



Indo-US

Workshops on

Security of Dual use Agrochemicals

2017



August 1, 2017 New Delhi

Dr. Jitendra Kumar, Coordinator

August 4, 2017 GFSU, Gandhinagar, Gujarat

Prof. V. K. Jain & Prof. Y.K. Agrawal, Coordinators

August 8, 2017 CSIR-IICT, Hyderabad

Dr. G. V. M. Sharma & Dr. K. V. Raghavan Coordinators



Institute of Pesticide
Formulation Technology



Gujarat University
Ahmedabad

GFSU



Gujarat Forensic
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Security of Dual use Agrochemicals

Improving Security at Vulnerable Locations in the Agrochemical Supply Chain

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Security of Dual use Agrochemicals
Improving Security at Vulnerable Locations in the Agrochemical Supply Chain

Theme

The agrochemicals in India are highly regulated. The insecticide Act (1968) and Insecticide rules (1971) regulate their import, registration process, manufactures, sale, transport and distribution. They have to necessarily undergo the registration process with the central Insecticide Board of India and can be made available for use or sale. For setting up agrochemical manufacturing plants or their expansion in India, the clearance has to be obtained by the State Pollution Control Boards after submitting the reports on hazard and risk analysis and environment impact assessment as per the Environment Protection Act (1986).

The dual use agrochemicals in the world [signatories of Chemical Weapons Convention (CWC) including India] are governed by the regulations of the Organization for the Prohibition of Chemical Weapons (OPCW) at The Hague, The Netherlands. They are listed under schedules 2 and 3 of the CWC Act. The National Authority on Chemical Weapons Convention (NACWC) is established at the Cabinet Secretariat, Government of India for working on safety and security of dual purpose chemicals. The later required more attention in India in the light of chemical terrorism incidents happening throughout the world.

The participants for the three workshops will be drawn by invitation from agrochemicals industries, the regulating and security agencies, academic and research institutions and the government agencies and industry organizations concerned with the chemical security. The US Department of State's Chemical Security Program, Washington-DC, Pacific Northwest National Laboratory (PNNL), The Oregon State University, all from USA, along with CSIR-Indian Institute of Chemical Technology (CSIR-IICT), Gujarat Forensic Science University (GFSU), Gandhinagar and Institute of Pesticide Formulation Technology, Gurugram, have taken a joint initiative to organize three workshops. They will network with the eminent national and local organizations to execute the technical programme formulated by the International Advisory Committee of the workshop.

The Indo-US presentations on the technical and regulatory aspects will be covered in six technical sessions at each workshop venue. The Indian and US speakers will dwell on the dual use agrochemicals - the security concerns, history of attacks, their safety and security at production, storage, transport and supply chain, cyber security, evaluating and improving their security, regulatory aspects, working with law enforcing agencies and the finally 'the way forward'.

Workshop Syllabus



09h00 - 10h00: **Registration (Tea and Coffee)**

10h00 - 10h45: **Opening Session**

10h00 - 10h45: Welcome, Greetings and Introduction of the Speakers and Participants
The Purpose and Goal of the Workshop
Address by the Guest of Honor
Inaugural Address by the Chief Guest
Vote of Thanks

10h45 - 11h15: **Tea Break Social Interaction**

11h15 - 12h15: **Technical Session 1**

Threats and History of Attacks

11h15 - 11h40: **Security Concerns of Dual use Agrochemicals**

Why are we concerned with the security of agrochemicals?

(C. Glantz and Indian Partner)

- Who are the potential adversaries who might want to steal and weaponize the agrochemicals?
- What are the potential consequences of such an attack?

11h40 - 12h05: **History of Dual use Chemical Attacks and Lessons Learnt**

- Incidents from around the world
- Incidents in India

12h05 - 12h15: **Questions and Answers**

12h15 - 13h30: Technical Session 2
Identifying Dual use Agrochemicals and Potential Hazards and Risks

- 12h15 - 12h35: **Identifying Dual use Agrochemicals** (Indian Partner)
- What commonly used agrochemicals are potentially weaponizable?
 - What technologies are used to weaponize agrochemicals?

- 12h35 - 12h55: **The Agrochemical Supply Chain** (R. Motkuri)
- How are the agrochemicals stored and transported?
 - What are typical security vulnerabilities in the supply chain?

- 12h55 - 13h15: **The Hazard and Risk Potential of Dual Use Agrochemicals** (Indian Partner)

- 13h15 - 13h30: **Questions and Answers**

- 13h30 - 14h15: **Lunch Social Interaction**
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14h15 - 15h15: Technical Session 3
Approaches for Evaluating and Improving Agrochemical Security

- 14h15 - 14h50: **Evaluating the Security of Agrochemicals** (R. Siefken)
- Introducing the physical security and system effectiveness evaluation process
 - Introducing the vulnerability to intrusion system analysis (VISA) methodology

- 14h50 - 15h00: **Cybersecurity in Agrochemical Industry** (Cliff and Indian Partner)

- 15h00 - 15h15: **Questions and Answers**
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15h15 - 16h00: Technical Session 4
Agrochemical Security Regulations

- 15h15 - 15h45: **Agrochemical Security Regulations - US and India Scenario**
(V. Sathuvalli and Indian Partner)

- 15h45 - 16h00: **Questions and Answers**

- 16h00 - 16h15: **Tea Break Social Interaction**
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16h15 - 17h15: Technical Session 5
Strengthening Agrochemical Security

16h15 - 16h30: Security Practices (C. Glantz)

- General guidance
 - What is done in the US that can be applied in India?
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16h30 - 17h00: How to Work with Law Enforcement to Establish and Strengthen the Dual use Agrochemical Security (Indian Partner & R. Siefken)

- Working with law enforcement personnel to prevent an incident
 - Security Incident detection and reporting
 - What occurs after an incident is reported
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17h00 - 17h15: Questions and Answers

Valedictory Session Workshop Wrap Up

17h15 - 17h45: Concluding Remarks and Next Steps ((Indian Partner and C. Glantz)

- Who to turn to for help?
- How to use workshop materials?
- Final Questions and Answers

Patrons, Advisory and Organizing Committees

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