (small amounts of) mustard gas, and a few months for nerve agents.

### **Methods of procurement**

The Iraqi secret service, the Mukhabarat, uses several small import-export companies as (logistical) intermediary for their procurement activities. These companies are based in several different countries from which goods and know-how are desired. Targeted businessman are approached by the intermediaries, and through closely monitored businesstrips to trade fairs in Iraq a deal is attempted to be brokered. Several front-companies formally commission the deal, and serve as diversionary route

Other institutions in Iraq will be in charge of acquiring the necessary know-how in the western world.

### **Conclusion**

In the absence of any international monitoring, only limited information is available as to the exact state of the biological and chemical weapons programme of Iraq. There are indications that the commercial infrastructure is being rebuilt. Given the still available expertise and stocks unaccounted for, would provide Iraq the potential to revitalize its BC-programme in a very short time. In order to return to the pre-Gulf War scale of its chemical and biological capacity, Iraq is dependent on the procurement of dual-use goods abroad. With the possible return of UN inspectors to Iraq, it is to be expected the WMD-programmes will be moved around and disguised.