

WINTER CEREALS

CANADA 

G R O W E R

Issue No. 31

Spring 2007

1,570,000 ACRES OF WINTER CEREALS PLANTED IN FALL 2006

As this newsletter arrives in mailboxes through out western Canada most of us will have thoughts of spring and the promise of a fresh start foremost in our minds. With spring comes the hard work of cultivation, seeding, fertilization and spraying. At the same time spring brings our sleeping winter cereal crops out of dormancy and into their vigorous early growth.

For many prairie producers there is a great deal of apprehension as they wait for the opportunity to assess the status of their fall seeded crops. While most areas have had plentiful amounts of snowfall there are always areas where crops have been exposed to the rigours of winter due to drifting or lack of snow cover.

For a great number of producers this will be their first experience with fall seeded crops. Statistics Canada reported huge increases in fall seeded crops over the previous few years. Many producers who were unable to grow a spring seeded crop due to excessive moisture chose to "make the Green Choice" and plant winter cereals into their uncropped acreage.

Statistics Canada reported that 1,230,000 acres were seeded to winter wheat in the fall of 2006 in Manitoba, Saskatchewan and Alberta. In addition it was reported that an additional 230,000 acres were seeded to Fall Rye.

Winter wheat acreage was reported at 480,000 acres in Manitoba, 530,000 acres in Saskatchewan and 220,000 acres in Alberta. Fall rye acreage was broken down to 70,000 acres in Manitoba, 190,000 acres in Saskatchewan and 80,000 acres in Alberta. Numbers for Triticale are not available. If Mother Nature is kind, in August we should see a record harvest of winter cereals in western Canada.

Winter Cereals Canada Inc. participated in Crop Production Days in Saskatoon and Ag days in Brandon during January of this year. We would like to thank all the producers who stopped by our booth for information or just to talk farming. In Saskatoon we shared our booth with the Saskatchewan Winter Cereals Development Commission. Board members of the commission were on hand to discuss the commission with all interested

parties. Winter Cereals Canada Inc. provides office services for the SWCDC. If you have questions contact the commission at 1-866-GRAIN-11.

With this issue of the Winter Cereals Grower we welcome many new producer members of the Saskatchewan Winter Cereals Development Commission to our distribution list. Through this newsletter SWCDC will keep you informed of pertinent happenings in the winter cereals industry.

ATTENTION WINTER CEREALS GROWERS

2007 ANNUAL MEETING WINTER CEREALS CANADA INC.

MARCH 21, 2007, 9:30 AM
BEST WESTERN PARKLAND INN, YORKTON, SK

LEARN ABOUT FERTILIZER, NEW VARIETIES, AGRONOMIC PRACTICES, MARKETING AND GRAIN GRADING

Dr. Brian Fowler, Winter Wheat Breeder, CDC
Ray Dowbenko, Agrium
Raymond Dyck, Husky Energy
Randy Dennis, CGC

Dr. Byron Irvine, Ag Canada, Brandon

TO REGISTER AND FOR MORE INFORMATION CONTACT

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THE CANADIAN FEED INDUSTRY AND WINTER WHEAT – WHAT DO THEY WANT?

Marketing professionals know that to successfully market any product the first rule is to find out what the potential buyer is looking for in the marketplace. One of the biggest consumers of winter cereals, in particular winter wheat is, has and will be the feed industry. Until recently no one has asked the industry what they want. Winter Cereals Canada undertook a survey to ascertain what is required for future success in the feed industry.

Winter Cereals Canada teamed up with the Animal Nutrition Association of Canada (ANAC) to determine what characteristics the feed industry would accept in winter wheat. ANAC represents the commercial feed industry in Canada. Members account for approximately 90% of the commercial feed manufactured in Canada. Surveys were distributed to members of ANAC's Nutrition Council. The Nutrition Council is made up of about 100 commercial Nutritionists from coast to coast in Canada. Responses were assigned a numerical score from 1 (low) to 10 (high). When respondents used non numerical response a numerical value best representing the response was used. Questions three and five asked for a specific response. The results of the survey are listed below. You may find some answers surprising!

Q 1) How important is a high crude protein level in feed wheat? The numerical value to this question was 3.6 indicating protein is a low priority. An analysis of the responses showed that there were a small number of responses that placed a high value (8) on protein that shifted the average. The high responses were all from Eastern Canada. 52% of respondents indicated a value of 2 or lower.

Q 2) How important is a specific amino acid content in feed wheat? The numerical response to this question was 5.36 indicating there is concern about the amino acid profile of feed wheat even though total protein was not as important. This question prompted significant extra comments. The most common comment was that the amino acid profile needs to be consistent with minimal variability. It is important that the amino acid regression equations currently available to the industry be applicable to new varieties in order that amino acid profiles can be adjusted by nutritionists as total protein etc varies from year to year. Overall the most important factor mentioned was consistency.

Q3) What is the lowest protein you would accept in feed wheat? The numerical average answer to this question was 9.82%. 48% of respondents indicated 10% while 80% indicated a level of 10 % or less with the lowest value being 6%. In a similar manner to question one the highest responses (12%) were all from eastern Canada suggesting there is a geographic difference in requirements.

Q 4) How important is a high energy level in feed wheat? The numerical answer to this question was 9.48 indicating a strong desire for wheat to supply high levels of energy to the diet. Energy comes from starch content.

Q 5) If a breeder has to select for protein or starch content in a specific line, which characteristic should

it be? 91.6% of respondents indicated starch was the more important factor. 4.2% indicated protein and 4.2% did not answer the question. This is in close correlation to question 4 and a stronger "anti protein" response than question one would indicate.

Q 6) How important is resistance to fusarium (DON) in feed wheat? The numerical average response to this question was 9.32 indicating a strong concern for the presence of fusarium in feed wheat and its effects on livestock production.

Q7) How important is it that a feed variety be a hard wheat vs. a soft wheat? The numerical average response to this question was 3.64 however this value does not represent the much divided opinions voiced in the survey. 20% of respondents were very definite that feed what needs to be a hard variety to ensure good grinding and pelleting qualities. The concerned parties were primarily from eastern Canada again illustrating the different geographic priorities for wheat.

Q 8) How important is the inclusion of a novel trait such as low phytate? The numerical answer to this question was 3.64. Many respondents commented that Phytase enzymes are now plentiful and inexpensive and placing a priority on low phytate as selection criteria was not practical. Generally efforts should not be concentrated in this area.

Q 9) If it was necessary to pigment feed wheat (blue or purple) in order to ensure that contamination of milling or export wheat varieties could be easily distinguished at prairie elevators or export terminals how much problem would you have with the concept? Numerically the response to this question was 3.64. Unfortunately averages do not tell the whole storey. The respondents were split with 66% rating this at 4 or lower and 28% rating at 6 or higher. 20% rated this as a 10 level problem. 80% of the 10 level votes were from eastern Canada. Transfer of pigmentation from grain to flesh or fat was a concern while one respondent felt that colour changes as the level of wheat changed would tip clients to changes in feed formulations resulting in complaints. Again we see a tendency towards a regional bias on this question.

Q 10) Do you think that wheat specifically designed with good feed milling characteristics could command a premium in the marketplace? The numerical answer to this question of 4.24 indicates that it is unlikely for a premium to be placed on a feed wheat variety. 28% indicated a response of 8 or higher while 56% indicated a response of 3 or lower. Overall it is not likely that producers could expect a premium for growing feed specific wheat.

Q 11) Do characteristics like kernel shape have any bearing on the functionality of feed wheat? The response to this question was numerically 1.92 indicating that kernel shape was not a factor. Several respondents did indicate a large plump kernel size was a nice characteristic as cracked and whole wheat is used in many poultry mash type diets.

A Message From The President – Garth Butcher

What a change has taken place in one year. Prospects for grain producers have improved remarkably. Demand for grains, particularly those for ethanol and feed use, is strong and appears to have some staying power. Winter wheat acreage on the prairies is up more than 60% from last year and with the right seeding conditions next fall, we can anticipate even more acres.

One disappointment this winter was the failure to see a positive vote for a winter cereals check-off in Manitoba. We obviously didn't do a good job of describing what funds from a check-off could do for winter cereal producers. A lot of the negative reaction focused on the feeling that a check-off would just be another deduction from our cheques and that the plant breeding and research that a check-off might generate should be the responsibility of government. I think we needed to emphasize that check-off money wouldn't necessarily be spent directly on these activities after they had been downloaded to producers from government. Check-off money would allow producers to negotiate with governments and industry to continue funding, reinstate funding that had been pulled previously, or at least to cost share projects with us as producers. Quebec and Australia are two examples where check-off funding has given producers real power. Ultimately check-off funds would make us more money, and not be a "tax" on our deliveries. In our promotion we also should have stressed the refundability of the check-off which would completely take away the sting for someone opposed to it.

A commission is now a reality is Saskatchewan through the Saskatchewan Winter Cereals Development Commission. With a similar commission in Manitoba we would have the critical mass to influence matters such as winter wheat breeding. It seems to be floundering because of lack of support and funding, and KVD issues. In Manitoba we are considering another attempt at a vote in a year's time. We all have to get out and promote the idea.

In closing, I hope to see a good turn out at our annual meeting in Yorkton on March 21. That meeting will offer an opportunity for winter cereal producers to tell

Winter Cereals Canada and the Saskatchewan Winter Cereal Development Commission where our energy should be directed. See you there.

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3/4 page	\$350.00
1/2 page	\$275.00
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 Brochures, flyers or other inserts quoted as required.
 All advertising must be camera ready or suitable for scanning. Advertorial content is accepted at the standard rates. Advertising deadlines are March 1st, June 1st and November 1st.
 Material should be submitted to:
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When every dollar counts, get a CGC grade

In today's grain market, it's wise to get an idea of your grain's grade and protein before you deliver so you can maximize your returns.

The Canadian Grain Commission's (CGC) Submitted Sample program is a service to assist you when marketing your grain. Knowing the quality before delivery will help you when negotiating a fair return.

"In today's economy, it's important for grain producers to have information on the quality of their grain in order to negotiate fair value," said Bill Adduono, CGC Operations Supervisor, Alberta. "You can get information on grade, dockage, moisture and protein by dropping off or sending a grain sample(s) to any of the CGC's service centres."

All service centres are staffed by expert grain inspectors who can provide personal service and unbiased, timely results. You can also request reinspection of your sample in the event you disagree with the results.

"You can get a CGC submitted sample poly bag at the service centre or use another moisture-proof container for your sample. Fill out a *Producer request for inspection services* form available at grainscanada.gc.ca or make a written request for services. The request must include your name, phone number, sample identification and services requested. The grain sample must be a minimum weight of 750 grams. Bring in or mail your sample to a service center," said Adduono.

Prices per sample

- Wheat/corn - \$15.10 (plus 6% GST)
- Canola/rapeseed/mustard seed/safflower/sunflower - \$24.40 (plus 6% GST)
- Other grains and screenings - \$21.70 (plus 6% GST)
- Canary seed analysis - \$36.50 (plus 6% GST)
- Protein testing - \$9.00 (plus 6% GST)

"Since grade, dockage and protein can vary within a grain field, you will want to take a representative sample to get the best idea of the overall quality of your crop," said Adduono.

For more information on the CGC Submitted Sample program, please call one of the service centres or visit grainscanada.gc.ca. CGC Service Centre locations are located as follows:

Manitoba:	Brandon - Unit 3, 559-8th Street R7A 3X8 (204) 726-7665 Winnipeg - 1054 Pembina Highway R3T 1Z8 (204) 983-2790
Saskatchewan:	Melville - Box 970, 124-1st Avenue East S0A 2P0 (306) 728-6820 Moose Jaw - 1410-C Caribou Street West S6H 7S9 (306) 692-2141 Saskatoon - 103-108 Research Drive S7N 3R3 (306) 975-5714 Weyburn - 611 Railway Avenue S4H 0A9 (306) 848-3350
Alberta:	Calgary - Suite #14, 6130-4th Street S.E. T2H 2B6 (403) 292-4211

WINTER TRITICALE PRODUCERS

Winter Cereals Canada is assembling a database of Winter Triticale seed and grain producers. Interest in Winter Triticale was high at both the Crop Production Show in Saskatoon and at Ag Days in Brandon. There is interest in using Winter Triticale as both a grain crop and a forage crop for livestock; however we have limited information on producers who have seed or grain available for sale. If you grow or have Winter Triticale seed on hand please send your Name, Address and Phone Number for addition to our Triticale Database. Phone, e-mail or fax your information to: jake@wintercerealscanada.org
Phone 204-874-2257, Fax 204-874-2135

If you no longer wish to receive the Winter Cereal Grower newsletter, please send us either an e-mail with your name and address or send us a note with your mailing label requesting that your name be removed from the mailing list.



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Grain Sampling: Uniformity is the Key to Success

How to take a representative sample: The quality of grain from several areas of an apparently uniform field can vary greatly, both in grade and protein level. This means that as you harvest, grade and protein can vary from truckload to truckload. As a result, the quality of your grain can vary both within a bin, and from bin to bin.

Here is a simple method for getting representative samples of your grain without using expensive specialized equipment. Contact your provincial labour department for health and safety information on the use of grain augers.

Sampling your bin: You will need four identical pails. They should each hold at least 20 litres (four gallons). Label two of them A and B. You will also need a tin cup or scoop.

Step 1: As each truck load is emptied into the bin, take cupfuls every 30 to 60 seconds from the sides and the center of the grain stream. Empty the cupfuls into pail A. Sample enough grain so that when the truck is empty, the pail is about three-quarters full.

Step 2: When the truck is empty, mix the contents of pail A thoroughly by hand. Place two empty pails of similar size side by side on the floor with the sides touching. Pour the contents of pail A down the center where the pails touch so that each pail will receive about half the sample. The contents of one of the pails can be poured into the bin. Repeat the process with the contents of the remaining pail until about two kilograms (four pounds) remain. Pour the remaining grain into pail B.

Step 3: Repeat the procedure for each truckload that is emptied into the bin.

Step 4: When the bin is full, thoroughly mix the contents of pail B by hand. How much of the sample in the pail you keep will depend on your needs. Keep in mind that for CGC submitted samples you need a minimum sample weight of 750 grams.

Step 5: Place the sample in a bag or sealed container. Label it to identify the bin it represents.

Sampling your whole crop: When you reach step 4, you can make a composite sample of your whole crop. All you have to do is take one kilogram out of pail B for each 1,000 bushels in the bin and put it in a separate pail labelled C. Do this as you reach step 4 with every bin you fill. Then mix pail C thoroughly by hand. This should give you a good composite sample of your entire crop.

PLAN NOW FOR WINTER CEREAL SUCCESS

Spring may be just around the corner but now is the time to plan for a successful winter cereals crop both in this year and the next. Plan now and ensure you have the earliest maturing variety of canola (or alternative crop) seeded into the fields where you want to plant a winter cereal this fall. Put the odds in your favour by giving yourself as much time as possible to get next years crop in the ground this fall.

With spring your winter cereals will break dormancy and begin the early growth that helps control infestations of wild oats. Winter cereal crops traditionally easily out compete wild oats with their vigorous spring growth. Unfortunately many broadleaf weeds enjoy the same life cycle as winter cereals with a fall growth period followed by a winter of dormancy. When the winter cereals crop wakes up in the spring – so do the broadleaf weeds. Plan ahead for your opportunity to spray these pesky weeds by ensuring your sprayer is tuned up and ready to hit the field at the same time that you are servicing your spring planting equipment. When the weather changes and you are unable to hit the fields with your seeding and cultivation equipment you can quickly switch over to spraying the broadleaf weeds out of your winter cereal crop. The earlier you spray the easier broadleaf weeds are to kill. The difference between frustration and satisfaction lies in planning ahead!

CWB CONTEMPLATES CHANGES TO THE IDENTITY PRESERVED CONTRACT PROGRAM FOR CANADA WESTERN RED WINTER SELECT

by Janis Arnold

Production of Canada Western Red Winter (CWRW) Select wheat has significantly increased under the CWB's Identity Preserved Contract Program. In 2006, Select varieties accounted for nearly half of 720,000 acres of CWRW. Quality was excellent and buyer response has been positive. However, getting a consistent supply of high-quality CWRW Select from the combine to the customer has presented challenges.

Yield results vary by region, so it is difficult to determine the exact tonnage of Select varieties of CWRW for 2006. Yields in eastern Manitoba were as high as 80 to 100 bu/ac but in southern Alberta, 40 bu/ac. What we do know is that a relatively small proportion of the CWRW Select produced in western Canada in 2006 was signed up under the 2006-07 IP program—37 300 tonnes. Although 72% of this production has been delivered, the overall quantity of CWRW Select available for sale has been disappointing. As a result, some CWB sales of CWRW Select have been delayed. In one instance, another product satisfactory to the customer was substituted. Meanwhile, domestic and international demand for CWRW Select continues to grow.

So what's the source of the challenges to originating CWRW Select to meet the CWB's sales commitments? And how can these challenges be met? How can farmers help the CWB to grow the size of the CWRW Select IP program?

The challenges

Typically, CWRW acreage is scattered across the Prairies, requiring that the CWB originate small car blocks from numerous elevators. Once large blocks of CWRW have been exhausted, the origination of remaining supplies becomes cumbersome.

Poor protein levels on the eastern prairies in 2006 meant that many Select growers could not meet the minimum levels of 11.5 per cent. Local elevators had little flexibility in terms of taking in anything less than the minimum level.

Strong non-board feed market prices meant a lot of production went straight to hog barns and to feedlot alley. This was not restricted to non-Select varieties and low-protein Select CWRW as cash prices were so attractive they made CWB protein premiums a non-issue even for the eligible Select varieties.

Many producers took advantage of attractive Fixed Price Contract levels for winter wheat as well as the CWB's early call right off the combine for generic CWRW. Ethanol plants and feed markets were in the game trying to secure deliveries as well.

With above-average yields for all crops in 2006, many producers couldn't afford to tie up bin space with winter wheat and hold onto it for delivery into the CWB Select program.

While CWRW Select has more desirable end-use qualities than generic CWRW—at least equivalent to those of U.S. Hard Red Winter (HRW)—assuring customers that they will have access to a consistent supply of this preferred product has not always been possible.

Solutions?

Here are a few areas where solutions might be found:

- reducing the minimum protein content to 11.0 per cent, given recent analysis indicating that this would not significantly compromise end-use quality;
- instituting sampling, sourcing and pricing programs to facilitate early movement of CWRW Select;
- tendering the handling of CWRW Select varieties in order to address the problems inherent in sourcing grain from many locations across the Prairies.

Like any CWB program, the Identity Preserved Contract Program (IPCP) for CWRW Select exists for farmers and needs to be designed for their maximum benefit. The CWB is anticipating a large crop this coming harvest and is keen to serve the needs of a growing customer base.

For the 2007-08 crop year, look for refinements to the CWB's IPCP for CWRW Select as farmers and customers continue to embrace its qualities. Sign-up deadline for the 2007-08 IPCP is June 22.

And stay tuned to the CWB Web site as plans unfold for winter wheat field days at locations in Saskatchewan.

Varieties and acres: The CWB's 2006-07 IPCP for CWRW Select

Varieties	Percentage of seeded acres
CDC Buteo	35
AC Bellatrix	31
Radiant	12
McClintock	11
CDC Osprey	8
AC Readymade	2
AC Tempest	1
Norstar	<1

Janis Arnold is a program manager in the CWB's department of Program Development and Marketing Support.



Winter Cereals Canada Inc. works in partnership with the Alberta Winter Wheat Producers Commission to promote research on Winter Wheat within the framework of the Western Grains Research Foundation. Within the Wheat Advisory Committee Winter Cereals Canada Inc. represents the interests of Manitoba and Saskatchewan winter wheat producers. Recently our focus has been on discussions with the University of Saskatchewan and the Crop Development Center concerning the long term outlook for winter wheat breeding in Saskatchewan.

Western Grains Research Foundation -- Committed to Western Canadian Farmers

Western Grains Research Foundation (WGRF) is a farmer funded, charitable non-profit, that funds research directly benefiting Western Canadian farmers. WGRF is responsible for managing an Endowment Fund and the Wheat and Barley Check-off Funds, with research funding averaging \$4 to \$5 million per year.

The check-off for wheat is calculated at \$0.30/tonne, and barley is collected at \$0.50/tonne. The check-off's are not a mandatory levy, and farmers can choose to opt-out of the payment. Farmers, in return of their investment, receive approximately \$4 for each \$1 invested. This return is made in the form of improved wheat and barley varieties. As well as, a range of new technology to improve production and support Canada's competitiveness in the world grain market.

Western Grains was started in 1981 to manage the Endowment Fund, which began the same year. The Wheat and Barley Check-off Funds were added for the 1993-94 crop year. Today, WGRF is one of Canada's major examples of a worldwide trend - farmers funding research.

Decisions regarding the distribution of research funds are overseen by the WGRF Board. The board is made up of 18 farmers - each representing a different agricultural organization - from all of the Western Canadian provinces. Western Grains also has a Wheat Advisory Committee and a Barley Advisory Committee that makes recommendations to the board regarding their area of expertise.

Working with breeding researchers from all around Western Canada, the check-off funds have supported in-part more than 35 new varieties of wheat and 20 varieties of barley to date. Some examples of Winter Wheat varieties include Radiant, CDC Butero and CDC Raptor.

Western Grains is committed to investing in breeding research that will produce superior wheat and barley varieties for farmers in Western Canada. If you have any questions about the Western Grains Research Foundation, please call us at 306-975-0060, or visit us on the web at www.westerngrains.com.

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GUIDELINES FOR SPRING APPLICATION OF N FOR WINTER WHEAT

The cropping cycle for winter wheat is obviously different from spring seeded crops. As a result, nitrogen fertilizer management for winter wheat is generally quite different from that used for the majority of prairie crops where emphasis is increasingly being placed on the application of the fertilizer at the time of seeding.

For a variety of reasons, only a minimal amount of fertilizer N is usually applied at the time winter wheat is planted. Most growers still choose to broadcast apply their N fertilizer requirements in the spring of the year. In the past, the preferred source of nitrogen for this application was always ammonium nitrate (34-0-0) because of consistent agronomic performance of this product under a wide range of soil and climatic conditions.

Unfortunately, ammonium nitrate is no longer available within western Canada. The logical replacement for ammonium nitrate is now urea (46-0-0), a nitrogen fertilizer that has been plagued with poor or unpredictable performance when applied to the surface of the soil, due to the potential risk of significant volatile losses of ammonia to the atmosphere.

Quite frankly, the problem is not directly associated with the urea itself, but rather with the breakdown of urea in the presence of a naturally occurring enzyme that converts urea into a different compound. This breakdown compound is ammonium carbonate (or as it more commonly known, "smelling salts") which can be used to jolt athletes back into reality from a state of semi-consciousness. The reason that "smelling salts" are so effective is because this product easily and freely dissociates into free ammonia and carbon dioxide.

If this enzyme mediated breakdown of urea takes place within the soil, any ammonia that is liberated is easily retained because of the strong attraction of ammonia to soil particles. However, if this breakdown occurs on the soil surface, the risk of volatile losses can increase quite dramatically. If rainfall of at least 0.25 inches takes place within a day or two, most of the urea will be moved into the soil before it has been converted into ammonium carbonate, thereby significantly lessening the risk of losses.

Some growers will apply broadcast urea while the surface is wet, under the mistaken assumption that a wet soil surface will reduce the risk of volatile losses occurring. The problem with applying urea to the soil surface under these conditions is that a wet soil surface will not help in moving the urea into the soil where the risk of losses would be minimized. In fact, a wet soil surface can easily aggravate the risk of volatile losses.

This increased risk exists due to water moving to the surface and evaporating during the process of the soil surface drying out. In response to the evaporative action of the soil surface drying out, urea moves upwards and is concentrated in the crop residues where the risk of losses is increased. Remember that rainfall following shortly after a broadcast application of urea can help to reduce the risk of volatile losses occurring. On the other hand, broadcast applying urea after a rainfall can actually increase the risk of volatile losses.

In a similar manner, a broadcast application early in the spring, to wet soil surface that re-freezes following an early spring snowmelt, can also predispose the surface applied urea to an increased risk of volatile losses. Once the soil surface re-thaws in response to warming conditions, the drying of the soil surface will result in the concentration of the urea in the surface litter where the risk of losses will be highest.

If you have used ammonium nitrate (34-0-0) in the past for fertilizing winter wheat, simply substituting untreated urea for this spring top-dress application to your winter wheat crop could be disappointing. This results because of the tendency of soil enzymes to convert urea into that volatile compound known as "smelling salts", which is quite vulnerable to losses.

The performance of urea can be significantly improved by treating it with a product called Agrotain. Agrotain acts to block the enzyme that mediates the breakdown of urea into "smelling salts". Depending on the rate of application, the enzyme blocking action of Agrotain can last for two to three weeks. This creates a much wider window of opportunity for rainfall to move the urea into the relative safety provided by soil contact before it becomes vulnerable to volatile loss mechanisms.

The urea component of liquid N fertilizers (i.e. UAN with an analysis of 28-0-0) can be quite vulnerable to the same volatile losses of N, especially if spray applied onto the soil surface, crop residues or living plant materials. If UAN is dribble-band applied, the risk of volatile N losses can be reduced due to the fact that the dribble stream serves to restrict the amount of soil it comes into contact with. In addition, by concentrating the UAN within a surface band, soil penetration is improved.

Anecdotal information collected from grower established strip trials appears to indicate that the addition of Agrotain will be of limited benefit if rain is received within 2-3 days of application. However, if the rain-free period following dribble band application of UAN is greater than 3 days, the product should be treated with Agrotain in order to minimize the risk of volatile losses and poor performance of the UAN fertilizer.

Unfortunately, the new urea products that are coated with a plastic-like material do not appear to be effective spring surface applications for winter wheat. In fact, it appears that under these conditions, these types of products may be more prone to volatile losses of ammonia. This appears to be associated with the fact that the urea is gradually released from the encased pellets in the form of a urea solution. This gradual release will enhance the ability of the urease enzymes to maximize volatile losses.

