

Agrochemicals and Security

A Training Module for the
Safe and Secure Storage of
Pesticides and Fertilizers



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The Agrochemical and Security Series is available for download from the Florida Cooperative Extension's Disaster Handbook Web site <<http://disaster.ifas.ufl.edu>>. The series comprises six units:

- Why It Matters (An introduction to agrochemical security)
- Chemical Safety
- Homeland Security and Fertilizers
- Homeland Security and Pesticides
- Security and Anhydrous Ammonia
- Developing a Hazard Mitigation Plan

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About Florida AgSafe

Florida AgSafe is a program of the Florida Cooperative Extension Service that provides information and educational materials for agricultural safety and for disaster preparedness and recovery. Materials produced by Florida AgSafe are available on the Web at <www.flagsafe.ufl.edu> and at the Florida Cooperative Extension publication Web site <edis.ifas.ufl.edu>.

Our Goals

- To inform people about ways to be safe and secure, and thereby reduce the number of deaths, injuries and occupational diseases, particularly for agricultural workers and their families.
 - To build a safety infrastructure for Florida through five activities: training of workers, training of students, publications, networks, and linkages.
 - To encourage adoption of safe practices among employees and clientele. Every employee or client should be exposed to a safety tip or safety practice on a regular basis.
 - To prepare the people of Florida to face disaster of any kind, to mitigate losses, both in life and property, and to promote rapid and effective recovery.
-

Preface

For many years, producers have been aware of the health hazards of pesticides. These materials are carefully regulated, and the safety requirements for every pesticide product are spelled out in detail. Most fertilizers have been in an opposite category, considered useful, safe and inert. However, in recent years, agricultural chemicals — specifically, fertilizers — have been used in some of the most damaging terrorist attacks around the world.

These attacks have given the general public, agricultural producers and governmental authorities a new point of view. It is important for all to realize that, in the wrong hands, agricultural chemicals, including fertilizers and pesticides, could be used to do great damage.

This module provides several units which address different aspects of this problem. There are six units in this training module (with the page numbers where they can be found in this manual):

Unit 1: Introduction: Agrochemicals and Security — Why It Matters	5
Unit 2: Chemicals and Safety	15
Unit 3: Homeland Security and Fertilizers	51
Unit 4: Homeland Security and Pesticides	85
Unit 5: Security and Anhydrous Ammonia	125
Unit 6: Developing a Hazard Mitigation Plan	161

Units can be used separately or in combinations depending on audience needs. Each unit consists of:

- A narrative which gives background material;
- A PowerPoint presentation which parallels the narrative;
- Pre- and post-tests, and an evaluation; and
- Table-top exercises (selected units).

The module is structured to give the presenter plenty of flexibility. Use all six units with table-top exercises to create a day-long workshop on agricultural security, or show only one PowerPoint presentation with a question and answer period for a 20- to 30-minute training session. Reduced images of all PowerPoint slides are included with each unit and can be copied to create a participant workbook.

How to Use Pre- and Post-Tests

The idea of a “pre-post” test is that participants take the same brief quiz before and after the presentation. This gives the presenter and the participants an objective view of how much participants learned and how effective different points in the presentation were. A pre-post test takes just a few minutes before and after the presentation, but it can be a valuable tool for evaluating the presentation and reporting its impact on participants.

Unit 3: Homeland Security and Fertilizers

Subject Fertilizers are critical to modern agriculture, but they are chemicals that have other uses. One of these uses is as explosives. Appropriate security measures on the farm and among fertilizer distributors can reduce the possibility of misuse.

Goal Make participants aware of the potential misuses of fertilizers and explain security and awareness measures that can prevent fertilizers from falling into the wrong hands.

Objectives As a result of this session, participants will:

- Be aware that agricultural fertilizers can be used to make explosive mixtures.
- Understand behaviors that may indicate suspicious activity.
- Understand that specific security measures can prevent unlawful access to fertilizers.

Session Outline

Part 1: Welcome and Introduction
Part 2: Unit Learning Objectives
Part 3: Pre-Test
Part 4: Module Introduction
Part 5: Learning Sections

Section 1: What is a fertilizer?
Section 2: What are fertilizers made of?
Section 3: Why do terrorists want fertilizers?
Section 4: Improving Security

4A. Security: Storage
4B. Security: Transportation
4C. Security: Personnel
4D. Security: Disposal
4E. Security: Response

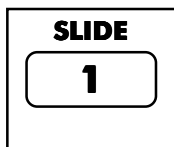
Section 5: Identifying Suspicious Behavior
Section 6: Who should you contact if you suspect theft?
Section 7: Summary

Part 6: Questions and Discussion
Part 7: Post-Test
Part 8: Table-top Exercise and Handout "Recognizing Suspicious Behavior"
Part 9: Session Evaluation
Part 10: Adjourn

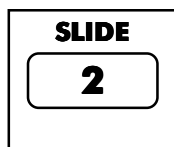
Learning Environment and Aids

To conduct this training, you will need:

1. "Homeland Security and Fertilizers" PowerPoint presentation, and a means to show it. (Download from the UF/IFAS Disaster Handbook Web site: <<http://disaster.ifas.ufl.edu>>.)
2. Note paper or PowerPoint slide pages to serve as participant workbooks
3. If desired, sufficient copies of the Pre- and Post Test for all participants to take the test both before and after session
4. Unit 3 evaluation forms.

Part 1 — Welcome and Introduction

Take a moment at the beginning of the lesson to welcome the participants to the session. Introduce yourself as the presenter, and remind participants of the title and subject (above) of the session.

Part 2 — Unit Learning Objectives

Briefly introduce the audience to the learning objectives for this unit:

- Be aware that agricultural fertilizers can be used to make explosive mixtures.
- Understand behaviors that may indicate suspicious activity.
- Understand that specific security measures can prevent unlawful access to fertilizers.

Part 3 — Pre-Test

If you choose to administer pre- and post-tests, do so now before you do anything else. Explain to the participants that everyone will take a short quiz before the session just to give themselves a clearer idea of what they already know about the subject and some things they will learn during the session. Tell them that they will take the same test at the end of the session and this will help the presenter by giving an idea of the effectiveness of the session.

The pre- and post-tests should take only a few minutes each.

Part 4 — Module Introduction

If participants have not covered the Module Introduction in a previous session, present that material now as a general introduction to the importance of agricultural security.

Part 5 — Learning Sections

Section 1. What is a fertilizer?

SLIDE

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A fertilizer is defined as a material that primarily adds nutrients to the soil. There are two main types of fertilizers: organic and synthetic. Organic fertilizers contain only substances derived from processing natural materials, while synthetic fertilizers contain manufactured chemicals. The chemicals in synthetic fertilizers are used more efficiently by plants and are therefore widely used.

Many people use fertilizers on a small scale on their lawns and in backyard gardens. Such fertilizers are purchased in small quantities and are usually mixtures of many ingredients, including minerals and herbicides. These fertilizers are not of concern in this unit. They are impractical for use in making explosives.

For large-scale agricultural producers, fertilizers are usually large quantities of a single fertilizer chemical, such as ammonium nitrate or urea. Large quantities of these relatively pure chemicals can be used in making explosives, and these are the kinds of fertilizers that will be discussed in this unit.

Section 2. What are fertilizers made of?

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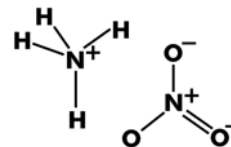
Fertilizers can supply a number of nutrients, especially nitrogen, phosphorus and potassium. The potential of a fertilizer for making explosives depends on the amount of nitrogen and the kind of nitrogen the fertilizer contains. Therefore, people wishing to make fertilizer-based explosives seek out high-nitrogen fertilizers.

There are three principal high-nitrogen chemicals used in the production of fertilizers: ammonium nitrate, potassium nitrate and urea.

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CHEMICAL NAME: Ammonium Nitrate
 CHEMICAL FORMULA: NH_4NO_3
 FERTILIZER FORMULA: (35-0-0)

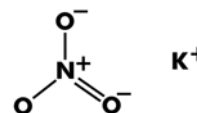


Ammonium nitrate is a colorless salt of ammonia and nitric acid, which is crystalline in form. Commercial grade ammonium nitrate contains about 34% nitrogen, all of which is utilizable by plants, therefore, it is the most common nitrogenous component of fertilizers. Heating ammonium nitrate may cause violent combustion or explosion. The nitrate molecule, pictured on the right above, is a strong "oxidizer," which means that under the right circumstances, it reacts readily with combustible materials like fuel, or so-called "reducing" materials like metals.

SLIDE

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CHEMICAL NAME: Potassium Nitrate
 CHEMICAL FORMULA: KNO_3
 FERTILIZER FORMULA: (14-0-39)

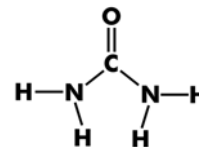


Potassium nitrate is a colorless transparent crystal or white powder. When heated, it decomposes and releases oxygen. Like ammonium nitrate, it is also a strong oxidizer. Potassium nitrate is more stable than ammonium nitrate, nevertheless, it can enhance the burning of organic materials, possibly producing an explosion. Besides fertilizers, an important use of potassium nitrate is in the manufacture of gunpowder.

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CHEMICAL NAME: Urea
 CHEMICAL FORMULA: $\text{CO}(\text{NH}_2)_2$
 FERTILIZER FORMULA: (46-0-0)



The third important nitrogen fertilizer is urea, which is also used as an additive in animal feeds. Urea is also a white, crystalline substance. For fertilizer uses, urea is usually sold in the form of granules. It is often comparable in price to ammonium nitrate, and pound for pound provides more nitrogen. Urea can also be used in combination with other materials to make explosive compounds, however, the mixture can be very unstable.

Section 3. Why do terrorists want fertilizers?

SLIDE**8**

Bombs made from fertilizers and fuel oil are attractive to terrorists because there are so many sources of the base materials, and they are easily purchased in the quantity needed. The weight of the bombs used in our previous examples gives an indication of the amount of fertilizer required: the total weight of the 1993 World Trade Center (WTC) bomb was about 1300 pounds; the Oklahoma City bomb was estimated at 5000 pounds, and as much as 4000 pounds of it was ammonium nitrate fertilizer. Clearly, these bombs were capable of significant destruction.

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The problem of fertilizer bombs is world-wide. Many groups see fertilizer bombs as a simple means to a devastating result. These bombs have caused thousands of deaths and injuries around the world. Many countries have created controls that prevent nitrate fertilizers from falling into the wrong hands. Although the 2001 attacks on the World Trade Center and Pentagon did not involve fertilizer bombs, those attacks drew new attention to the activities of terrorists, and a number of plots involving fertilizer bombs have been thwarted. Nevertheless, terrorist groups continue to seek out sources of nitrate fertilizers, and internationally, there have been thefts of significant amounts of ammonium nitrate.

Fertilizer bombs are also appealing tools for terrorists because the logistics of making a fertilizer bomb are simple. The materials are relatively cheap and accessible; they can be prepared in a short amount of time; and only simple tools are needed to create and detonate them (the “detonator” for the 1993 WTC bomb was a length of fuse and a cigarette lighter). In these factors, a fertilizer bomb far outweighs the production of sophisticated electronic bombs, where more complexity means more opportunities for failure.

Section 4. Improving Security

[Note: This security section appears in the Pesticides and Anhydrous Ammonia units, as well as this one. If more than one unit is being presented to the same audience on the same program, the presenter may wish to use the security section in only one unit.]

SLIDE**10**

Most people would think of fertilizers as harmless bulk chemicals, but now that you understand how fertilizers can be misused, you can understand the need for an attitude of security in dealing with them. Virtually everyone who uses fertilizers – especially bulk suppliers and bulk users – needs to increase security so that these materials do not fall into the wrong hands.

Good security begins with an effective security plan. A good security plan has several parts. The parts you use depend on the size and activities of your operation. An effective plan does not need to be complicated, but it should take into account each of the following areas.

- Storage
- Transportation
- Personnel
- Disposal
- Response

For each of these areas, we provide tips to improve security. Consider these tips. Decide which ones apply to your operation and make some notes about actions you can take.

4A. Security: Storage

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Key question: How easy would it be for fertilizer to “disappear” from your facility?

Suggested tips:

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- Maintain inventories so that you always know the exact quantities of fertilizer you have.
- Use logbooks to keep track of who removes fertilizers from your facility.
- Store fertilizers in a building which can be locked or in a fenced enclosure with a locked gate.
- If appropriate, provide a second security perimeter, such as a fence with a locked gate surrounding your storage facility.

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- Perform a walk-through and walk-around daily to check for attempted entry, vandalism, and structural integrity.
- Provide good lighting on all sides of your storage facility.
- For some facilities, install security systems, such as alarms and camera systems, and make sure they are properly maintained.

4B. Security: Transportation

Is transportation the weak link in your security? Once materials leave your

SLIDE**14**

facility, you may feel that your job is done, but it is important that fertilizers you sell make it all the way to the end user. The following tips will help you in developing a simple, effective security approach to transporting fertilizers. Suggested tips:

SLIDE**15**

- Create a paper-trail for any fertilizer you ship.
- Ship fertilizer in a locked vehicle.
- Go directly to the delivery point when possible, taking the best route available to avoid high population areas, tunnels and bridges.
- Exercise extreme caution if it becomes essential to stop. Avoid un-guarded and unlighted areas where theft is a substantial risk and be on your way as soon as possible.
- Be alert to vehicles following your truck, strangers asking questions, or anyone snooping around your cargo.

SLIDE**16**

- Do not pick up hitchhikers; do not talk about your cargo on CB radio; and do not discuss your cargo with those not involved.
- Always telephone your customer if you find you will be late for a delivery.
- Check your load at delivery to ensure no product is missing. Do not leave product at field site unless it is well attended or secured within buildings.
- Always obtain a signed delivery ticket.
- Carefully check background of all new drivers. Every driver should be properly licensed and trained in good practices for handling fertilizer and pesticide chemicals that may be hazardous in the hands of suspicious and/or dangerous people. Include criminal history background checks.

4C. Security: Personnel**SLIDE****17**

Do you know your employees? Do you know who has access?

Suggested tips:

SLIDE**18**

- Develop effective hiring and labor relations policies.
 - Consider background checks for current/new employees, particularly if the person handles hazardous materials.
 - Consider fingerprinting and photographing employees who handle hazardous materials.
-

SLIDE**19**

- Be aware of personal identity theft, such as stolen Social Security Numbers, references, etc.
- Request employees to watch for suspicious activities and ask persons they don't recognize to identify themselves and state their reasons for being at the facility.
- Adopt a company security whistleblower protection policy.
- Know who has keys and access to hazardous material storage areas.
- Retrieve keys and employment identification cards from an employee and change computer access passwords when their employment ends.
- Assess a worker's violence potential and take appropriate security precautions when terminating or disciplining an employee.

4D. Security: Disposal**SLIDE****20**

Do you have a plan for safe and secure disposal?

Suggested tips:

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- Maintain security over material which is being disposed of until it is claimed by appropriate authorities.
- Arrange for prompt and safe disposal of materials.
- Look for programs, such as Clean Sweep (Florida Department of Community Affairs) or periodic community hazardous waste programs.

4E. Security: Response

Do you have a formal response plan? Do your employees know it?

SLIDE**22**

Suggested tips:

SLIDE**23**

- Develop an emergency plan for your facility. Train your workers in the plan and rehearse it with them.
 - Post emergency response numbers, including fire, law enforcement, medical contacts, and poison control in several locations in your facility. Make all employees aware of these response numbers. Include your facility address and locations for easy reference during an emergency phone call. Post information in all languages needed by your workforce.
-

- Report to appropriate authorities any suspicious activities, vehicles, persons, threats to personnel or facilities, sabotage/vandalism to facilities or equipment, and thefts, inventory shortages, or missing products that could pose a risk to public health or safety.

Section 5. Identifying Suspicious Behavior

People who are buying chemicals for illegal purposes usually look just like everyone else. However, for many criminals, it takes some practice to disguise their motives. Try to use objective criteria in evaluating customers. The following pointers may be useful.

Watch for unusual or suspicious behavior by a purchaser who:

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- Seems unfamiliar with details of using fertilizers.
- Acts nervous, seems uneasy or vague, and avoids eye contact.
- Demands immediate possession of purchased material instead of future delivery.
- Asks for material in smaller individual containers rather than in bulk.
- Insists on paying in cash instead of using a check or a credit card.

Section 6. Who should you contact if you suspect theft?

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- Notify your manager.
- Report any thefts of fertilizer and/or equipment and any suspicious behavior to your local law enforcement agency.
- In Florida, contact the FDACS Agricultural Law Enforcement Office at 1-800-342-5869. [In other states, the presenter needs to determine the appropriate agency and phone number.]

Section 7. Summary

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1. There are three major solid forms of nitrogen fertilizer: ammonium nitrate, potassium nitrate and urea.
 2. These three fertilizer products can be used to create simple and powerful explosives.
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SLIDE**27**

3. Examine storage and handling procedures and develop a security plan for these five areas:
 - Storage
 - Transportation
 - Personnel
 - Disposal
 - Response

SLIDE**28**

4. Watch for unusual or suspicious behavior by purchasers.
5. Contact your manager or local law enforcement to report suspicious persons.

Part 7 — Post-Test

If you choose to administer the post-test, do so now. You have already prepared the audience for this when you administered the pre-test. Just remind them that it will take only a couple of moments.

Part 8 — Table-top Exercise

At the end of this lesson plan, there is a scenario which participants can use to further explore the issues and to examine the issues in a different way. The table-top exercise is useful but optional; the presenter may judge that the table-top is not appropriate for the audience or that there is not enough time for it. See the table-top exercise for instructions.

The table-top exercise is helpful for further development and understanding of the issues in this session. However, the presenter may wish to substitute *Unit 6 — Developing a Hazard Mitigation Plan* in which participants learn about hazard mitigation and are guided in developing a mitigation plan for their operation.

Part 9 — Session Evaluation

An evaluation form is supplied in this booklet. Ask participants to take a few minutes to fill out this form and turn it in. If you allow participants to fill these forms out at home and return them to you at a later time – even later in the workshop – the chances of getting any evaluations are greatly reduced.

Part 10 —Adjourn

Thank the participants for their attention and encourage them to adopt a security program for their fertilizers.

Additional Resources

The Fertilizer Institute (TFI) is an industry organization whose goal is “to bring the viewpoints and interest of our members to bear on public policy issues.” TFI offers information materials related to security issues on the Web at <www.tfi.org>. These materials may be helpful for small to medium operations.

- Security Code of Management Practices – The security code “will assist the industry in keeping fertilizers safe from terrorist activity... [It] recommends use of a risk-based approach to identify, assess and address security vulnerabilities.”
- Guidelines to Help Ensure a Secure Agribusiness – A product of the Agricultural Retailers Association (ARA), CropLife America, and TFI.
- “America’s Security Begins with You” is an awareness campaign produced by TFI which is endorsed by the Department of Homeland Security and the Bureau of Alcohol, Tobacco and Firearms (ATF). The campaign “urges everyone who handles ammonium nitrate to implement security plans, maintain records of all sales of ammonium nitrate and alert law enforcement officials of suspicious activity by utilizing ATF’s toll-free hotline: (800) 800-3855.” The campaign brochure is available at the TFI Web site. Materials can also be located at the ATF Web site <www.atf.treas.gov> under the title “Be Secure for America.”

The National Institute of Justice (a division of the U.S. Department of Justice) has developed a

very thorough and formal program titled "Method to Assess the Vulnerability of U.S. Chemical Facilities." The twelve-step assessment tool was developed by the National Institute of Justice in partnership with the Department of Energy's Sandia National Laboratories. Locate this publication at the National Criminal Justice Service Web site <www.ncjrs.org>. Follow the "Publications (alpha list)" link and find "Method to Assess the Vulnerability of U.S. Chemical Facilities." These materials are likely to be helpful to larger operations.

Homeland Security and Fertilizers — Pre-test

This pre-test is intended to gauge your level of knowledge before participating in the *Homeland Security and Fertilizers* training. Please answer all the following questions to the best of your ability.

1. The two main types of fertilizer are _____ and _____ .

2. Two potentially dangerous chemicals found in Synthetic Fertilizers are _____ and _____ .

3. What are three factors that make a person seem suspicious?

4. Name three ways you can maximize security as it pertains to fertilizers.

5. Who do you report fertilizer theft to?

Homeland Security and Fertilizers — Post-test

This post-test is intended to gauge your level of knowledge after participating in the *Homeland Security and Fertilizers* training. Please answer all the following questions to the best of your ability.

1. The two main types of fertilizer are _____ and _____ .

2. Two potentially dangerous chemicals found in Synthetic Fertilizers are _____ and _____ .

3. What are three factors that make a person seem suspicious?

4. Name three ways you can maximize security as it pertains to fertilizers.

5. Who do you report fertilizer theft to?

Homeland Security and Fertilizers — Answer Key

1. The two main types of fertilizer are organic and synthetic.
2. Two potentially dangerous chemicals found in Synthetic Fertilizers are Ammonium Nitrate and Potassium Nitrate.
3. What are three factors that make a person seem suspicious?
 - People who try to buy large amounts of a fertilizer and are not affiliated with a business
 - People who demand immediate possession of purchased material instead of future delivery
 - Body language
 - Nervousness
 - Lack of eye contact
 - Lack of knowledge about what they are buying
 - Frequency of visits — the person has never been there before but they are making a large purchase
 - Asks for material in smaller, individual containers rather than in bulk
 - Insists on paying with cash instead of using credit or check
4. Name three ways you can maximize security as it pertains to fertilizers.
 - Provide secure storage for fertilizers.
 - Keep all ammonium nitrate fertilizers securely stored.
 - Store away from pesticides.
 - Secure rail, truck, and barge containers with cable seal locks when stored at your location.
 - Maintain a current inventory of ammonium nitrate fertilizer and be able to account for its sale, distribution, and use.
5. Who do you report fertilizer theft to?
 - Report any thefts of fertilizer and/or equipment along with suspicious activity to your local law enforcement agency.
 - In Florida, contact the FDACS Agricultural Law Enforcement Office at 1-800-342-5869. (Varies by state.)

Participant’s Evaluation of *Homeland Security and Fertilizers*

Please circle the number that best expresses your opinions for each of the following statements. Circle only one number per question for questions 1 through 4.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. The training unit’s format was easy to follow.	1	2	3	4	5
2. The information presented is useful to me.	1	2	3	4	5
3. The time it took to complete the training session was acceptable.	1	2	3	4	5
4. As a result of this session, I understand better how to work with fertilizers.	1	2	3	4	5
5. We welcome your comments about this program:					

Please use the back of this sheet for any further comments.

Thank you for your time!

Table-Top Discussion — Luke's First Sale

Participants should use the following information in small groups to apply what they have just learned and to brainstorm their responses to this scenario. After the groups have worked separately, it may be useful to bring them back together and have a reporter from each group describe how their group responded to the discussion questions.

Scenario:

Note: "Luke's First Sale" is a work of fiction.

Characters in this story are fictional and not intended to represent any real person.

It had been raining all week. Normally, Thursday morning would be slow at Lundgren's Agricultural Supply, but with the rain, this particular Thursday was dead. The owner, Kristen, had some errands to run, and she thought maybe this would be a good time. She could leave Luke in charge for a couple of hours.

Luke had one more year of high school, and Kristen had taken him on for the summer to help out around the warehouse. Luke had only been working there for a few weeks, but he could ring a sale, and Kristen felt that probably there wouldn't be any business at all this morning.

"Luke," she said, "I'm going into town for a couple of hours. Go by the bank, run a couple errands... I can bring back some lunch. What would you like?" Kristen and Luke talked over lunch ideas.

Kristen asked, "Luke, do you feel comfortable being here on your own for a little while? It's pretty slow, but if someone comes in, I think you could take care of them."

Luke agreed. In fact, he was a little proud to be on his own. Yeah, he'd be running the place. He'd be manager for a couple of hours. He also thought chances were good that no one would come in.

"See ya, Luke. Should be back around 12, 12:30," Kristen shouted back as she left the store. It was around 10:30.

With Kristen gone, Luke felt the emptiness of the place. He turned on the radio and changed it to a favorite station. He got out the broom and started to sweep.

Kristen had been gone about 15 minutes and Luke was singing along with the radio and dancing/sweeping, when a couple of men came through the door. "Morning," one of them said. He had to speak loudly to be heard over the radio and get Luke's attention.

Luke looked up and immediately put down the broom. "Good morning. Can I help you?" he asked.

Luke walked over to the men, dusted his hands off on his coveralls, and reached out to shake their hands. The men seemed puzzled by the friendliness of Luke's gesture, but they shook hands with him.

The taller man answered Luke's question. "Yeah, we're - uh - looking to buy some fertilizer."

Luke moved around behind the counter and turned down the radio. He pulled out a sales form and said, "Well, you've come to the right place." Luke held a pen in writing position, looked up at the men and asked, "All right, now exactly what can I get for you?"

Again, the taller man spoke, "We're looking for about a 1000 pounds of ammonium nitrate, the high nitrate kind."

Luke was happy to tell them, "We've got plenty. Comes in 100-pound sacks. Fifteen dollars a sack. Copeland's the brand. That all right?"

"Oh sure, that sounds good. Got it right here? We got a truck outside, we were hoping to take it with us," the tall man said.

"Sure, we got it. I can bring it up to the front and load it for you or we got free delivery with any order over \$100," Luke said.

The shorter man looked serious and glanced up at the taller man. The tall man spoke, "No, we'll take it with us. It'll save us some time, since we're already here."

"Okay", Luke said.

Luke wrote up the sale and told the men. "All right, then, that will be \$159. Oh sorry, maybe you have a tax number? I added the sales tax in without even asking."

The taller man looked closely at Luke for a second, and said, "No. I don't have a tax number. I mean, I don't have my card." He pulled a thick roll of bills out of his jacket and peeled off 8 \$20 bills. He handed them to Luke.

Luke counted them, "20-40-60-80-100-120-140-160. All right. Uh, if you find that tax card, just bring it by and Ms Lundgren will probably give you a

refund." Luke rang up the sale on the register and tucked the 20s in the drawer and pulled out a one-dollar bill. He handed it to the tall man.

"There you go. Your change is \$1 even," Luke said. He marked the sales form "Paid" and held out the copy. The taller man took it. Luke added, "If you gentlemen want to wait out front, I'll bring your fertilizer around. Are you under the overhang?"

The men nodded yes and went out the front door. Luke went out the side. He drove the small pickup they used in the yard over to the shed with the fertilizer bags and loaded ten on the truck. He could see the men and their truck. Luke had never seen the men before. He drove over to them with the bags.

The men were driving a white van that looked brand new. They opened the back door. Luke stepped over to unload the bags, but they insisted on loading it themselves. Luke couldn't see in the back of the van clearly, but there seemed to be another person inside.

"Shame to load these dirty old bags of fertilizer in this nice van," Luke offered.

The men did not reply. They loaded the bags as quickly as possible.

"You guys just startin' up?" Luke asked.

The tall man glanced over at Luke for a second and said, "No. We've been buying from Kristen for years."

The bags were loaded.

Luke asked, "So what do you guys grow?" Luke could see that they were in a hurry now.

The taller man said, "Ferns." The other man was already in the van starting the engine. The tall man hopped in and they drove away.

Luke watched them leave and then went back into the store. He turned up the radio again and looked at the clock. 11:30. He complained to the empty store, "An hour til lunch! Dang!"

It was quarter of one when Kristen finally got back. She would have been back early but there was a collision on the main highway that had slowed

everything down.

Kristen handed Luke a sub sandwich and an extra large iced tea. Luke was hungry. He unwrapped his sandwich with one motion and took a bite.

Everything was just as Kristen had left it, but she asked, "Anything happen while I was gone?"

"Nah, not much. Did some sweeping. Some guys bought some fertilizer." Luke spoke casually through his munching, portraying that whatever had happened, it was just part of his normal day.

"Made your first solo sale, huh? Pretty good. Maybe I ought to leave you alone more often. Sales might pick up."

After lunch, Kristen looked over the sales form. "This your fertilizer sale this morning?"

Luke looked over. "Yeah."

"No address? No name?" Kristen said.

"They paid cash and they took it with them," Luke said.

"Guess that's okay then. Thousand pounds, huh?" Kristen was reassured, and a sale is a sale.

Luke added, "I didn't ask their names but they said they been buying here for a long time."

"Oh yeah? What did they look like?" Kristen asked.

Luke described the two men — a tall one and a short one. Well dressed. Driving a new white van. Kristen did not recognize the men from Luke's description.

"Did they say anything about their operation? Like what they grow?" Kristen knew that the crop would narrow it down quickly.

"Ferns is what they said," Luke answered.

"Ferns? And 1000 pounds of ammonium nitrate." Kristen thought for a minute. "There's something not right about this, Luke." Kristen paused. "I

think we better call the sheriff.”

“Oh man. Ms Lundgren, did I do something wrong? I mean, maybe I shouldn’t have sold them the fertilizer,” Luke said.

“I don’t know. It’s probably nothing.” Kristen reassured Luke, but she felt very suspicious. Luke’s description of the men, their clothes, the new white van. It was obvious they were not producing ferns, not with straight ammonium nitrate. Kristen just wasn’t sure. Could be legitimate, except that she did not have any customers that grew ornamentals. The fact that they told Luke they had been customers for years just didn’t square. And who picks up that much fertilizer in a van?

Kristen called the sheriff and reported a suspicious purchase of ammonium nitrate fertilizer. Within a half hour, two deputies were at the ag supply operation to ask Kristen and Luke more questions.

**Questions/
Discussion**

1. What factors if any should have made Luke suspicious?
2. What could Luke have done if he had become suspicious of the two men?
3. What should Kristin do since the sale has already been made?
4. How sensitive is your company to the negative publicity that may result from this incident?
5. How aware are your employees of the potential security risks with the products your business handles?
6. Has your company done any training or drills to handle a security risk type of situation?
7. How would Kristen have handled the sale, if she had been there, as an adult and as the owner of the business?
8. Why is it important to know the company’s clientele?
9. What are the possible outcomes of this situation?
10. What additional items need to be considered – for security and liability purposes?

**Points for
Discussion**

1. What factors if any should have made Luke suspicious?

From the scenario, we don’t know what training Luke has had for this situation. Based on the advice in this lesson,

- Luke should have been suspicious when the buyers displayed poor product knowledge. Luke was so eager to help the men that he filled in all the blanks for them. He missed an opportunity to find out if they knew much about what they were looking for.
- The buyers are eager to take the materials with them and they want to pay cash.
- When the men were loading the fertilizer into the van, they said they had been customers of Kristin's for many years, but they had been very aloof throughout their transaction, not at all like long-time customers.

2. What could Luke have done if he had become suspicious of the two men?

- Luke could have taken more opportunities to get information from the men, such as asking them more questions, attempting to take a name and address on the sale form, or even getting a signature.
- If Luke had been very suspicious of these men, he could have found a way to refuse to sell to them, either by indicating that they were out of stock on this particular product, that he could not make any sales and that the owner would be back shortly, or perhaps that he could not make a sale without a name, address and identification.
- Luke could contact authorities on his own, though under the circumstances, he probably would have discussed doing so with the owner first.

3. What should Kristin do since the sale has already been made?

The fact that the buyers had claimed to be long-time customers, but Kristin did not recognize their description or operation should have made Kristin immediately suspicious. The fact that they identified themselves to Luke as long-time customers indicates that they probably thought Luke would not know if they were or not. In turn, that suggests that they had been watching Lundgren's and waited for Kristin to leave before attempting to make a purchase from someone they knew to be a new employee.

- Kristin's only real option is to contact authorities and report the incident, but the experience should show her that he and Luke need some training or information about how best to handle situations like this in the future.

4. How sensitive is your company to the negative publicity that may result from this incident?

Fear of negative publicity – or any publicity at all – can cause business people to be less than forthcoming with the police or the press. It is important not to let such fears compromise reporting the truth to the police and a confrontation with the local press that arises from fear or resentment is likely to cause more interest rather than reduce it. It is unlikely that any seriously negative publicity would result from this sale unless the business already had a negative reputation in the community.

5. How aware are your employees of the potential security risks with the products your business handles?

It is important that employees be aware that there is a small but definite possibility that someone might try to purchase products for the wrong reasons. It is equally important that employees receive good information about detecting suspicious behavior. Arousing people's suspicions based on their preconceived notions and prejudices may cause more problems than it solves.

6. Has your company done any training or drills to handle a security risk type of situation?

Some employers may feel that training sessions or drills are excessive, and distributing printed materials may be most appropriate in most situations. Nevertheless, bringing in law enforcement for a discussion of security issues may be more helpful for most employees and make the point about security more effectively than printed materials alone.

Also, the real issue here is: What are the security, safety and preparedness attitudes of management and workers in a business or other operation? It is important that management have a plan for each of these areas and that workers adopt appropriate practices.

7. Assume that this sale leads to a bombing. Discuss how such an event might affect Luke? Kristen? How would you feel about Lundgren's, if you were their customer?
8. What additional items need to be considered for security and liability purposes?

Recognizing Suspicious Behavior

Look for these signs that something may be amiss:

- Stranger — *The individual is unfamiliar to the area or to you.*
- Doesn't know much about farming/fertilizer — *The individual doesn't answer questions about acreage, crops, soil composition, etc. in a specific, knowledgeable way.*
- Insistent about ammonium nitrate — *The individual will not consider other products you recommend. Is only interested in ammonium nitrate.*
- Doesn't want product delivered — *The customer insists on taking product now, and possibly asks for it in bags, not bulk.*
- Hesitates/hedges when asked for information — *The individual is reluctant or refuses to give name, address, signature, photo ID, etc.*
- Acts nervous — *The individual avoids eye contact, and may seem jittery, uneasy, vague.*
- Pays in cash — *The individual won't write a check or use credit, and possibly, has no credit account with your or other ag businesses in the area.*

If someone seems out of place, jot down some notes on a piece of paper:


- Note their physical appearance.
- Note the make, model, and color of their vehicle.
- Note the license plate number.
- Save any paper on which they may have written a name or address; minimize handling to help preserve it for fingerprints.


(from South Dakota Cooperative Extension Service)

PowerPoint Slides 1-3

Agrochemicals and Security

Homeland Security and Fertilizers




 Agrochemicals and Security: Homeland Security and Fertilizers Fert-01

Learning Objectives


As a result of this session, participants will:

- ▶ Be aware that agricultural fertilizers can be used to make explosive mixtures.
- ▶ Understand behaviors that may indicate suspicious activity.
- ▶ Understand that specific security measures can prevent unlawful access to fertilizers.

 Agrochemicals and Security: Homeland Security and Fertilizers Fert-02

What is a fertilizer?

- ▶ A fertilizer is defined as a material that primarily adds nutrients to the soil.
- ▶ There are two main types of fertilizers: Organic and Synthetic. Organic fertilizers contain only organic materials while synthetic fertilizers contain chemicals, which are more efficiently used by plants.
- ▶ Most large-scale crop producers use synthetic fertilizers to increase their economic gain by more efficiently supplying their crops with the nutrients they need.

 Agrochemicals and Security: Homeland Security and Fertilizers Fert-03

PowerPoint Slides 4-6

What are fertilizers made of?

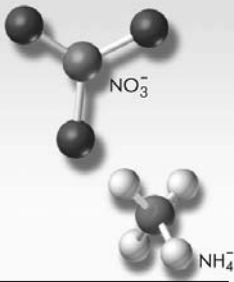
There are three main chemicals used in the production of synthetic fertilizers:


- ▶ Ammonium Nitrate
- ▶ Potassium Nitrate
- ▶ Urea

 Agrochemicals and Security: Homeland Security and Fertilizers Fert-04

Ammonium Nitrate – NH_4NO_3

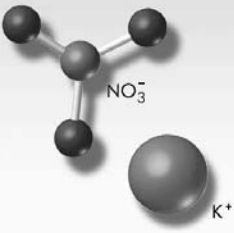
- ▶ Colorless, crystalline salt of ammonia and nitric acid
- ▶ Strong oxidant that reacts with combustible and reducing material
- ▶ Contains 34% nitrogen, all of which is usable by plants
- ▶ The most common nitrogenous component of fertilizers




 Agrochemicals and Security: Homeland Security and Fertilizers Fert-05

Potassium Nitrate – KNO_3

- ▶ Colorless, crystalline salt
- ▶ Strong oxidizer that promotes explosive reaction with organic materials
- ▶ Decomposes when heated, releasing nitrogen
- ▶ Main uses are gunpowder, explosives, fireworks, matches, and fertilizers




 Agrochemicals and Security: Homeland Security and Fertilizers Fert-06

PowerPoint Slides 7-9

Urea - CO(NH₂)₂

- ▶ Colorless, crystalline compound
- ▶ Strong oxidizer promotes explosive reaction with organic materials
- ▶ Decomposes to produce carbon dioxide and ammonia
- ▶ Many uses, including fertilizers, plastics, drugs and cosmetics



Urea
CO(NH₂)₂

Agrochemicals and Security: Homeland Security and Fertilizers Fert-07

Why do terrorists want fertilizers?

Synthetic fertilizers can be the basis of powerful explosives.

Compared to electronic bombs, fertilizer bombs are:

- Cheaper to produce
- Materials are more accessible
- Easier to produce
- Simpler and more reliable



Agrochemicals and Security: Homeland Security and Fertilizers Fert-08

Terrorists seek and use fertilizer bombs world-wide...


1993 Feb 26	World Trade Center, New York, New York
1993 Apr 24	NatWest Bank, London, England
1995 Apr 19	Murrah Federal Office Building, Oklahoma City
1996 Apr 12	Canary Wharf, London, England
1996 Jun 25	Khobar Towers, Dhahran, Saudi Arabia
1998 Aug 7	US Embassy, Nairobi, Kenya
1998 Aug 7	US Embassy, Dar es Salaam, Tanzania
2000 Oct 12	Café District, Bali, Indonesia
2001 Dec	Singapore. 4000 lbs NH ₄ NO ₃ seized.
2003 Nov	Istanbul Turkey. Four bombings.
2004 Mar 15	US consulate, Karachi, Pakistan. Bomb defused.
2004 Apr 2	Thailand. 3300 lbs NH ₄ NO ₃ stolen by insurgents.
2004 May 5	Honfleur, France. 1100 lbs NH ₄ NO ₃ stolen.
2004 Jul 16	London, England. 1000 lbs of NH ₄ NO ₃ seized.

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PowerPoint Slides 10-12


Improving Security

- ▶ Storage
- ▶ Transportation
- ▶ Personnel
- ▶ Disposal
- ▶ Response

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Security: Storage

How easy would it be for fertilizer to “disappear” from your facility?

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Security: Storage


- ▶ Maintain inventories so that you always know the exact quantities of fertilizer you have.
- ▶ Use logbooks to keep track of who removes fertilizers from your facility.
- ▶ Store fertilizers in a building which can be locked or in a fenced enclosure with a locked gate.
- ▶ If appropriate, provide a second security perimeter, such as a fence with a locked gate surrounding your storage facility.

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PowerPoint Slides 13-15


Security: Storage

- ▶ Perform a walk-through and walk-around daily to check for attempted entry, vandalism, and structural integrity.
- ▶ Provide good lighting on all sides of your storage facility.
- ▶ For some facilities, install security systems, such as alarms and camera systems, and make sure they are properly maintained.

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Security: Transportation

Is transportation the weak link in your security?

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Security: Transportation


- ▶ Create a paper-trail for any fertilizer you ship.
- ▶ Ship fertilizer in a locked vehicle.
- ▶ Go directly to delivery point when possible, taking the best route available to avoid high population areas, tunnels, and bridges.
- ▶ Exercise extreme caution if it becomes essential to stop. Avoid unguarded and unlighted areas where theft is a substantial risk and be on your way as soon as possible.
- ▶ Be alert to vehicles following your truck, strangers asking questions, or anyone snooping around your cargo.

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PowerPoint Slides 16-18

Security: Transportation

- ▶ Do not pick up hitchhikers, do not talk about your cargo on CB radio, and do not discuss your cargo with those not involved.
- ▶ Always telephone your customer if you find you will be late for a delivery.
- ▶ Check your load at delivery to ensure no product is missing. Do not leave product at field site unless it is well attended or secured within buildings. Always obtain a signed delivery ticket.
- ▶ Carefully check background of all new drivers. Every driver should be properly licensed and trained in good practices for handling fertilizer and pesticide chemicals that may be hazardous in the hands of dangerous people.



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Security: Personnel


Do you know your employees?
Do you know who has access?



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Security: Personnel

- ▶ Develop effective hiring and labor relations policies.
- ▶ Consider background checks for current/new employees, particularly if the person handles hazardous materials.
- ▶ Consider fingerprinting and photographing employees who handle hazardous materials.
- ▶ Be aware of personal identity theft, such as stolen Social Security Numbers, references, etc.
- ▶ Request employees to watch for suspicious activities and ask persons they don't recognize to identify themselves and state their reason for being on the premises.




Agrochemicals and Security: Homeland Security and Fertilizers Fert-18

PowerPoint Slides 19-21

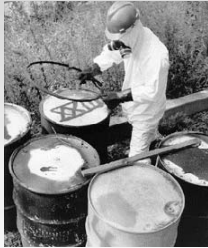
Security: Personnel

- ▶ Adopt a company security whistleblower protection policy.
- ▶ Know who has keys and access to hazardous material storage areas.
- ▶ Retrieve keys and employment identification cards from an employee and change computer access passwords when their employment ends.
- ▶ Assess a worker's violence potential and take appropriate security precautions when terminating or disciplining an employee.


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Security: Disposal

Do you have a plan for safe and secure disposal?




Hazmat worker inspects aging chemical drums abandoned in a field.

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Security: Disposal

- ▶ Maintain security over material which is being disposed of until it is claimed by appropriate authorities.
- ▶ Arrange for prompt and safe disposal of materials.

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PowerPoint Slides 22-24

Security: Response

Do you have a formal response plan?


Do your employees know it?



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Security: Response

- ▶ Develop an emergency plan for your facility. Train your workers in the plan and rehearse it with them.
- ▶ Post emergency response numbers, including fire, law enforcement, medical contacts, and poison control in several locations in your facility. Make all employees aware of these response numbers.
- ▶ Report to appropriate authorities any suspicious activities, vehicles, persons, threats to personnel or facilities, sabotage/vandalism to facilities or equipment, and thefts, inventory shortages, or missing products that could pose a risk to public health or safety.




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Identifying Suspicious Behavior

Watch for unusual or suspicious behavior by a purchaser who:

- Seems unfamiliar with details of using fertilizers
- Acts nervous, seems uneasy or vague, and avoid eye contact
- Demands immediate possession of purchased material instead of future delivery
- Asks for material in smaller individual containers rather than in bulk
- Insists on paying in cash instead of using a check or credit card



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PowerPoint Slides 25-27

If someone is acting suspicious...

- ▶ Notify your manager.
- ▶ Notify local law enforcement.
- ▶ In Florida, call FDACS Agricultural Law Enforcement at 1-800-342-5869.



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Summary

- ▶ There are three major solid forms of nitrogen fertilizer: ammonium nitrate, potassium nitrate and urea.
- ▶ These products can be used to create simple and powerful explosives.

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Summary

Examine storage and handling procedures and develop a security plan.


- ▶ Storage
- ▶ Transportation
- ▶ Personnel
- ▶ Disposal
- ▶ Response

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PowerPoint Slides 28-30


Summary

- ▶ Watch for unusual or suspicious behavior by purchasers.
- ▶ Contact your manager or local law enforcement to report suspicious persons.

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Questions and Discussion


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**Agrochemicals and Security:
Homeland Security and Fertilizers**

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