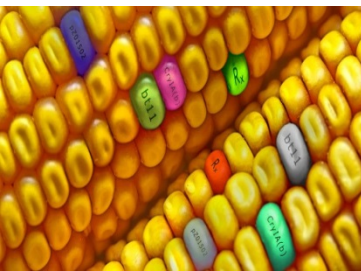
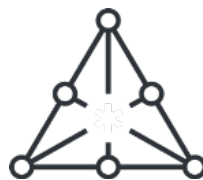


Agroterrorism: Agriculture as a target

What should be done?

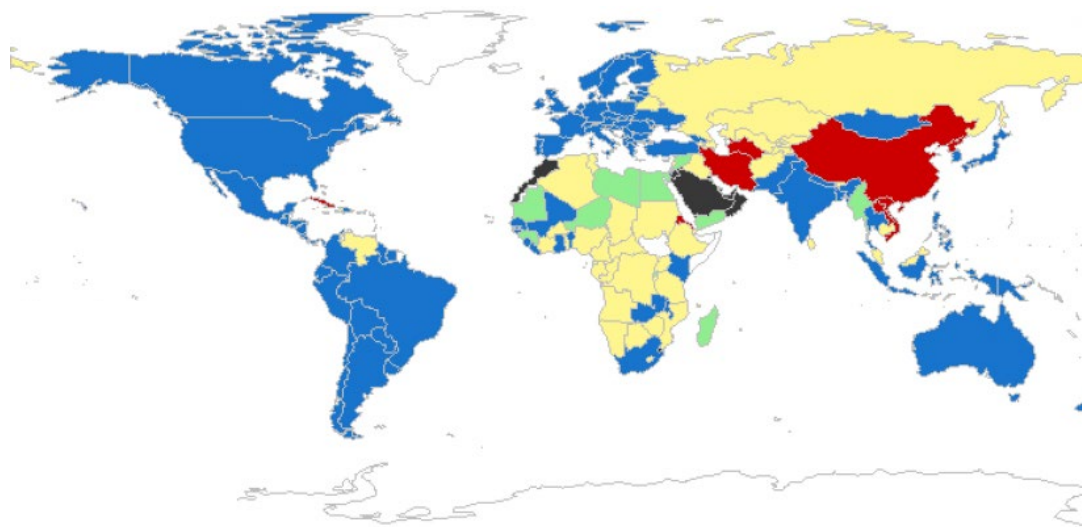
Biological Weapons Convention
Geneva, December 1st 2019





How big is our world?

195 countries in the
world:



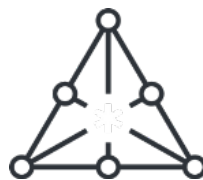
54 in Africa

48 in Asia

44 in Europe

35 in America

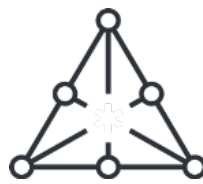
14 in Oceania



What are we going to face in the coming years...

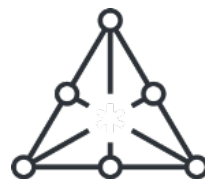
- Unknown outbreaks
- Terrorism
- Activities without appropriate risk assessment
- Excessive use of GMOs
- Use of unknown technology
- Others.....





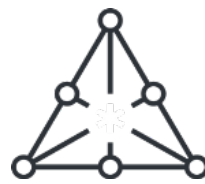
Concerns about agroterrorism

- Agricultural distribution (open fields and pastures).
- Livestock vs agriculture.....difficult to secure from intruders!
- Livestock are frequently concentrated in confined locations
- The presence (or rumor) of certain pests or diseases will quickly stop all exports
- Experience with foreign diseases.....



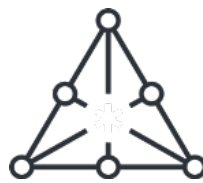
The fact is...

- The number of lethal and contagious biological agents is greater for plants and animals than for humans...
- These diseases are environmentally resilient, endemic in foreign countries, and not harmful to humans..... easy to acquire?



What would be the impact?

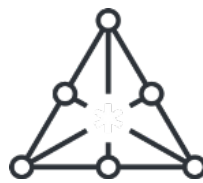
- The demand for certain types of food may decline based on which products are targeted in the attack.
- Demand for other types of food may rise due to food substitutions.



What would be the impact? (cont.)

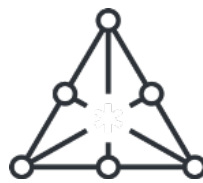
An event would cause economic losses to:

- Individuals
- Businesses
- Governments
- Farmers, input suppliers, food processors, transportation, retailers food service providers...



Some historical events...

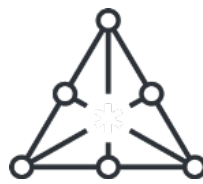
- In 1952, the Mau Mau killed 33 head of cattle at a mission station using African milk bush (a local plant toxin).
- In 1997 an attack by Israeli settlers sprayed pesticides on grapevines in two Palestinian villages.



We are still facing problems...

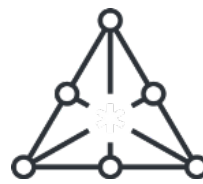
Lack of:

- a) *Financial resources*
- b) *Training*
- c) *Personnel assigned to the "biosafety and/or biosecurity" activities*
- d) *Interest in the subject*
- e) *Opportunities to "learn more about the subject"*



The challenges that we face regarding biosafety and biosecurity

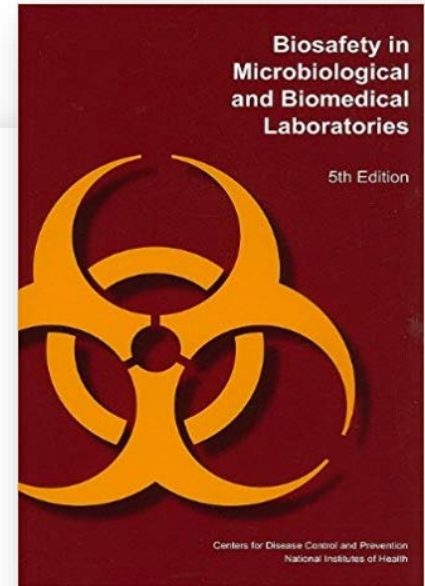
- Limited government support and not defined priorities
- Ignorance of inventories of hazardous materials and personal reliability
- Use of new emerging technologies without an appropriate risk assessment
- Diverse professional training ...



The challenges that are facing

- Specific work plans (integration programs)
- ***"New Biosafety-Biosecurity Regulations"***
- The need for a continuous and adequate training...
- Language and cultural barriers ...

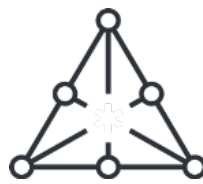
LABORATORY
BIOSAFETY
MANUAL
FOURTH EDITION



ICS > 03 > 03.100 > 03.100.70

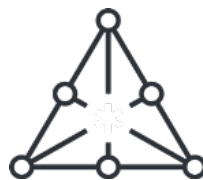
ISO 35001:2019

Biorisk management for laboratories and other related organisations

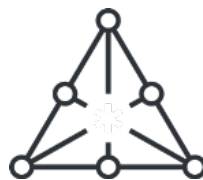


Determinants to an adequate response

- Infrastructure
- Technical competence against: unusual events, emerging/re-emerging diseases, adapt to new technologies, treat atypical cases...
- Media and political pressure
- Ignorance and lack of information
- “Limited networking”
- Excessive regulations?
- Several hazards



No successful large-scale attacks have been reported to-date, however that doesn't mean that possibility is not there...



Comments, questions?

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