



Observing Preharvest Intervals: Why It Is So Important

Editor's note: What follows is a series of news releases from the Kansas State Department of Agriculture regarding embargoing winter wheat that allegedly was harvested before the preharvest interval had passed on several popular foliar fungicides. In the end, no illegal residues were found and all the wheat was allowed to be marketed, but nonetheless, it was a near-run thing. Also, as a bonus, Marcia McMullen, NDSU Extension plant pathologist, in response, cautioned our industry about this in early August.

KSDA Embargoes Wheat as Precautionary Measure

July 24 - Topeka - The Kansas Department of Agriculture announced today that wheat at three elevators and in 20 fields covering 1,545 acres in south-central Kansas is under embargo until tests confirm that pesticide residues meet tolerances set by the U.S. Environmental Protection Agency and U.S. Food and Drug Administration.

"This is entirely precautionary to protect the integrity of Kansas wheat," said Secretary of Agriculture Adrian Polansky. "We chose this course to minimize economic harm to Kansas farmers while we verify that residue levels are what they need to be."

The Kansas Department of Health and Environment issued the first embargoes for wheat fields in Butler, Cowley, Harper, Kingman, Reno, Sedgwick and Sumner counties late yesterday at the request of the Department of Agriculture. KDHE has authority under state law to prevent from entering the food supply any item that is considered adulterated.

The Department of Agriculture said the embargo was necessary because harvest was getting under way in south-central Kansas.

When the Department of Agriculture learned that wheat from three fields

covering less than 300 acres was harvested yesterday before the embargoes could be delivered last night, they tracked it to three elevators: Scouler Grain in Wellington, the Farmers Co-op Elevator Co. in Garden Plain and ADM in Hutchinson. KDHE issued embargoes for those facilities today to keep the grain from moving or being commingled with other grain until it can be tested.

At question are late applications of Quilt, a fungicide that requires a 45-day waiting period between application and harvest. Its active ingredients have a low toxicity in humans. However, residue from Quilt's active ingredients must not exceed limits established by EPA and FDA.

Quilt applications were made to the embargoed fields between May 13 and May 21, meaning the 45-day

continued on page 4

In this issue . . .

Observing Preharvest Intervals: Why It Is So Important	1
Coordinator's Comments	2
Certified Crop Adviser Continuing Education Units Available at Commercial Pesticide Applicator Trainings	3
2008-09 Commercial Pesticide Certification Calendar	6
Training Opportunities for New Applicators/Dealers	8
Assessing Health Risks From Pesticides	8
Training Pre-registration form	10
Non-training Study Materials form	11

Need help with pesticide certification or general pesticide use issues?

Contact:

NDSU Pesticide Training and
 Certification Program
 NDSU Dept. 7060
 205 Walster Hall, P.O. Box 6050
 Fargo, ND 58108-6050 USA

Phone: (701) 231-7180

Fax: (701) 231-5907

E-mail: pesticid@ndsuxext.nodak.edu

Web: www.ndsupesticide.org

Coordinator's Comments

The last six months have been incredibly busy for the folks here at the NDSU Pesticide Training and Certification Program. In April, Mary-Beth Odegaard, one of our administrative secretaries, resigned to take another job. Needless to say, we were short-handed throughout the rest of the spring and summer until we were able to fill the position on Aug.1 with Jayne Aukland. Because of this change, we decided not to publish our July *Pesticide Quarterly* Newsletter. So this edition is being referred to as July-October, Volume 26, Numbers 2-3.

In addition to staffing changes, we also moved our campus office in June from Loftsgard Hall, room 166, to Walster Hall, room 205. Moving was difficult, but to complicate matters, in July, the university and the U.S. Postal Service changed the entire campus's address scheme, so we also had to contend with a new mailing address. Thankfully, mail delivered to our old addresses will be forwarded for about a year, so nothing should get lost, but it may be delayed in getting to us. Our telephone, fax, Web address and e-mail remain the same, but please note our mailing address changes listed below:

NDSU Pesticide Training and Certification Program
NDSU Dept. 7060
205 Walster Hall, P.O. Box 6050
Fargo, ND 58108-6050 USA
Telephone: (701) 231-7180
Fax: (701) 231-5907
E-mail: pesticid@ndsuxext.nodak.edu
Web address: www.ndsupesticide.org

On other matters, this summer, four major pesticide issues came to the forefront and we still are trying to come to grips with the impacts.

First, we had several human exposure incidents across the state. They varied in severity, but at least one person was hospitalized because of exposure

to chlorpyrophos insecticide. At this time, we're uncertain how this will play out, but the number and seriousness of these incidents mean that we will have to take a look at them and come up with some solutions to avoid them in the future.

Second, we are seeing an increasing number of out-of-state applicators doing business in North Dakota. This trend started about three or four years ago. At the time of this writing, approximately 6 percent of our commercial/public applicators and dealers have been issued a reciprocity certificate based on training and certification conducted by another state. While this number may not seem large, it is huge when we look at aerial applicators. About one in three planes in the sky are operated by people who are not home-grown pilots. North Dakota is not alone in this trend. At meetings this past August, regulators from Iowa and Illinois indicated that 60 percent of the planes flying in their states are reciprocity-certified applicators. Clearly the application industry is changing as applicators become more mobile. The challenge then will be to find the resources and the approach necessary to getting them properly certified and in compliance with local laws and customs so that major pesticide incidents can be avoided.

Three, during the summer, the Environmental Protection Agency grappled with the issue of "label specific" manufacturer- or registrant-delivered product stewardship trainings. Essentially, to use a particular pesticide, an applicator would not only have to meet current certification requirements, but also would need to complete special training requirements provided by the manufacturer or registrant before

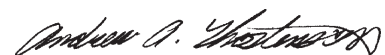
he or she legally could use the manufacturer or registrant's product. (This system was proposed as a risk mitigation measure for Dow Agro Sciences' picloram-based herbicides.) This approach, for now, has been put on the shelf, but it still is being seriously explored and is being proposed as a risk mitigation measure for many soil fumigants. If you want to read more about this issue, go to the American Association of Pesticide Safety Educators Web site at:

<http://aapse.ext.vt.edu/publications.html>

Look up the position paper titled "AAPSE Position on Issue of Registrant Sponsored, Product-specific Training - letter to EPA OPP Director Edwards - July 28, 2009."

Finally, the 2009 North Dakota Legislature will be in session in January and legislators no doubt will be taking up several proposed changes to the North Dakota Century Code relating to pesticide registration, sales and use. At the Sept. 12 meeting of the North Dakota Pesticide Control Board, the North Dakota Department of Agriculture indicated it will be asking for specific changes to bring our laws into alignment with federal rules on pesticide containers and containment. In addition, the department will be asking for continuing support for its newly created "Endangered Species" program and also likely will ask for clarification on various definitions to the North Dakota Pesticide Act. At the time of this writing, very few specifics are available, but we will try to keep you apprised of them in future issues of *Pesticide Quarterly* and at our trainings this winter. So stay tuned.

All the best,



Andrew A. Thostenson
NDSU Extension Pesticide Program
Specialist

Certified Crop Adviser Continuing Education Units Available at Commercial Pesticide Applicator Trainings

The NDSU Extension Service Pesticide Program is offering certified crop advisers the opportunity to obtain their continuing education units (CEUs) at selected commercial agricultural pest recertification training sessions. (At the time of this writing, credits have been applied for with the North Dakota Certified Crop Advisors Board – actual categories are yet to be assigned.)

Please note that you must attend 100 percent of the training to receive CEU credits. No exceptions allowed!

Fees for attending a session are as follows:

- \$ 5 per credit for crop advisers who also are attending for commercial pesticide recertification
- \$10 per credit for crop advisers who are attending for CEUs only

Please preregister 10 days before a training to ensure adequate space at each location.

Call the NDSU Extension Pesticide Program with any questions at (701) 231-7180 or (701) 231-6388.



Date	Time and Location
Dec. 2, 2008; <i>Northern Ag Expo</i>	Registration 7:30 a.m., Training 8 a.m.-5 p.m. Fargo, Fargodome, 1800 N. University Drive
Dec. 16, 2008	Registration 8 a.m., Training 8:30 a.m.-4 p.m. Williston, Research Extension Center, 14120 U.S. Highway 2
Jan. 14, 2009; <i>Jamestown Ag Show</i>	Registration 8 a.m., Training 8:30 a.m.-4 p.m. Jamestown, Civic Center, 212 3rd Ave. S.W.
Jan. 22, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m. Dickinson, Days Inn/Dakota Lodge 532 15th St. S.W.
Feb. 4, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m. Langdon, Research Extension Center, 9280 107th Ave. N.E.
Feb. 4, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m. Linton, Emmons County Extension, 100 4th St. N.W.
Feb. 4, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m. Mohall, Renville County Extension, 205 Main St. E.
Feb. 12, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m. Mandan, Seven Seas Hotel, 2611 Old Red Trail
Feb. 18, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m. Minot, Holiday Inn, 2200 Burdick Expressway E.
March 5, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m. Devils Lake, Knights of Columbus, 522 4th St.
March 11, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m. Crosby, Divide County Extension, 300 2nd Ave. N.
March 11, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m. LaMoure, LaMoure County Courthouse, 202 4th Ave. N.E.
March 11, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m. Fessenden, Wells County Extension, 600 Railway St. N.
March 11, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m. Wahpeton, Richland County Courthouse, 418 2nd Ave. N.
March 11, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m. Watford City, McKenzie County Courthouse, 201 5th St. N.W.
March 26, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m. Fargo, Holiday Inn, 3803 13th Ave. S.

Certified Crop Adviser – CEU Preregistration 2008-09

Include Fee

(Please print)

Name _____

Phone _____

Address _____

City _____

State _____ ZIP _____

I will attend the following workshop –

Date ___/___/___ City _____

Fee

Attending for CEUs only?

6 credits x 10 Total \$ _____

Attending for pesticide certification also?

6 credits x 5 Total \$ _____

Make checks payable to:
NDSU Extension Pesticide Program

(If paying by personal check, the state of North Dakota requires your birth date on the check.)

Return to:

NDSU Extension Pesticide Program
NDSU Dept 7060, P.O. Box 6050
Fargo, North Dakota 58108-6050 USA

Observing Preharvest Intervals

continued from page 1

waiting period expires between June 27 and July 5. If the wheat plants were at the appropriate stage of development when Quilt was applied, then residues are likely within the established tolerances.

The Kansas Department of Agriculture collected field samples to test for residue, and results could be available as early as tomorrow. Samples also have been collected from fields in northwest Kansas, where Quilt applications were documented as late as the first week of June.

The department is also looking at late Quilt applications on 5,999 acres in eight more counties: Ellis, Gove, Jefferson, Logan, Rawlins, Sheridan, Thomas and Trego.

"We've been consulting with EPA and FDA, and I feel confident we're doing the right thing," Polansky said. "As the nation's leading wheat producing state, it's important we do what we can to protect the reputation and integrity of our wheat supply."

KSDA: No Detectible Traces of Fungicide on South-central Kansas Wheat

July 25 - Topeka - Kansas Secretary of Agriculture Adrian Polansky announced today that embargoes on 20 wheat fields and three grain elevators in south-central Kansas will be lifted based on test results that show no detectible traces of fungicide residue on wheat.

"This is good news for the affected farmers and for the Kansas wheat industry," Polansky said.

The Kansas Department of Health and Environment had issued

embargoes for wheat fields in Butler, Cowley, Harper, Kingman, Reno, Sedgwick and Sumner counties late Monday at the request of the Kansas Department of Agriculture. KDHE later embargoed wheat at three elevators after Department of Agriculture employees traced grain to them from three fields that were harvested before the embargoes could be delivered.

In question are late applications of Quilt, a fungicide that requires a 45-day waiting period between application and harvest. Its active ingredients have a low toxicity in humans. However, residue from Quilt's active ingredients must not exceed limits established by the U.S. Environmental Protection Agency and the U.S. Food and Drug Administration.

Quilt applications were made on the embargoed fields between May 13 and 21, meaning the 45-day waiting period expires between June 27 and July 5.

"These test results are an indication of how effective the waiting period is to ensure that chemical residues are at acceptable levels at harvest," Polansky said. "I expect we will find similar results from samples we collected in other parts of the state."

The Department of Agriculture is now testing samples from several northern counties, and results from some of those tests could be available as early as tomorrow afternoon.

The Kansas Department of Health and Environment embargoed those fields late yesterday to keep grain from moving while test results are pending. Affected are 51 fields covering a little more than 5,475 acres in 11 counties that were treated with Quilt as late as the first week of June.

KSDA: Wheat From Northeast, Central Kansas Gets All Clear on Residue Testing

July 26 - Topeka - Kansas Secretary of Agriculture Adrian Polansky announced today that test results from Jefferson and Ellis counties showed no detectible traces of Quilt fungicide residue on wheat, meaning embargoes on farms in those counties will be lifted.

"We have a few more samples from northwest Kansas in the queue to be tested, and I'm hopeful results will be available in a day or two," Polansky said. "In the meantime, embargoes will remain in place in those counties."

Farms with embargoes still in place are in Decatur (two fields, 135 acres), Gove (two fields, 133 acres), Logan (three farms, 465 acres), Phillips (two fields, 237 acres), Rawlins (seven fields, 740 acres), Sheridan (one field, 51 acres), Sherman (11 fields, 1,007 acres), Thomas (11 fields, 1,766 acres) and Trego (1 field, 125 acres).

In question are late applications of Quilt, a fungicide that requires a 45-day waiting period between application and harvest. It has a low toxicity in humans. However, residue from its active ingredients must not exceed limits established by the U.S. Environmental Protection Agency and the U.S. Food and Drug Administration.

The Quilt application that resulted in one field being embargoed in Jefferson County was made May 29, meaning the 45-day waiting period expires July 13. The 10 embargoed fields in Ellis County were treated May 30, so the waiting period ends July 14.

The Kansas Department of Agriculture is not placing any restrictions on harvest outside of regions where

embargoes are in place. However, they remind producers that failing to abide by a preharvest interval violates state and federal law and opens the producer to enforcement action.

KSDA: Test Results Clear Wheat in Northwest Kansas

June 30 - Topeka - Kansas Secretary of Agriculture Adrian Polansky announced today that based on test results from grain samples collected in northwest Kansas, he will ask that embargoes on 40 wheat fields be lifted.

Some of the samples showed no detectible traces of Quilt fungicide residue at all, while others showed levels below the tolerance established by the U.S. Environmental Protection Agency and the U.S. Food and Drug Administration. Fields treated with Bumper, a fungicide similar to Quilt, also tested below federal tolerances.

“Now that the integrity of Kansas wheat is assured, we can focus on gathering facts that will tell us whether the products were applied at the proper stage of plant growth,” Polansky said.

Because the crop matured later than usual due to cool, damp weather, Polansky said it’s possible the timing of the applications was appropriate for the plant’s development but ill-advised given the preharvest intervals for the fungicide products.

Embargoes that will be lifted today are on fields in Decatur, Gove, Logan, Phillips, Rawlins, Sheridan, Thomas and Trego counties. An earlier news release incorrectly indicated fields in Sherman County were embargoed, but those fields were actually in Sheridan County. They were incorrectly identified as being in Sherman County due to a data entry error.

Eleven of those fields were treated with Bumper, a fungicide similar to Quilt that requires a 40-day waiting period between application and harvest.

Early last week the Kansas Department of Health and Environment issued embargoes for wheat fields in several counties throughout the state at the request of the Kansas Department of Agriculture. KDHE also embargoed wheat at three elevators after Department of Agriculture employees traced grain to them from three fields that were harvested before the embargoes could be delivered.

In question were late applications of Quilt and Bumper, fungicides that require a waiting period between application and harvest. Quilt requires 45 days and Bumper 40 days. Their active ingredients have a low toxicity in humans. However, residue on grain must not exceed limits established by the U.S. Environmental Protection Agency and the U.S. Food and Drug Administration.

Embargoes on 20 fields and three elevators in south-central Kansas were lifted last Wednesday when tests showed no detectible traces of Quilt fungicide residue on wheat samples pulled from those fields. Embargoes on two fields in Ellis and Jefferson counties were lifted Thursday when test results again revealed no detectible traces of Quilt’s active ingredients.

The Kansas Department of Agriculture currently is not placing any restrictions on harvest. However, they remind producers that failing to abide by a preharvest interval violates state and federal law and opens the producer to enforcement action.

NDSU Extension Plant Pathologist Cautions N.D. Small-grain Industry About Fungicide Preharvest Intervals

A recent temporary embargo of some Kansas wheat occurred because the fields had been treated with Quilt fungicide beyond the appropriate preharvest interval (PHI) for that product (45 days). Products recommended by NDSU for heading or flowering application for Fusarium head blight suppression all have a 30-day PHI in wheat (32 days for Proline in barley), a duration that should allow ample time in North Dakota for maturity before swathing or harvest.

Producers and applicators need to take heed of the PHI because what happened in Kansas is a very strong reminder that labels are the law and must be followed.

The following preharvest intervals are indicated on our registered small-grain fungicides:

Product	PHI
Headline*	Unspecified
Feekes 10.5	-40 days
Quadris	45 days
Caramba	30 days
Folicur**	30 days
Proline	30 days wheat, 32 days barley
Tilt**	40 days
Quilt	45 days
Stratego	35 days

* Headline is the only product that doesn’t specify number of days in its PHI. Feekes 10.5 is approximately 40 days before harvest in North Dakota, depending on air temperatures. Hot temperatures push the crop to flowering; Feekes 10.51, more quickly.

** Additional tebuconazoles class fungicides such as Orius, etc., or additional propiconazoles class fungicides, such as Propimax, etc., have North Dakota state supplemental labels that specify the same PHI as the original registered products.

2008-09 Commercial Pesticide Certification Calendar

Here are schedules you can use for planning your training needs during the next several months. These recertification trainings are structured to give certified commercial/public applicators/dealers the information necessary to maintain or renew their certificates in the appropriate categories.

Preregistration is required for all trainings because of material and space limitations. If you do not preregister, you have no guarantee you will get seated at the training.

A *Training Preregistration* form is published in this newsletter. Electronic forms for downloading and printing also are available at <http://ndsupesticide.org>.

Home-study course recertification is available for those categories that are not on the training calendar or for the following minor categories: home industrial and institutional, metam-sodium, public health, vertebrate and wood preservation. Request your materials for these courses with the *Nontraining Study Materials* request also printed in this newsletter.

■ Ground and Aerial for AgPest, Right-of-Way, Seed Treatment, and Research and Demonstration Recertification

Date	Time	Location
Dec. 2, 2008; <i>Northern Ag Expo</i>	Registration 7:30 a.m., Training 8 a.m.-5 p.m.	Fargo, Fargodome, 1800 N. University Drive
Dec. 16, 2008	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Williston, Research Extension Center, 14120 U.S. Highway 2
Jan. 14, 2009; <i>Jamestown Ag Show</i>	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Jamestown, Civic Center, 212 3rd Ave. S.W.
Jan. 22, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Dickinson, Days Inn/Dakota Lodge 532 15th St. S.W.
Feb. 4, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Langdon, Research Extension Center, 9280 107th Ave. N.E.
Feb. 4, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Linton, Emmons County Extension, 100 4th St. N.W.
Feb. 4, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Mohall, Renville County Extension, 205 Main St. E.
Feb.12, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Mandan, Seven Seas Hotel, 2611 Old Red Trail
Feb. 18, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Minot, Holiday Inn, 2200 Burdick Expressway E.
March 5, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Devils Lake, Knights of Columbus, 522 4th St.
March 11, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Crosby, Divide County Extension, 300 2nd Ave. N.
March 11, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	LaMoure, LaMoure County Courthouse, 202 4th Ave. N.E.
March 11, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Fessenden, Wells County Extension, 600 Railway St. N.
March 11, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Wahpeton, Richland County Courthouse, 418 2nd Ave. N.
March 11, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Watford City, McKenzie County Courthouse, 201 5th St. N.W.
March 26, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Fargo, Holiday Inn, 3803 13th Ave. S.

■ Tri-State Aerial Applicator Convention - Aerial Applicators Only for AgPest, Right-of-Way, Seed Treatment, and Research and Demonstration Recertification

Date	Time	Location
Feb. 25-27, 2009	TBA	TBA: Sioux Falls, S.D.

■ Fumigation Recertification

Date	Time	Location
Dec. 9, 2008	Registration 9:30 a.m., Training 10 a.m.-2:30 p.m.	Bismarck, Burleigh County Extension, 3715 Bismarck Expressway E.
Dec. 9, 2008	Registration 9:30 a.m., Training 10 a.m.-2:30 p.m.	Cooperstown, Griggs County Extension, 808 Rollins Ave. S.W.
Dec. 9, 2008	Registration 9:30 a.m., Training 10 a.m.-2:30 p.m.	Devils Lake, Ramsey County Courthouse, 524 4th Ave. N.E. #5
Dec. 9, 2008	Registration 9:30 a.m., Training 10 a.m.-2:30 p.m.	Grand Forks, Grand Forks County Extension, 151 4th St. S., Suite 302
Dec. 9, 2008	Registration 9:30 a.m., Training 10 a.m.-2:30 p.m.	Mohall, Renville County Extension, 205 Main St. E.
Dec. 9, 2008	Registration 9:30 a.m., Training 10 a.m.-2:30 p.m.	Watford City, McKenzie County Extension, 201 5th St. N.W.
March 18, 2009	Registration 9:30 a.m., Training 10 a.m.-2:30 p.m.	Fargo, NDSU, Memorial Union Prairie Rose Room

■ Greenhouse, Ornamental and Turf Recertification

Date	Time	Location
Nov. 3, 2008	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Bismarck, Burleigh County Extension, 3715 Bismarck Expressway E.
Nov. 3, 2008	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Grand Forks, County Extension, 151 4th St. S., Suite 302
Nov. 3, 2008	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Minot, Research Extension Center, 5400 U.S. Highway 83 S.
Jan. 8, 2009	Registration 9 a.m., Training 9:30 a.m.-5 p.m.	Devils Lake, Ramsey County Courthouse, 524 4th Ave.
Jan. 8, 2009	Registration 9 a.m., Training 9:30 a.m.-5 p.m. (Central)	Dickinson, Dickinson State University, 220 Klinefelter Hall
Jan. 8, 2009	Registration 9 a.m., Training 9:30 a.m.-5 p.m.	Williams County Courthouse, 205 East Broadway
Jan. 27, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Fargo, Ramada Plaza Suites, 1636 42nd St. S.W.
Feb. 27, 2009; NCTGA Convention	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Fargo, Holiday Inn, 3803 13th Ave. S.

■ Home, Industrial and Institutional Recertification

Date	Time	Location
Nov. 6, 2008	Registration 8 a.m., Training 8:30 a.m.-3 p.m.	Fargo, NDSU, Loftsgard 260

■ Public Health Recertification

Date	Time	Location
May 27, 2009	Registration 9 a.m., Training 9:30 a.m.-4 p.m.	Bismarck, Burleigh County Extension, 3715 Bismarck Expressway E.
May 27, 2009	Registration 9 a.m., Training 9:30 a.m.-4 p.m.	Fargo, Cass County Extension, 1010 2nd Ave. S.
May 27, 2009	Registration 9 a.m., Training 9:30 a.m.-4 p.m.	Grand Forks, County Extension, 51 4th St. S., S302
May 27, 2009	Registration 9 a.m., Training 9:30 a.m.-4 p.m.	Williams County Courthouse, 205 East Broadway

■ Right of Way ONLY Recertification

May 19, 2009; NDWCA Annual Sprayer School	TBA*	TBA* western/eastern North Dakota
May 21, 2009; NDWCA Annual Sprayer School	TBA*	TBA* western/eastern North Dakota

* TBA To Be Announced in a future issue of the *Pesticide Quarterly* newsletter.

Assessing Health Risks From Pesticides

Editor's note: The following article by Phil Nixon, University of Illinois pesticide applicator training coordinator, details how the Environmental Protection Agency determines what risks a pesticide poses to human health. This is an excellent summary of a very long and complicated process.

The federal government, in cooperation with the states, carefully regulates pesticides to ensure that they do not pose unreasonable risks to human health or the environment. As part of that effort, the U.S. Environmental Protection Agency (EPA) requires pesticide producers to provide extensive test data that demonstrate pesticide products can be used without posing harm to human health and the environment. EPA scientists and analysts carefully review these data to determine

whether to register (license) a pesticide product or a use and whether specific restrictions are necessary.

More than 1,055 active ingredients are registered as pesticides, which are formulated into thousands of pesticide products that are available in the marketplace. EPA plays a critical role in evaluating these chemicals prior to registration and in re-evaluating older pesticides already on the market to ensure that they can be used with a reasonable certainty of no harm. The process EPA uses for evaluating the health impacts of a pesticide is called risk assessment.

EPA uses the National Research Council's four-step process for human-health risk assessment:

1. Hazard identification

2. Dose-response assessment
3. Exposure assessment
4. Risk characterization

Step One: Hazard Identification (toxicology)

The first step in the risk-assessment process is to identify potential health effects that may occur from different types of pesticide exposure. EPA considers the full spectrum of a pesticide's potential health effects.

Generally, for human-health risk assessments, many toxicity studies are conducted on animals by pesticide companies in independent laboratories and evaluated for acceptability by EPA scientists. EPA evaluates pesticides for a wide range of adverse effects, from eye and skin irritation to cancer and birth defects in laboratory animals. EPA also may

Training Opportunities for New Applicators/Dealers

"Introductory Basic Core Training"

The training is designed for commercial or public applicators and dealers who are new to pesticide certification in North Dakota. It will cover basic pesticide safety and handling practices, as well as relevant laws and regulations as they pertain to the distribution and use of pesticides. This training is not category specific. It will emphasize practices and procedures that should be useful to all applicators or dealers, whether they are seeking certification in the Agricultural Pest Control category, Wood Preservation category or any of the 10 other use categories found in North Dakota. The training also will describe the certification process and how to prepare and take exams to obtain a pesticide certificate.

New in 2008-09, we will offer this training live in real time via the Internet to any location that can receive a

Windows Media Video Stream at 300 kbps or higher using Windows Media Video Version 9.0 or higher. For practical purposes, people who have a dial-up connection will not be able to view this training.

To test your connection, go to:

www.ag.ndsu.nodak.edu/aginfo/pesticid/myth.htm

If you can view the Richard Zollinger videos, your computer and location will be able to connect to our webcast.

People who wish to participate should call the NDSU Pesticide Training and Certification Program office to preregister at (701) 231-7180 or (701) 231-6388. Please preregister at least 10 days before the training date so we can process training materials and send you your confirmation (this will include the Web location if you are participating in the webcast).

Date	Time	Location
Dec. 5, 2008	Training 8:30 a.m.-4 p.m. CST	Statewide via Internet Video Cast
March 17, 2009	Registration 8 a.m., Training 8:30 a.m.-4 p.m.	Fargo, NDSU Memorial Union, Prairierose Room
April 14, 2009	Training 8:30 a.m.-4 p.m. CDT	Statewide via Internet Video Cast

consult the public literature or other sources of supporting information on any aspect of the chemical.

Step Two: Dose-response Assessment

Paracelsus, the Swiss physician and alchemist, the “father” of modern toxicology (1493–1541), said, “The dose makes the poison.”

In other words, the amount of a substance a person is exposed to is as important as how toxic the chemical might be. For example, small doses of aspirin can be beneficial to people, but at very high doses, this common medicine can be deadly. In some individuals, even at very low doses, aspirin may be deadly.

Dose-response assessment involves considering the dose levels at which adverse effects were observed in test animals and using these dose levels to calculate an equal dose in humans.

Step Three: Exposure Assessment

People can be exposed to pesticides in three ways:

- Inhaling pesticides (inhalation exposure)
- Absorbing pesticides through the skin (dermal exposure)
- Getting pesticides in their mouth or digestive tract (oral exposure)

Depending on the situation, pesticides could enter the body by any one or all of these routes.

Step Four: Risk Characterization

Risk characterization is the final step in assessing human health risks from pesticides. It is the process of combining the hazard, dose-response and exposure assessments to describe the overall risk from a pesticide. It explains the assumptions used in assessing exposure, as well as the uncertainties that are built into the dose-response assessment. The strength of the overall database is considered and broad conclusions are made. EPA’s role is to evaluate

both toxicity and exposure and to determine the risk associated with use of the pesticide.

Simply put:
 $RISK = TOXICITY \times EXPOSURE$

This means that the risk to human health from pesticide exposure depends on both the toxicity of the pesticide and the likelihood of people coming into contact with it. At least some exposure and some toxicity are required to result in a risk. For example, if the pesticide is very poisonous but no people are exposed, there is no risk. Likewise, if there is ample exposure but the chemical is nontoxic, there is no risk. However, usually when pesticides are used, there is some toxicity and exposure, resulting in a potential risk.

EPA recognizes that effects vary between animals of different species and from person to person. To account for this variability, uncertainty factors are built into the risk assessment. These uncertainty factors create an additional margin of safety for protecting people who may be exposed to the pesticides. The Food Quality Protection Act (FQPA) requires EPA to use an extra tenfold safety factor, if necessary, to protect infants and children from effects of the pesticide.

EPA evaluates studies conducted over different periods of time and that measure specific types of effects. These tests are evaluated to screen for potential health effects in infants, children and adults.

Acute testing: Short-term exposure; a single exposure (dose)

- Oral, dermal (skin) and inhalation exposure
- Eye irritation
- Skin irritation
- Skin sensitization
- Neurotoxicity

Subchronic testing: Intermediate exposure; repeated exposure over

a longer period of time (that is, 30 to 90 days)

- Oral, dermal (skin) and inhalation
- Neurotoxicity (nerve system damage)

Chronic toxicity testing: Long-term exposure; repeated exposure lasting for most of the test animal’s lifespan. This is intended to determine the effects of a pesticide after prolonged and repeated exposures.

- Chronic effects (noncancer)
- Carcinogenicity (cancer)

Developmental and reproductive testing: Identify effects in the fetus of an exposed pregnant female (birth defects) and how pesticide exposure affects the ability of a test animal to successfully reproduce.

Mutagenicity testing: Assess a pesticide’s potential to affect the cell’s genetic components.

Hormone disruption: Measure effects for their potential to disrupt the endocrine system. The endocrine system consists of a set of glands and the hormones they produce that help guide the development, growth, reproduction and behavior of animals, including humans.

Risk Management

Once EPA completes the risk-assessment process for a pesticide, this information is used to determine if (when used according to label directions), there is a reasonable certainty that the pesticide will not harm a person’s health.

Using the conclusions of a risk assessment, EPA then can make a more informed decision regarding whether to approve a pesticide chemical or use as proposed, or whether additional protective measures are necessary to limit occupational or nonoccupational exposure to a pesticide. For example, EPA may prohibit a pesticide from

continued on back page

Commercial Pesticide Recertification Pre-registration Form

Training Pre-registration

PERSONAL INFORMATION (please print)
Name
Address P.O. box and street address
Phone
Date of birth
E-mail

EMPLOYER/BUSINESS
Name
Address P.O. box and street address
Phone
Fax
E-mail

Correspondence from the Pesticide Office should go to which of the above addresses? personal employer

N.D. County of Residence _____

N.D. Commercial Pesticide ID _____

Do you work for a government agency? Yes No

Is this certification for research and demonstration purposes? Yes No

Check all that apply on each line: **Core Status** Ground Aerial
Certification Status Applicator Dealer Consultant

Training/Pre-Registration		
Study materials are provided at training. Do not request material for training(s) indicated below.		
▼ Check each category you are training in:	▼ Location of training	▼ Date
<input type="checkbox"/> Ag Pest		
<input type="checkbox"/> Right-of-Way		
<input type="checkbox"/> Seed Treatment		
<input type="checkbox"/> Fumigation		
<input type="checkbox"/> Greenhouse		
<input type="checkbox"/> Ornamental and Turf		
<input type="checkbox"/> Home, Industrial and Institutional		
<input type="checkbox"/> Public Health		
Total training/pre-registration categories _____ X \$10 = \$ _____		
Base fee (one-time charge per training season)		\$55
Total		\$ _____

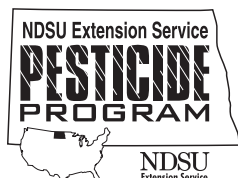
**Method of Payment
(payment must be included)**

Credit Card
 Visa MasterCard Discover
 Credit Card # _____
 Expiration (mo/yr) ____/____
 Cardholder name (print) _____
 3-digit code _____ billing zip code _____

Check/Money Order # _____
 Payable to NDSU Extension Pesticide Program
If paying by personal check, the state of North Dakota requires your birthdate on the check.

Send payment to:
 NDSU Extension Pesticide Program
 NDSU Dept. 7060, P.O. Box 6050
 Fargo, ND 58108-6050

Must be postmarked 10 days prior to training.



**For questions, contact the
 NDSU Extension Pesticide Program Office
 phone (701) 231-7180 or (701) 231-6388; fax (701) 231-5907**

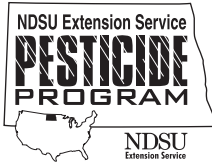
North Dakota State University
Agriculture Communication
NDSU Dept. 7070
P.O. Box 6050
Fargo, ND 58108-6050

Non Profit Org.
U.S. Postage

Paid

Permit No. 818
Fargo, N. Dak.

Address Service Requested



This publication may be copied for noncommercial, educational purposes in its entirety with no changes.

Requests to use any portion of the document (including text, graphics or photos) should be sent to NDSU.permission@ndsu.edu. Include exactly what is requested for use and how it will be used.

being used on certain crops because consuming too much food treated with the pesticide may result in an unacceptable risk to consumers. Another example of protective measures is requiring workers to wear personal protective equipment (PPE), such as a respirator or chemical-resistant gloves, or not allowing workers to enter treated crop fields until a specific period has passed.

If after considering all appropriate risk reduction measures, EPA finds that the pesticide still does not meet the agency's safety standard, it will not allow the proposed chemical or use. Regardless of the specific measures enforced, EPA's primary goal is to ensure that legal uses of the pesticide are protective of human health, especially the health of children, and the environment.

Federal law requires detailed evaluation of pesticides to protect human health and the environment.

In 1996, Congress made significant changes to strengthen pesticide laws through the Food Quality Protection Act. Many of these changes are key elements of the current risk-assessment process. FQPA required that EPA consider:

1. A new safety standard: FQPA strengthened the safety standard that pesticides must meet before being approved for use. EPA must ensure with a reasonable certainty that no harm will result from the legal uses of the pesticide.
2. Exposure from all sources: In evaluating a pesticide, EPA must estimate the combined risk from that pesticide from all nonoccupational sources, such as food sources, drinking water sources and residential sources. Residential sources include pesticide applications in and around the home made by the homeowner or a professional, such as the use of ant baits, wasp sprays, and weed and feed herbicides.
3. Cumulative risk: EPA is required to evaluate pesticides in light of similar toxic effects that different pesticides may share, or "a common mechanism of toxicity." At this time, EPA is developing a methodology for this type of assessment.
4. Special sensitivity of children to pesticides: EPA must ascertain whether there is an increased susceptibility from exposure to the pesticide to infants and children. EPA must build an additional tenfold safety factor into risk assessments to ensure the protection of infants and children unless it is determined that a lesser margin of safety will be safe for infants and children.

For more information, see the EPA fact sheet at: www.epa.gov/pesticides/factsheets/riskassess.htm