



Worst Case Scenario or No-Risk Option? Managing Fertilizer Safety and Security in Canada

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Fertilizer Safety & Security Council
Conseil de la sécurité en fertilisation

Canadian Fertilizer Institute (CFI)

- ✓ Canadian manufacturers, distributors, retailers
- ✓ 24 million tonnes/year
- ✓ nitrogenous fertilizers and potash
- ✓ agricultural, urban, industrial uses



CFI Stewardship

Chronic Risks

- ✓ “Right Product @ Right Time, Right rate, Right Place™”
- ✓ Nutrients for Life Foundation Canada
- ✓ Urban Fertilizer Council

Acute Risks

- ✓ Fertilizer Safety and Security Council
- ✓ Safety and Training Programs



The **Canadian Fertilizer Institute (CFI)** has developed the **Right Product@Right Rate, Right Time, Right Place™** system to help city officials and homeowners apply gardening nutrients responsibly. *Getting it right can be made simple by using the following*



Right Product
Use the correct fertilizer for your soil conditions.



Right Rate
Use the right amount of fertilizer



Right Time
Use fertilizer at the right time of the year



Right Place
Make sure fertilizer stays where it has the most benefit to your lawn and the least impact on the environment and our waterways



Fertilizer Safety & Security Council
Conseil de la sécurité en fertilisation

Fertilizer Safety and Security Council (FSSC)

- ✓ launched in 2003
- ✓ core mandate – management of acute risks - accidental or intentional release through prevention, preparedness & response
- ✓ executive includes manufacturers, distributors, retailers
- ✓ involvement of government, other industry, 1st responders
- ✓ public and regulatory policy development
- ✓ codes of practice, training, guidelines, communications



Fertilizer Safety and Security Council

Hopes

- ✓ desire to be masters of own fate
- ✓ not always reacting to issue of the day
- ✓ not victims of government policy

Beliefs

- ✓ establish an industry behavioural system



Fertilizer Safety and Security Council

How?

- ✓ community of partners which led to:

Challenges

- ✓ old thinking
- ✓ resistance from within and without



Fertilizer Perceptions and Realities

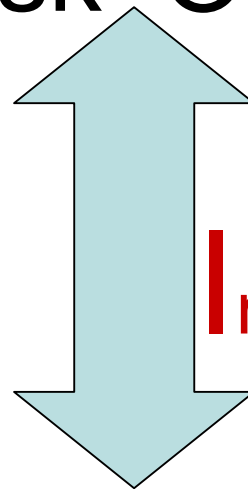
Healthy Use



Unhealthy Misuse



Public Expectation
No-Risk Option



Intervention Gap

Public Perception
WorstCase Scenario



The Gap

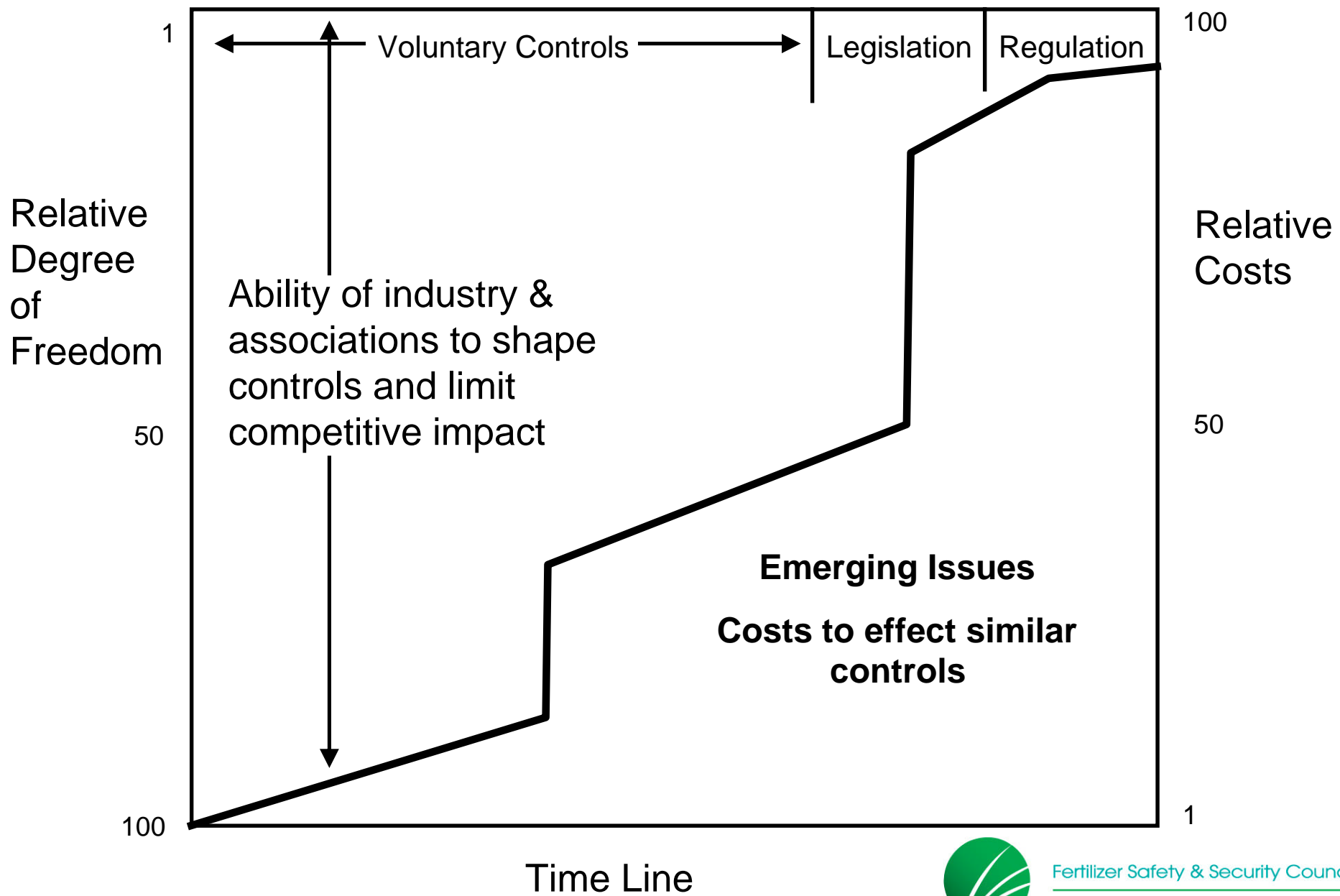
Public Perceptions

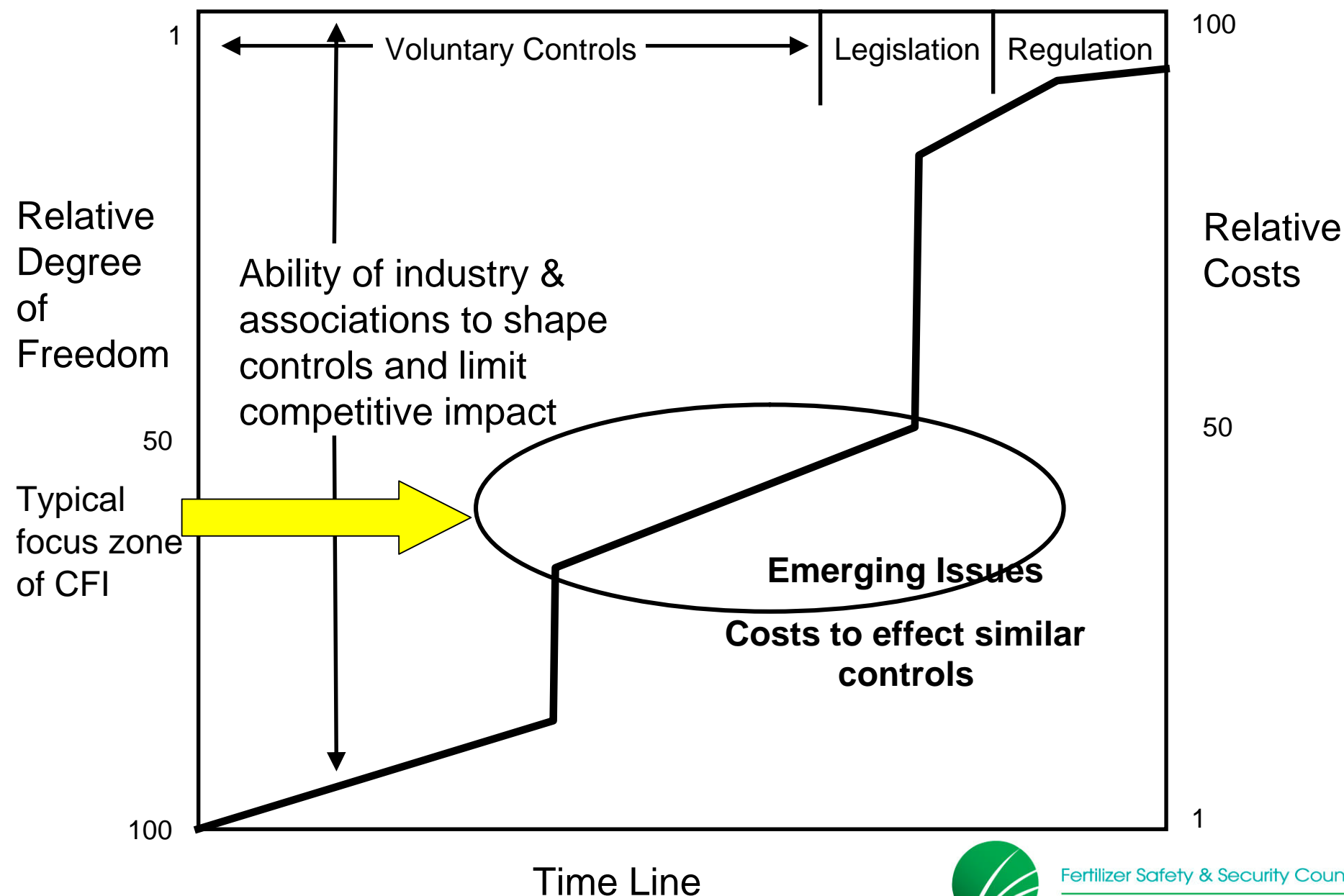
terrorism, bomb ingredients, public safety, toxic ammonia, crystal meth, food: safety, quality and quantity, BSE, pandemics, air, water, and land pollution

Public Expectations: Industry Practices

BMP's, operating procedures, guidelines, codes of practice, training, mutual aid, communications, public outreach, Fertilizer Safety and Security Council, Crop Nutrients Council







Safety vs. Security

Safety Problem

✓ Everyone tries to do the right thing but still something goes wrong.

Security Problem

✓ At least one person tries to do the wrong thing, and something does go wrong



WHAT IS RISK?

Risk = Hazard x Exposure + Outrage

(Peter Sandman)

Safety vs. Security

Hazard: Usually the same but not always

Exposure: Unintended vs.
intended/malicious/unpredictable


Outrage: Inward vs. outward looking – an industry
has been built upon security outrage



Ammonia-Safety and Security

Risk= Hazardx Exposure+ Outrage

Hazard Properties

- ✓ TDG Class 2.2  2.3
- ✓ corrosive to body tissues, reacting with body moisture on contact

Exposure - Safety

- ✓ accidental release: exposure: skin, inhalation

Exposure - Security

- ✓ methamphetamine: release of product and or violence during theft

Outrage - Perceived Weapons of Mass Destruction?

- ✓ tank cars, bullets, nurse wagons



Methamphetamine

Managing the Hazard

Risk = Hazard x Exposure + Outrage

Hazard

- ✓ additive that renders anhydrous ammonia ineffective in the production of methamphetamine
- ✓ GloTell, an additive that acts as a theft deterrent and leak detector



Methamphetamine

Managing the Exposure

Risk = Hazard x Exposure + Outrage

Exposure

- ✓ ammoniac ode of practice
- ✓ steps for retailers
- ✓ actions for farmers



Methamphetamine

Managing the Outrage

Risk = Hazard x Exposure + Outrage

✓ Communications

- “Canadian Fertilizer Institute is alarmed...”
- “it is unacceptable that our product is being used for an illegal and destructive purpose”
- “We recognize the potential hazards...”



Ammonium Nitrate Incidents



Texas City, 1947



Oklahoma City, 1995



Karachi, 2002



Bali, 2002



AN Safety Risk

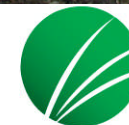
**28 killed when Mexican
explosives truck blows up:
JUAN MONTANO, Associated
Press, September 11, 2007**



AN Safety Risk

Azote de France (AZF) fertilizer plant
Toulouse (France) 2001/09/21

- ✓ 400 t off-specification AN
- ✓ 40 to 80 t involved in explosion
- ✓ 30 fatalities
- ✓ 2500 injured
- ✓ 15000 damaged apartments
- ✓ Loss €2.3 billion



Ammonium Nitrate

Managing the Exposure

Risk = Hazard x Exposure + Outrage

Exposure

- ✓ ammoniumnitrate code of practice
- ✓ steps for retailers
- ✓ actions for farmers



Ammonium Nitrate Outrage

Risk = Hazard x Exposure + Outrage

Canada's National Newspaper

March 1, 2008

- ✓ An al-Qaeda yard sale?
- ✓ "If I'm a terrorist, where am I going to look for fertilizer? Through some guy's barn ... or am I going to the dealership with 20 white bins in it?"



Risk = Hazard x Exposure + Outrage



June 3, 2006

Three tonnes of fertilizer seized in raid

By MIKE OLIVEIRA

TORONTO (CP) - It's a substance easily purchased every day at countless Canadian hardware and gardening stores, yet three tonnes of fertilizer - also known as ammonium nitrate - could have done catastrophic damage to Canadian terrorism targets.



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Risk = Hazard x Exposure + Outrage?



Stiffer rules for fertilizer sales stalled since 9/11

Explosive used by many farmers has proved difficult to regulate

BY GLEN MCGREGOR

For nearly five years, the federal government has been considering how to control the sale of an explosive that has been used by terrorists, but has yet to pass any legislation.

Only voluntary guidelines for the fertilizer industry govern the sale of ammonium nitrate, the chemical allegedly ordered by the hijackers of the *Titanic* to maintain afloat in the Toronto area.

Public Safety Minister Stephen Harper said yesterday that the government was still deciding whether to regulate ammonium nitrate in the sector.

"It's a conversation that's being looked at," he said. "There's already some legislation in place in the Explosives Act and I don't know where we're going to go from there."

Some manufacturers have been caught up in the regulatory process, which is still working on new rules.

"It took us a while to get the bill drafted," said David Wilson, CEO of the Canadian Fertilizer Institute. "We've spent a lot of time with it."

The sale of the explosive has been regulated under the Explosives Act, regulations on the sale of the explosive substances in 1995 made it illegal for farmers to buy, possess, or use it.

Ammonium nitrate is a common fertilizer used in the West. In 1995, the Canadian Fertilizer Institute, the West-Trade Center and the Fertilizer Institute of the United Kingdom formed a coalition with the chemical to lobby a federal bill in Ottawa. The bill was also supported by the British Columbia Fertilizer Association and the Canadian Fertilizer Institute in London that failed.

The Canadian Fertilizer Institute has not been able to get the bill passed, apparently because of the issues raised by the industry and the difficulty of controlling the product in only one country.

"The question is, what are the risks and the exposure to the

public, if ammonium nitrate is used in the wrong way?" Wilson said.

Natural Resources Minister Gary Filmon's office was involved in the process, but was not involved in the final decision, according to the fertilizer industry.

The industry has proposed a voluntary code of practice requiring dealers to report thefts or suspicious sales.

The code drafted with the Canadian Fertilizer Institute requires agricultural users to be identified, but not to be identified. It also places restrictions on the storage, transport and storage of the fertilizer.

"We hope that a code of practice will come in, but they'll say, 'Look, we're not going to do it until we have a code of practice,'" said Dave Blaylock, the CEO of the Fertilizer Institute's sales division.

Mr. Blaylock says he was told in 2001 that the government would be looking at the new code by last summer or early fall.

The industry's voluntary code has been rejected by a public safety committee, which says that it does not meet the standards for the Explosives Act, which requires a code of practice.

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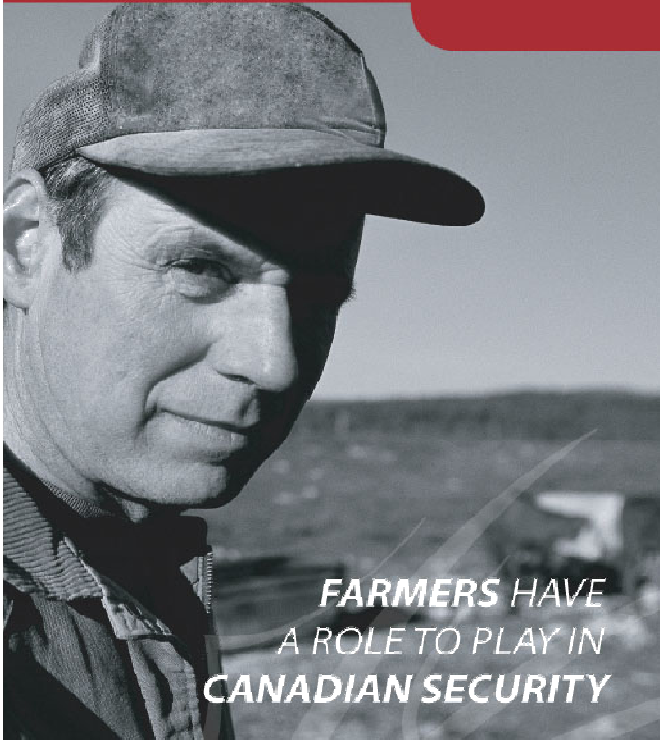
The Ottawa Citizen June 19, 2002 p. A4

A pamphlet produced by the Canadian Fertilizer Institute warns farmers the danger lies in storing fertilizer in bulk and has raised specific questions about their results when buying ammonium nitrate.

The industry also said that the more checked in Toronto and used in other parts of the country, the more dangerous they claim ammonium nitrate is. The bill, drafted by the Fertilizer Institute, is also being rejected by a public safety committee, which says that it does not meet the standards for the Explosives Act, which requires a code of practice.

ON GUARD

SPONSORING ORGANIZATIONS



**FARMERS HAVE
A ROLE TO PLAY IN
CANADIAN SECURITY**


CANADIAN FERTILIZER INSTITUTE
INSTITUT CANADIEN DES ENGRAIS


CANADIAN FERTILIZER INSTITUTE
INSTITUT CANADIEN DES ENGRAIS


Canadian Association
of Agri-Processors


ONTARIO AGRIBUSINESS
ASSOCIATION


Atlantic
Fertilizer
Institute


Association
des fabricants d'engrais
du Québec


Quebec
Fertilizer Manufacturers
Association


Royal Canadian Gendarmerie royale
Mounted Police du Canada


Natural Resources
Canada


Ressources naturelles
Canada



Fertilizer Safety & Security Council

Ensure ammonium nitrate stays in the right hands. Conseil de la sécurité en fertilisation
Call 1-800-387-0020 to report suspicious activity.

Security & Fertilizer

Individual Codes:

- ✓ anhydrous ammonia (complete)
- ✓ ammonium nitrate (complete)
- ✓ liquids (in progress)

Comprehensive safety and security framework for nitrogen fertilizers



Nitrogen Framework

Key principles

- ✓ conduct our operations in accordance with best management practices (BMP's) developed by CFI members for safety and security
- ✓ know your customer
- ✓ verify your suppliers (e.g. transportation providers)
- ✓ report suspicious activities



Summary

Create a Community

Recognize and address (intervention) Gaps

Strategic Timing

Manage Hazard, Exposure, **and** Outrage



Thank You!

David Finlayson
Canadian Fertilizer Institute

www.fssc.cs



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