

## North Korea's Chemical and Biological Weapons

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North Korea started developing its chemical weapons in 1947 as the Korean People's Army addressed the theory of chemical weapons operational doctrines. In 1954 the army reportedly established regular chemical and biological defence units after the Korean War of 1950 to 1953. The reliability of these facts has limitations for being confirmed. Kim Il Sung's "Declaration for Chemicalizaion" and his mentioning of "poisonous gas and bacteria can be used effectively in war" in 1961 called for further efforts to develop its chemical and biological production facilities. This reflected in Kim Il Sung's recognition of importance of biological and chemical weapons. Following this, North Korea's biological and chemical facilities were established and further developed.

Assessing chemical or biological weapons capability itself is a challenging project because of its dual use purposes and lack of unique marks. When it comes to North Korea, it is going to be a difficult task to decipher its real capability due to the country's least accessibility to its facilities and related materials. Currently North Korea is ranked as the third country (followed by the US and Russia) or just one of the most possessors of chemical weapons in the world.

Generally assumed chemical agents with North Korea are mustard gas, phosgene, sarin, with a total of 2500 to 5000 tons of chemical weapons possession. North Korea is capable of producing 5000 tons annually and 12,000 tons chemical agents in the advent of war. It has also continued research with possible production of biological warfare agents like anthrax, plague, yellow fever, typhoid, cholera, tuberculosis, typhus, smallpox, and botulinum toxin.

On October 4, 2002, North Korean First Vice Foreign Minister Kang Suk Ju mentioned North Korea possessing a powerful bomb which had been interpreted in general as H-bomb. It later came out to be a threat of chemical and biological weapons as North Korea confessed its nuclear program. In addition, North Korea's capability to have an H-bomb has been assessed negatively by the US intelligence at the same time.

Around late 1960s, North Korea began to produce chemical weapons "experimentally". In 1981 the Chemical Bureau was transformed into the Nuclear Chemical Defence Bureau and put under direct control of the General Staff Department of the Ministry of the People's Armed Forces. In the late 1980s or the early 1990s, the chemical weapons arsenal was expanded and intensified. In January 1993, South Korea signed the Chemical Weapons Convention (CWC) and declared its stock of chemical weapons, North Korea refused to sign the CWC, though denying its possession of chemical weapons. Despite ROK (Republic of Korea)'s deep concern over the North Korean

chemical weapons program, as the former Vice foreign minister Yi Ki Chu expressed “deep concern over the failure of North Korea to join the CWC” in May 1997, North Korea hasn’t signed CWC nor has expressed to do so. However, North Korea has signed the Biological and Toxin Weapons Convention (BTWC) in 1987.

## Suspicious traits

In late 1970s, North Korea purchased agricultural chemical products in large quantities (1.6, 2, 1.8, 3.1, 4 million tons from 1976 to 1980 respectively), putting aside its dual use possibility, its application for chemical weapons programme cannot be ruled out. In February 2002, an unidentified South Korean company sold about 338 tons of sodium cyanide which is a highly toxic chemical compound, to an unidentified Thailand firm. The Thai company arranged to ship 70 tons of the chemical to North Korea.

On September 25, 2004, the South Korean Customs Service handed in a report to a law maker stating that South Korea had exported 73,925 tons of sodium cyanide to China and 3,540 tons to Malaysia since 1998. Malaysia later stated that they had acted as a middleman for North Korea, and a total of 107 tons was handed to North Korea via Chinese middlemen.

## Formidability

Biological attack on US mainland was carried out in October 2001. The causative agent was anthrax. Anthrax infection is caught unknowingly, the symptoms of infection are similar to a fever, but its formidability to killing people is enormous. Destructiveness of anthrax is as follow. Killing 50 % of people in 232km<sup>2</sup> needs 1 megaton (1000kg) nuclear weapon (equal to 160 metric tons of a chemical agent RDX). Anthrax used as a weapon to target Seoul (600km<sup>2</sup>), could kill 50% of population in the city with only 17 kg of the agent. The target city being Gyeonggi province (10,900km<sup>2</sup>), the most populous province and surrounds Seoul, adjacent to North Korea, more than half the

population could be killed by using 310kg of anthrax. Thus, approximately 350 kg of anthrax would be needed for the mass killing of 50% of people in Seoul and Gyeonggi province, where almost half of Korean population resides. With regard to its economic, political importance of capital Seoul and 27 cities in Gyeonggi province, it would bring huge calamity only with 350kg of anthrax. South Korea is in urgent need of preparing in advance. According to a report handed in National Assembly for inspection of the administration in October 2006, among South Korea’s 29,080 shelters, chemical and biological protected shelters for “the ordinary people” are only counted as 4 places, with an area of 4,237m<sup>2</sup> (1,284pyong) which could accommodate 5,136 people.

**Table:** Quantity of Anthrax required to inflict casualties of 50% of total population

|                     | Washington<br>(232km <sup>2</sup> ) | Seoul<br>(600km <sup>2</sup> ) | Gyeonggi<br>province<br>(11,000km <sup>2</sup> ) |
|---------------------|-------------------------------------|--------------------------------|--|
| Nuclear<br>weapons  | 1,000kg                             | 2,600kg                        | 48,000kg   |
| Biological<br>agent | 6.5kg                               | 17kg                           | 310 kg   |

## Delivery Systems

For chemical weapons warheads capability, North Korean’s missiles could be armed with them. It has been said that if 50 missiles armed with biological and chemical weapons warheads were to be fired, 4 million among 12 million people in Seoul would be killed. In addition, what if North Korea fired missiles in quantity, it would be impossible to prevent South Korea from being attacked, resulting in a tremendous tragedy with a small amount of chemical or biological agents. Estimated as 13,000 personnel, North Korea’s chemical defense force personnel could land on Korean peninsula and carry along biological weapons agent with intent to inflict damage and kill people in South Korea.

## Biological and Chemical Warfare

Chung Bok Yi ( a sergeant in the 18<sup>th</sup> Nuclear and Chemical Defence Battalion in the early 1990s, who defected in 1994) in his interview with *Korea Defense Review* in 2000, stated that North Koreans are already provided with anti-gas masks of 710 old version and the

**Table:** North Korea's Weapons of Mass Destruction

| Weapons systems | Range (km)         | Availability of armed with chemical warheads |
|-----------------|--------------------|--|
| Calibers 170mm  | .54                | Possible                                     |
| Calibers 240mm  | 65                 | Possible                                     |
| Forg-5/7        | 55-72              | Possible                                     |
| SCUD(B/C)       | . 300(B)<br>500(C) | Possible                                     |
| Nodong 1, 2     | 1300               | Possible                                     |
| Daepodong 1,2   | 2500-6700          | possible                                     |

military with 1010 (a new version) for preparing chemical and biological warfare. He added that the agents used in the World War II and Korean War were crude agents. In February 2004, BBC broadcasted about North Korean defector Kwon Hyuk, who was the former military attaché at the North Korean embassy in Beijing and chief of management at prison camp 22, and Sun Ok Lee, a former prisoner in a North Korean prison, both witnessed human experimentation in North Korea. Whatever the status of its biological weapons efforts, North Korea has developed a lot of dual use biotechnology facilities where research and military purpose biological weapons agents could be produced. Such estimation is yet to be officially confirmed.

There is lack of information to confirm the progress of North Korea's chemical and biological weapons programme. Whatever the situation or strategic interest they have in North Korea's estimates; a possible chemical

and biological weapons capability could serve North Korea's strategic interest in creating or deterring an attack from perceived enemies.

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