BIOTERRORISM – PRESENT THREAT FOR SECURITY

Lt.col. lecturer Filofteia REPEZ*, Ph.D.
"Carol I" National Defence University

Terrorism is a war which is made in time of peace, a war without borders and without fronts, a war which is considered just by terrorist. Terrorism is a given fact, but, in the same time, a creation of human society and a creation of a thirsty man which is obsessed by power. What is unfair is that the terrorist activities of any kind affect the human being first. In order to achieve their goals, terrorists are waging a right battle from their point of view and make use of new weapons and technologies.

Such weapon is the biological weapon, an invisible weapon, which is highly effective and dangerous. Bioterrorists made these weapons without effort, in their rooms with minimal costs. The reality of today shows that the fear of biological weapons exceeds the one of nuclear war. Based on these aspects, the article aims to draw attention to an undeniable fact: bioterrorism is a present and serious threat for security.

Keywords: terrorism; bioterrorism; biological weapons; prevention; combat; security.

„Truth is a very powerful weapon against those who want to hide it."
Margaret Thatcher,
the speech on December 3rd, 1998 held at the National Institute of Public Guardian in Washington DC

General Considerations Regarding the Biological Weapons

The threat of biological attack is considered to be the most frightening and alarming perspective for human security. The following lines are not intended to popularize these weapons, but only to highlight the series of questions that personally, I have addressed and correlated with the series of responses gathered from the literature I have used, meaning the fact that biological weapons have again become a significant concern for the security of all actors in the international system.

* e-mal: *filofteiarepez@yahoo.com*

What are biological weapons?

Biological weapons are weapons used intentionally to kill living organisms, and ranked on second place in terms of potential to produce mass casualties after nuclear weapons. These weapons are part of means of warfare which are generally non-discriminatory; their effects are manifested equally on fighters and military objectives, but also on civil population and civil supplies. Detailed, a biological weapon is a means or a device which produces the release of a biological agent, including the delivery of biological agents (such as some species of insects), with harmful or lethal effects to humans, animals, crops and environment.

Biological weapons and devices to disperse the pathogens can be classified as follows:[1]

- low-tech weapons: use toxic substances from the category classified as common pathogens and are used for the contamination of water sources and food (for example: the spread of Salmonella the biological agent in salad by Rajneehce terrorist group in order to determine a lower voting participation as voters in Oregon in the U.S.);
- high-tech weapons: are the ones used for dispersal of pathogens on large areas, usually in the form of aerosols;
- weapons developed on bio-scientific technology: allow major changes in the molecular structure of bacteria and viruses, for their use as biological weapons, often they are difficult to identify and treat.

Another classification[2] of the biological weapons has the basic chemical form from which are made. According to this, biological weapons are divided into three main groups[3]: microorganisms (bacteria and viruses pathogens); substances obtained by lab work (botulinum toxins, hormones and neuropeptides) and substances processed in a synthetic way that cause biological processes (neuroparalyzing gas, viruses obtained on synthetic ways).

What are pathogen agents?

Biological weapons include any organism (such as: bacteria, viruses or fungi) or toxins found in nature, which can be used to kill or injure.

The World Health Organization Guidelines for public health officials answer regarding the biological and chemical weapons pathogens detailing eleven clinical characteristics, incidence, occurrence and distribution sources,

[1] Vasile Simileanu, *Asymmetric conflicts*, TOP FORM Publishing, Bucharest, 2011, p. 397.
[2] A further classification of biological weapons is made by Sergiu Fendrihan, Cătălin Lăzureanu, Cornelia Prioteasa, in *Bioterrorism*, Bioflux Publishing, Cluj-Napoca, 2011, pp. 41-44.
[3] Andrew Lloyd, Peter Mathews, *Bioterrorism, the scourge of the third millennium*, Hiparion Publishing, Cluj-Napoca, 2002, p. 107.

mode of transmission, incubation period, and impact on human security. According to this guide, pathogens are transmitted in three ways: through direct contact (from person to person, from animal to man, from mother to child), by indirect contact (drops, particles, food contamination, contamination of water sources) and deliberately, bioterrorism (eg. send an anthrax letter).

The pathogen agents are used as biological weapons and they can be grouped into three categories according to priorities for action and alert due to risk to public health, namely:

- category A agents: are considered very dangerous, causing high mortality, including bacteria that cause anthrax, botulism, tularemia, plague and smallpox and viruses that cause viral hemorrhagic fevers;
- category B agents: are on the second place such as biological risk, easy to spread, cause moderate morbidity and mortality, including pathogens that cause salmonellosis, cholera, brucellosis, viral encephalitis, glanders, melioidosis, Q fever, and toxins as ricin toxin and staphylococcal enterotoxin producing acute poisoning;
- category C agents: are easy to produce and spread, with a major impact on health and may be a subject to genetic modification to increase virulence; include Nipah virus and hantana.

When did they first use biological weapons?

Evidence of first use of biological weapons dates back to the 6th century B.C. when the Assyrians poisoned fountains with rye ergot. In the year 1346, the Tartar troops, in the siege of the city Kaffa (now Feodosia, Ukraine), have catapulted corpses over fortifications, causing an epidemic of plague, the same method was used by tsarist troops, in 1710, against the Swedish troops. In the 20th century begins the production of biological weapons in a scientific manner, first by Japan, in 1932 and by Britain in 1934. With the exception of the Japanese attacks on China, before and during the Second World War, these weapons were not used in modern warfare.

Interesting is the fact that, both U.S. and Soviet Union during the Cold War improved biological weapons' production programs. U.S. produced the following agents as biological weapons: Bacillus anthracis, Francisella tularenis toxin, Brucella suis, Venezuelan equine encephalitis virus, staphylococcus enterotoxin B and Coxiella burnetii. The Soviet Union had a own pathological list of agents that constitute effective bioweapons: smallpox, plague, anthrax, botulinum toxin, viruses, equine encephalitis, tularemia, Q fever, Marburg disease, melioidosis and typhus.[4]

[4] US DoD, *NATO Handbook on the Medical Aspects of NBC Defensive Operations*, Washington: The Departament of Defence, 1996, p. 68 şi p. 69, apud. Marin Cruceru, Carmen Mureşan, *Bioterrorism and Pandemics major security risk in the twenty-first century*, TOPFORM Publishing, Bucharest, 2010, p. 142.

Why are biological weapons used?

Attacks with biological weapons have two purposes:

1.to produce an catastrophic effect on civilians, including in the structure and functioning of public health and health care.

2.to induce fear and terror among the population.

Who are the authors of these attacks and who is interested in using biological weapons?

The list is not too long; it contains only three categories of authors[5]:

- independent political organism: for example in the '50s, the independence movement in Kenya, called Mau Mau, planted toxins used to kill animals in order to decrease the confidence of local people in the British administration and encourage them to join the movement;
- secrets: for example, Rajneesh cult contaminated the salad in the bars from Oregon, in 1984, with Salmonella typhimurium, causing the illness of more than 700 people; the cult Aum Shinrikyo (Supreme Justice) used sarin gas in Tokyo subway in 1995, causing 12 people to die and another 5,000 to be intoxicated;
- individuals, called "*lone wolves*": an example of a lone wolf is Larry Wayne Harris, who tried to spread plague bacteria then anthrax in Las Vegas.

What are the characteristics of biological weapons?

The biological weapon is preferred because of the characteristics it has. It is a weapon that can be easily manufactured, concealed, transported, and used through a plurality of advantages: relatively low cost, technical equipment and biological materials within anyone's reach, multiple and complex information about pathogens, and very low, lethal effects. Terrorists have in mind that there is no treatment to cancel the effects of biological weapons. Raymond Zilinskas, a biologist at the University of Maryland (USA) and an important member in the commissions of control in Iraq, said that biological weapons were obtained by simple means: substances used for this type of weapons can be produced by an average skilled technical staff, using industrial equipment for the mundane (such as centrifuge or device used in dairy fermentation or pharmaceuticals), whose changes are minor.[6]

Pathogen agents can be easily transported in containers such as a pen cap and dispersed by any means. A specialist in the field says that a pathogen can be slipped into a country, using something ordinary as egg powder.[7]

---

[5] Sergiu Fendrihan, Cătălin Lăzureanu, Cornelia Prioteasa, *Bioterrorism*, Bioflux Publishing, Cluj-Napoca, 2011, p.22.

[6] Andrew Lloyd, Peter Mathews, *op.cit*., p.82.

[7] Vasile Simileanu, *op.cit*., p.399.

Biological agents should obey certain *conditions*[8]: they consistently produce illness; have high virulence; show a reasonable period of incubation, respectively short for tactical attack and long for strategic attack; are stable during production and after release; are disseminated in several ways, using variables dissemination paths; are produced on an industrial scale; have an expected psychological impact; are difficult to diagnose and treat; are able to spread through secondary contamination; are able to infect many types of targets (such as humans and animals); may be protected before dissemination into the target population and before people have developed an immunity to them.

Biological weapons have disadvantages for those who produce them, disadvantages embodied in the difficulty to protect people working in production, frequency in occurrence of manufacturing defects and accidents, problems of storage substances and their release from target. To eliminate the disadvantages, Soviet specialists place biological weapons usable in the frozen nose tips of the missile (because the biological substances are very sensitive to light and heat), avoiding in this way, degradation of microorganisms by the heat released during the impact.[9]

Bioterrorism - a War of the Future?

Deliberate release of viruses, bacteria or other agents in order to sick or kill humans, animals or plants is called bioterrorism. Biological terrorism is not a recent invention; it has a history much longer than conventional weapons, since its use pre-dates the discovery of gunpowder. The first use of biological agents belongs to the Romans, who used dead animals to poison the enemies' water supplies.[10]

The objective of any bioterrorist attack is the terror, the terror induced to a large numbers of people, without discrimination (civilian or military, women, children etc.), aiming to demoralize the population and overuse medical resources. Biological agents can be used for individual assassination, due to the incapacity or death of thousands of people or environmental contamination.

The central place in these discussions of bioterrorism targeting organizational, logistical and ethical manner is held by medical intervention. Protection against biological weapons requires the establishment by those involved in these tasks (medical personal, especially, and people in general) of preventive measures to decrease their harmful action.

---

[8] Sergiu Fendrihan, Cătălin Lăzureanu, Cornelia Prioteasa, *op.cit*., pp. 38-39.
[9] Andrew Lloyd, Peter Mathews, *op.cit*., p. 108.
[10] Marin Cruceru, Carmen Mureşan, *Bioterrorism and Pandemics major security risk in the twenty-first century*, TOPFORM Publishing, Bucharest, 2010, p. 132.

To achieve the objectives, terrorists may turn to different ways of using biological weapons, such as fruits[11], rats, water reservoirs infestation or infection with salmonella which are some of the methods commonly used by terrorists.

The risk of using biological weapons by terrorists is not yet removed. A study released by the U.S. National Defense University confirms that in the twentieth century, over 100 incidents took place involving expressions of interest to use biological agents, threats or attempts to obtain them. The Report Mapping the Global Future by the National Council for U.S. intelligence, says that "there it is certainly that will be a biological weapons attack by 2020. "[12]

Over time, have been adopted several laws to prohibit the use of biological weapons on international and national level.

The first order prohibiting biological war (and chemical war) capabilities was given in 1863, in the U.S., which provided that: "Any use of poisons for the infestation of water wells, food, weapons or other such items should be excluded from modern warfare."[13] Later, in 1874, the Brussels Declaration required to prohibit the pathogens and toxins as weapons.

Hague Convention of 1899, prohibited the use of poisons in any form. In 1925, the Geneva Protocol prohibited the use in fighting of pathogens, asphyxiating substances and toxic gases.

Opened for signature on 10th April 1972 in London, Moscow and Washington, *the Convention regarding the Prohibition of the Development, Production and Stockpiling of Biological and Toxin Weapons and their destruction (Biological and Toxin Weapons Convention - BTWC)* did not mean the liquidation threat of biological weapons. This Convention is considered the first universal disarmament treaty prohibiting the production and use of an entire category of weapons of mass destruction - bacteriological (biological) and toxin, and it is a key component for the overall disarmament and nonproliferation. BTWC entered into force on March 28th, 1975 and determined states to take measures for the implementation in national legislation and to act in a manner so that activities would not take place on national territory.

---

[11] In 1944, japanese prince Mikasa released that in 1931 the japanese army tried to poison the members of the Leagues of Nations that examined the situation in Manciuria, which was occupied by Japan. Fruits which were injected with holera bacillus were served at an official dinner; luckily, the members of committee were not contaminated. Source: Andrew Lloyd, Peter Mathews, *op.cit*., p.32.

[12] NIC, *Mapping the Global Future 2020*, Washington DC, 2005, p.33, apud. Marin Cruceru, Carmen Mureşan, *op.cit*., p. 133.

[13] *Ibidem*, p. 29.

Romania signed the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological and Toxin Weapons and destruction on April 10th, 1972, and ratified by Decree no. 253 of July 6th, 1979, published in the Official Gazette of R.S. Romania no.57 of 7th July 1979, instruments of ratification were deposited with the July 25th, 1979.

A growing number of states have acceded to the BTWC, as follows: the number of Signatory States and became part reached 171, the States which have ratified or acceded to come to 155 (of which 16 countries have ratified the Convention), and a total of 23 countries did not sign the Convention (Andorra, Angola, Cameroon, Chad, Comoros, Cook Islands, Djibouti, Eritrea, Guinea, Israel, Kazakhstan, Kiribati, Marshall Islands, Mauritania, Micronesia (Federal States of), Mozambique, Namibia, Nauru, Niue, Samoa, Trinidad and Tobago, Tuvalu, Zambia).[14]

Although the number of signatory states increased, investigation carried out in 1995 shows that 17 countries were suspected of developing biological weapons were involved: Iran, Iraq, Libya, Syria, North Korea, Taiwan, Israel, Egypt, Vietnam, Laos, Cuba, Bulgaria, India, South Korea, South Africa, China and Russia.[15]

Of all regional efforts to strength regulations on combating bioterrorism can be mentioned: *EU Strategy against Proliferation of Weapons of Mass Destruction* (2003), stating that the Union will lead efforts to regulate trade in materials that can be used in the production of biological weapons; *the Green Book* concerns the preparation for biological threats (2007), which includes principles for bioterrorism in the EU, as well as standards and minimum requirements for the success of the program; the Directive no.2009/41/EC of the European Parliament, which regulates the use, handling and registration of genetically modified organisms in the EU etc.

Romanian national legislation on bioterrorism includes: State Council Decree no. 253 of 6th July 1979 on the ratification of the BTWC; OGU no.158/1999 regime on imports and exports, which regulates import and export of dual use; Law no.387/2003 on export control regime the dual-use goods and technologies; Law no.535/2004 on preventing and combating terrorism; Law no.92/2004 approving Romania's participation in the Australia Group for non-proliferation export controls for chemical and biological weapons; OGU no.44/2007 regarding the utilization in condition of isolation of organisms genetically modified for the approval of Law no.3/2008, OGU no.44/2007.

[14] Source: http://www.ancex.ro/?pag=69, accessed on 5 January 2012, hour 11.40.
[15] Andrew Lloyd, Peter Mathews, *op.cit*., p. 77.

Conclusions

In the entire world, at political, social, medical, media level bioterrorism is a frequently discussed topic. It still remains a "*subject little understood*."[16] Understandable reasons that motivate terrorists to use such weapons and kill innocent people still exist.

Toxicity and lethality, low cost and dirty methods that are used as biological weapons are preferred by terrorists. No matter the political reasons, the religious, ecological or other ideological objectives invoked by terrorists, bioterrorism induces terror and easily leads to panic and social discussions. In addition, the execution time from attack to the outbreak of disease decreases the chance for authorities to catch the attackers.

Bioterrorism remains a serious and current threat to the individual, national, regional, and international security. The evaluation of this threat is an appreciation of how biological agents can be bought and how may be spread.

I think we need to increase the popularization of the immediate measures that can be applied to reduce the effects of biological attacks. Because of this aspect, the international community's efforts must be one in accordance with the defense against terrorism.

BIBLIOGRAPHY

Cruceru Marin, Mureşan Carmen, *Bioterorismul şi pandemiile - riscuri majore de securitate în secolul al XXI-lea*, TOPFORM Publishing House, Bucharest, 2010.

Fendrihan Sergiu, Lăzureanu Cătălin, Prioteasa Cornelia, *Bioterorismul*, Bioflux Publishing House, Cluj-Napoca, 2011.

Lloyd Andrew, Mathews Peter, *Bioterorismul, flagelul mileniului III*, Hiparion Publishing House, Cluj-Napoca, 2002.

Păun Ludovic, *Bioterorismul şi armele biologice*, Amaltea Publishing House, Bucharest, 2003.

Simileanu Vasile, *Conflictele asimetrice*, TOP FORM Publishing House, Bucharest, 2011.

Bioterorismul şi armele biologice în lume, broşura S.R.I., accesibilă pe pagina de internet www.sri.ro;

http://www.bioetica.ro/atdoc/RRBv5n4_2007_Ciureanu_RO.pdf

http://www.mae.ro/node/2018

http://www.ancex.ro/?pag=69

[16] Professor W. Seth Carus, director of the Center for the study of weapons of mass destruction of the U.S. National Defense University, supports this view; source: Marin Cruceru, Carmen Mureşan, *op.cit*., p. 135.