

IRAQI WEAPONS OF MASS DESTRUCTION:
BIOLOGICAL WEAPONS

History

The Iraqi biological weapons program began in the 1970s. By 1974, Iraq had begun building the al Hazan Ibn al Haithem Institute, just south of Baghdad, as the first home for its biological weapons efforts. However, in the latter part of the decade, the facility experienced financial problems and activities at the Institute were greatly reduced, temporarily stalling the program.

Iraq renewed its efforts in the 1980s, focusing initially on botulinum toxin and anthrax, later progressing to additional agents, including gas gangrene. Facilities involved in these activities included al Muthanna, Salman Pak and al Hakam. The scope of the program continued to expand until, by the early 1990s, Iraqi research included the use of hemorrhagic conjunctivitis and camel pox, as well as a plant agent – wheat smut – which may possibly have been used as an economic weapon against Iran.¹ A list of open air tests that Iraq admits to having conducted during the late 1980s and early 1990s are contained in Table 1.

Table 1: Iraqi-Acknowledged Open-Air Testing of Biological Weapons²

Location-Date	Agent	Munition
Al Muhammadiyat – Mar 1988	<i>Bacillus subtilis</i>	250-gauge bomb (cap. 65 liters)
Al Muhammadiyat – Mar 1988	<i>Botulinum toxin</i>	250-gauge bomb (cap. 65 liters)
Al Muhammadiyat – Nov 1989	<i>Bacillus subtilis</i>	122mm rocket (cap. 8 liters)
Al Muhammadiyat – Nov 1989	<i>Botulinum toxin</i>	122mm rocket (cap. 8 liters)
Al Muhammadiyat – Nov 1989	Aflatoxin	122mm rocket (cap. 8 liters)
Khan Bani Saad – Aug 1988	<i>Bacillus subtilis</i>	aerosol generator – Mi-2 helicopter with modified agricultural spray equipment
Al Muhammadiyat – Dec 1989	<i>Bacillus subtilis</i>	R-400 bomb (cap. 85 liters)
Al Muhammadiyat – Nov 1989	<i>Botulinum toxin</i>	R-400 bomb (cap. 85 liters)
Al Muhammadiyat – Nov 1989	Aflatoxin	R-400 bomb (cap. 85 liters)
Jurf al-Sakr Firing Range – Sep 1989	Ricin	155mm artillery shell (cap. 3 liters)
Abu Obeydi Airfield – Dec 1990	Water	Modified Mirage F1 drop-tank (cap. 2,200 liters)
Abu Obeydi Airfield – Dec 1990	Water/potassium permanganate	Modified Mirage F1 drop-tank (cap. 2,200 liters)
Abu Obeydi Airfield – Jan 1991	Water/glycerine	Modified Mirage F1 drop-tank (cap. 2,200 liters)
Abu Obeydi Airfield – Jan 1991	<i>Bacillus subtilis</i> /Glycerine	Modified Mirage F1 drop-tank (cap. 2,200 liters)

¹ From the Monterey Institute of International Studies website: <http://cns.miis.edu/pubs/dc/briefs/020201.htm>

² From the CIA website: http://www.cia.gov/cia/publications/iraq_wmd/Iraq_Oct_2002.htm#06

Despite possession of biological weapons during the 1990 Gulf War, there is no evidence that any of these agents were utilized. Coalition forces heavily bombed Salman Pak, and after the war, Iraq stated that it had destroyed all its biological agents and weapons. During the inspections that followed, UN inspectors destroyed al Hakam.

Resolution 687

On 3 April 1991, the UN Security Council adopted resolution 687, which set the terms for an official ceasefire for the Gulf War, which Iraq accepted on 6 April 1991. Among other provisions, the resolution declared that Iraq would agree to the destruction or all its chemical and biological weapons, including stocks of agents and other related materials.³

Most significantly, the resolution called for the formation of a Special Commission to manage on-site inspections of relevant facilities and to determine Iraqi compliance with the resolution's disarmament provisions. The body was dubbed the Special Commission on Iraq (UNSCOM).

Iraq initially declared that it had no biological weapons program, a statement the government later amended to include "dual-use" biological equipment and facilities.

UNSCOM Inspections

Responding to an UNSCOM questionnaire, Iraqi officials declared that Iraq had maintained a research program using *Clostridium botulinum*, *Clostridium perfringens*, and *Bacillus anthracis* between 1986 and 1990, but that all stocks had been destroyed and the program terminated in August 1990. They also admitted to possessing a range of dual-purpose equipment, stored at al Hakam.

UNSCOM examined several declared and undeclared sites in the initial year of inspections. In conducting the first UNSCOM inspection of al Hakam, which Iraq had identified as a single-cell protein plant employing fermenters, and the al Manal Foot and Mouth Disease Vaccine plant, identified as having a dual-use capability to produce toxins, the team reported finding conclusive evidence that Iraq had engaged in an advanced military biological research program.⁴

In 1995, in the face of hard evidence presented by UNSCOM, Iraq confessed to having a full-scale, offensive biological weapons program (see Annex 1). Iraq also admitted that it had engaged in the weaponization of some of its agents. Iraq then agreed to renew cooperation with UNSCOM, and subsequently handed over 680,000 pages of documentation relating to all its weapons programs.

The next year, UNSCOM teams supervised the destruction of the al Hakam plant, but the Iraqis continued to block inspections and destroy evidence. By October 1997, tensions had reached their peak. Iraq refused to accept US personnel on UNSCOM teams or over-flights by UN-flagged U2 surveillance planes supplied by the United States. 13 November 1997 marked Iraq's demand that UNSCOM personnel from the United States depart within twenty-four hours. Despite a short period of renewed cooperation and inspections, by October 1998, Iraq no longer agreed to comply with UNSCOM requests.

Questions Outstanding

Following UNSCOM's expulsion from Iraq, the UN created the UN Monitoring, Verification and Inspection Commission (UNMOVIC). In 2002, after passage of UN Security Council resolution 1441, Iraq again granted the UN with access for the purpose of inspections.

³ From UN Resolution 687: "Decides that Iraq shall unconditionally accept the destruction, removal, or rendering harmless, under international supervision, of: (a) All chemical and biological weapons and all stocks of agents and all related subsystems and components and all research, development, support and manufacturing facilities; (b) All ballistic missiles with a range greater than 150 kilometres and related major parts, and repair and production facilities;"

⁴ Pearson 129

On 7 December 2002, Iraq submitted its most recent arms declaration to the UN. Dr. Hans Blix, the executive chairman of UNMOVIC, stated that questions regarding Iraq's biological efforts remained unanswered. For example, Iraq had declared that it had produced 8,500 liters of anthrax, which it then destroyed in 1991. However, based on evidence gathered during UNSCOM inspections, UNSCOM and later UNMOVIC, believed that Iraq had produced more than that amount. Likewise, Iraq provided no records or other information substantiating its claim of destruction.

Another ongoing concern remains the fate of over 650 kilograms of growth media imported by Iraq in the late 1980s. Far beyond even Iraq's own estimates of annual use, this considerable amount of a substance key to growing certain biological agents was never adequately justified by the Iraqi government.

Annex 1: Bulk BW Agents⁵

Full, Final and Complete Declaration	Lethal Dose / Symptoms	UNSCOM Assessment	Comments
Botulinum toxin produced (10 to 20-fold concentrated) 19180 liters 5066.82 gallons	LD = .001 μ /kg of body weight Weakness, dizziness, dry throat and mouth, blurred vision, progressive weakness of muscles	Insufficient documents to support quantities. Equipment and unaccounted for growth media do not support the figures. Quantities could be more at least double the stated amount.	Iraq bases this estimate on 1990 Al Hakam report with extrapolations into 1989 and earlier.
Bacillus anthracis spores produced (10-fold concentrated) 8445 liters 2230.93 gallons	LD = 8,000 – 50,000 spores Fever and fatigue; often followed by a slight improvement, then abrupt onset of severe respiratory problems; shock; pneumonia and death within 2 to 3 days	Insufficient documents to support quantities. Equipment and unaccounted for growth media does not support the figures. Quantities produced could be at least 3 times greater than stated.	Iraq bases this estimate on 1990 Al-Hakam report with extrapolations into 1989 and earlier.
Aflatoxin produced 2200 liters 581.18 gallons	LD = 80 – 318 mg Cancer-causing compound	Facilities, equipment, and personnel do not support production statements. Experts assessments are that Iraq could not have produced the quantity of aflatoxin claimed, given the equipment, facilities and personnel stated by Iraq.	Iraq bases the production of 2200 litres on the 1990 Al-Hakam report.
Clostridium perfringens spores produced (10-fold concentrated) 340 liters 89.82 gallons	LD = unknown Intense abdominal cramps, diarrhea	Insufficient documents to support quantities. Equipment and unaccounted for growth media does not support the figures. Quantities produced could be at least 15 times the quantity stated.	Iraq bases the 340 litres estimate on 1990 Al-Hakam report.
Ricin produced 10 liters 2.64gallons	LD = 3-5 μ g/kg of body weight Rapid onset of weakness, fever, cough, fluid build-up in lungs, respiratory distress	Documents and interviews do not support account.	Based on an inaccurate account of Ricin activity.
Wheat Cover Smut Not quantifiable		Nothing to support statements.	The total quantities remaining are claimed to have been destroyed in July 1991.

⁵ From the UNSCOM Final Compendium, Appendix III [S/1999/94]: 1/25/99