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Crop Watch No. 2004-1, March 5, 2004

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CROP WATCH

University of Nebraska Cooperative Extension
Institute of Agriculture and Natural Resources

UNIVERSITY OF
Nebraska
Lincoln

No. 2004-1, March 5, 2004

New crop revenue assurance plan offered

A new crop insurance option could save Nebraska farmers money on this year's premiums, according to a University of Nebraska farm management specialist. The new option is Revenue Assurance, a multiple peril crop revenue insurance program being offered in Nebraska for the first time, said Roger Selley, farm management specialist at the university's South Central Agricultural Laboratory near Clay Center.

Farmers who want to select this option or change their crop insurance coverage for spring-planted crops need to do so by March 15. For farmers who already have multiple peril crop insurance policies, coverage will continue this year if no changes are made with their insurance agents.

"In most cases when deciding whether or not to sign up for

Crop insurance deadline is March 15

Revenue Assurance, farmers will be looking at the difference in premiums, which they have to get from their insurance agents," Selley said.

Revenue Assurance has subsidized premiums similar to Crop Revenue Coverage, another multiple peril crop insurance program, but offers a whole farm unit option with significant premium discounts, Selley said. The whole farm unit of Revenue Assurance allows farmers to combine their acres planted to all insurable spring crops in a county into one unit.

"This way, indemnities are paid out only if the whole farm shows a

loss, resulting in premium discounts up to 50%," Selley said. For example, if there was a bad soybean crop, but a good corn crop, the good corn crop could offset the soybean crop loss and the whole farm would not show a loss.

With Crop Revenue Coverage, some fields can contribute more revenue than expected and offset the shortfall on other fields, which keeps the net revenue shortfall from exceeding the deductible.

"In some ways it's similar to a family deductible for health insurance coverage where medical costs for an individual are not reimbursed unless they exceed the family deductible or they exceed the deductible when combined with the expenses for other family mem-

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Smaller soybean seeds in 2004 offer high quality, savings

Soybean seed weights are lower again this year, continuing a trend toward growers getting more soybean seeds per pound than they once did.

Figure 1 (page 3) shows the change with seed from University of Nebraska soybean variety performance trials for the last nine years. In 2003 soybean seeds from these trials weighed about 3,400 seeds per pound, while in the two previous years seeds weighed 3,000 to 3,200 seeds per pound. Seed weights in

Germination numbers unusually high

See page 4

the UNL trials in 2000 were similar to those in 2003. This trend is typical for commercial seed producers, especially following drought years. Seed imported from eastern states is also likely to be smaller than that produced in Nebraska in 2003.

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Ag briefs

Farm numbers down

Nebraska's number of farms and ranches declined during 2003, continuing a downward trend, according to a Feb. 27 release from USDA's Nebraska Agricultural Statistics Service. The number of farms and ranches in the state is 48,500, down 900 or 2% from the revised 2002 total.

The number of farms and ranches in the economic sales class \$1,000 - \$9,999 remained the same in 2003 at 13,100, while operations with sales of \$10,000 - \$99,999 decreased 4% to 19,000. Farms and ranches with sales of \$100,000 - \$249,999 declined 1% to 9,100 and operations with sales of \$250,000 - \$499,999 decreased 2% to 4,300. The number of farms and ranches with sales over \$500,000 was unchanged during 2003 at 3,000.

Land in farms and ranches in Nebraska, at 45.9 million acres, was unchanged from the revised 2002 total. The average size of operation increased to 946 acres, up 17 acres from a year earlier.

Weeds of the Great Plains

The Nebraska Department of Agriculture recently released an updated version of their ever popular "Weeds of the Great Plains".

The book is a collaborative effort between the University of Nebraska and Nebraska Department of Agriculture to provide key information to farmers, ranchers, and homeowners, as well as more technical information for botanists. It features detailed narratives of more than 400 plants; line drawings of 266 weeds; large colored photographs and close-ups of weed flowers, seedlings and key identification characteristics; identification methods to distinguish similar species; historical attributes and uses of each plant; and plant habitats and descriptions of growth forms.

The authors include Dr. James Stubbendieck, professor of agronomy at the University of Nebraska-

Lincoln; Mitch Coffin, Noxious weed Program Manager for the Nebraska Department of Agriculture; and Lori Landholt, Research Technologist for the UNL Department of Agronomy.

Books are available for purchase from NDA for \$25 by calling (402) 471-2394. An order form is available online at the Noxious Weed Program web page at <http://www.agr.state.ne.us/division/bpi/nwp/nwp1.htm>

New on the Web

Seed industry report

The unprecedented growth in U.S. agricultural productivity over the past 70 years owes much to a series of biological innovations embodied in major crop seeds, in particular cotton, corn, soybeans, and wheat. These innovations have resulted from considerable time and money invested in plant breeding research and development. Now, however, the seed sector has changed: seed research and development has moved from being predominately public to predominately private, innovation protection is now pervasive, and the private seed industry has become highly concentrated. An article in the February 2004 Amber Waves Web magazine,

sponsored by USDA, examines the extent of this shift in more detail. The article is at <http://www.ers.usda.gov/Amberwaves/February04/Features/HaveSeed.htm>

Biotechnology site a hub of regulatory information

The new U.S. Regulatory Agencies Unified Biotechnology Web site provides information about the U.S. oversight system for products of modern biotechnology. It includes information on the roles of the regulatory agencies and links to relevant statutes and regulations. The centerpiece of the Web site is a searchable database of all genetically engineered crop plants intended for food or feed that have completed the recommended or required reviews for food, feed, or planting use in the United States.

The Web site and database were jointly developed by the Department of State (DOS), the U.S. Department of Agriculture (USDA), the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA) and the U.S. Geological Survey (USGS).

See *Crop Watch* on the Web for more updates.



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Lisa Jasa, Editor; Email: ljasa1@unl.edu

Soybean seed size *(Continued from page 1)*

Smaller seed size is not indicative of reduced quality or germination potential and should offer an economic advantage for producers (see story, page 4). For example, at the pre-drought average of 2,500 seeds per pound, the normal seeding rate would be 60 pounds per acre, or about 150,000 seeds. However, a seed lot with 3,500 seeds per pound would have a planting rate of about 43 pounds per acre. That would be a 28% savings of seed costs relative to normal seed weights and a normal year. At today's seed prices, that would be equal to about a \$9 per acre savings.

To garner this savings, growers will need to carefully estimate their seed needs and calibrate their planters and drills for the smaller seed. (*CropWatch* will feature more details on adjusting planters and drills for this year's soybean seed in an upcoming issue.)

Growers will want to review the seed weight listed on the bag to calibrate their planters correctly and avoid overplanting. Soybeans planted too thick will be tall, spindly, and more prone to lodging. This could reduce yields. We recommend planting soybeans at 150,000 live seeds per acre regardless of whether the field is irrigated

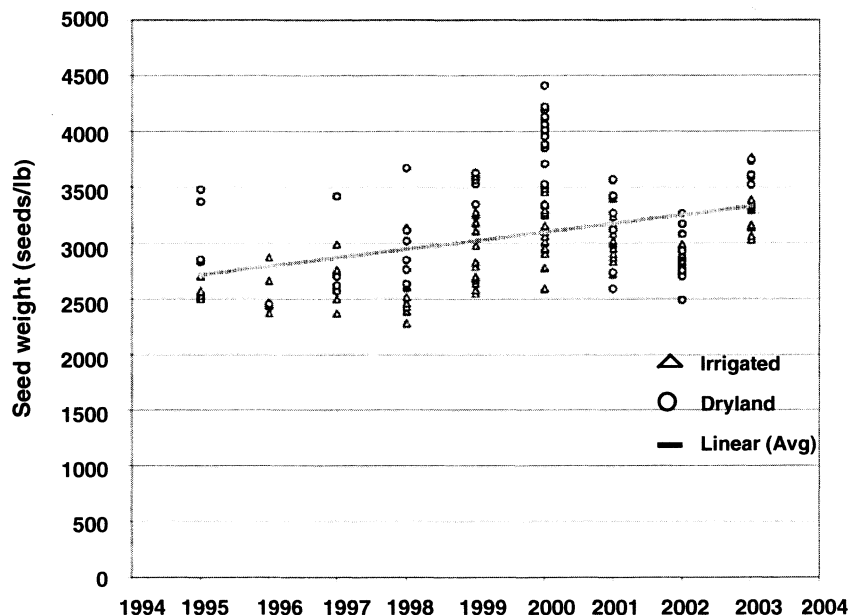


Figure 1. Soybean seed weight (seeds/lb) from University of Nebraska Soybean Variety Performance Trials, 1995-2003. The linear trends for both irrigated and dryland trials were similar and significant ($P = 0.01$).

or dryland, in wide rows or narrow rows, no-till or tilled, or if the seed is large or small. We've seen consistent results with different varieties across a wide range of planting practices and environments in Nebraska with this seeding rate. However, if seed-soil contact is less than ideal for seed, you may need to increase seeding rates accordingly. A stand of 100,000 to 120,000 plants in the field at harvest is ideal.

Make sure to adjust this recommendation based on the germination rate of the seed you plant. If the seed weight and germination is not listed on the seed tag, contact the seed dealer for further information. Fortunately, seed quality and germination rates for this year's seed are excellent.

(Continued on page 4)

Revenue assurance *(Continued from page 1)*

bers," he said.

However, producers accustomed to receiving payments for losses on individual fields or farms will need to rethink why they have crop insurance if they consider the whole farm option, said Doug Jose, a farm management specialist at the university.

"This option works well where the producer has identified a minimum revenue that he or she would like to realize in the worst of years," Jose said. "In effect, the producer is self-insuring any losses

on individual fields and buying insurance to cover only those losses that affect the entire enterprise or farm."

When each field is insured separately, premiums are more expensive, Selley said.

In addition to whole farm units, Revenue Assurance also is available in enterprise units. An enterprise unit combines all acreage of an insured crop in the county. Revenue Assurance discounts using the enterprise unit depend on the acreage and number of sections

involved, Jose said.

Revenue Assurance is available in Nebraska for corn, soybeans and wheat. Crop Revenue Coverage is available for corn, soybeans, wheat and grain sorghum.

Regardless of what policies or coverage levels farmers prefer, they should discuss their needs with their insurance agent, Jose said.

Sandi Alswager
IANR Newswriter

Soybean seed quality high; germination over 94%

Tests at the Nebraska Crop Improvement Association indicate soybean seed quality and germination are very high this year. In 25 years with NCIA, I have never seen the average germination on soybeans exceed 90%; however, this year the average is above 94% and we haven't seen the typical midwinter decrease in germination or vigor.

In addition, Nebraska has maintained its high mechanical quality and germination standards while some other states were not able to this year. Buyers need to be cognizant of the analysis and test date for the seed they're buying.

The seed size is slightly smaller this year than the average for the past seven years, averaging about 3200 seeds per pound compared to an average of 3100 seeds per pound. The smaller seed size will not affect emergence or establishment of the young plants, and in fact, research has shown that the photosynthetic ability of the first leaves on smaller sized soybean seed is higher than it is for larger sized seed. This suggests that the plant can compensate for the reduced amount of stored carbohydrates in the cotyledons when it is first emerging from the soil. Further research has indicated that there is no effect on eventual

yield potential for fields planted with smaller seeds versus larger seeds of the same variety.

Generally, smaller soybean seed will have less mechanical damage than larger seed, a fact reflected in the germination of the seed lot.

In some other crops seed size correlates to yield potential but this has not been shown to be the case for soybeans with only slightly smaller than average size.

Larry Prentice, R.S.T.
Assistant Manager, Nebraska
Crop Improvement Association

Soybean seed size *(Continued from page 3)*

Possible causes for the trend

Several factors may be contributing to the trend toward reduced soybean seed size. Certainly, the recent dry summers could have an impact. Soybean seed weight is determined in August when conditions are often at their driest. (This is even more typical in seed production further east where there is less irrigation and seed size may be even smaller -- with some companies estimating 4,000 soybean seeds per pound this year.) At first glance, this is the most likely explanation; however, the linear trend is similar for both dryland and irrigated experiments in Nebraska (*Figure 1*). I expected little or no trend over years with irrigation since we are able to optimize seed size with

proper late-season irrigation. Are we perhaps reducing seed size and thus yield potential by shutting off the water too early in the fall?

Another factor to consider might be whether the varieties being planted now are inherently smaller than they were seven to nine years ago. A longer term, more focused analysis of the data is necessary to answer these questions. Please let me know if you have any insight on these trends.

For more information about seeding rates, consult NU Cooperative Extension NebGuide Soybean Seeding Rates, G99-1395, and "Plan for smaller soybean seed at planting" in the January 2004 Web-only *Crop Watch* story by Sandi Alswager.

Roger Elmore
Extension Crops Specialist

Crop scout training scheduled for March 16

New and experienced crop scouts will benefit from the March 16 UNL Crop Scout Training for Pest Managers. Program topics will include: growth staging of corn and soybean, recognizing fertilizer deficiencies, identifying major pests in corn and soybeans, economic insect thresholds, managing soybean cyst nematode, and weed and disease identification and control.

Presenters will include: Dale Flowerday, agronomist, Delmar Consulting; Keith Glewen, extension

educator; Barb Ogg, extension educator; Brady Kappler, weed science educator; and Jennifer Chaky, plant pathology educator. The program is part of Cooperative Extension's Crop Management Winter Programs which provide in-depth and detailed information from university specialists and private industry representatives.

Training will be held from 8:30 a.m. to 4:30 p.m. at the University's Agricultural Research and Development Center near Mead. Cost is \$65

for those registering before March 9 and \$75 for those registering afterward. Fees include lunch, refreshments and a workshop manual.

Certified Crop Advisor continuing education credits are available, with four in pest management, one in crop management and one-half in fertility/nutrient management.

For more information or to register, contact Keith Glewen at (402) 624-8000, e-mail kglewen1@unl.edu or visit the ARDC's Web site at: <http://ardc.unl.edu/training.htm>.

Weighing your odds

Soil moisture readings show early deficits

As producers prepare for the upcoming spring planting season, I would like to relay the most current estimate of soil water conditions from the High Plains Regional Climate Center soil moisture monitoring project. Soil moisture probes have now been added to almost every Automated Weather Data Network (AWDN) site within Nebraska. Each probe site is located under grass, so the current estimates of available moisture may not completely reflect field conditions due to some water usage during the warm October and November period. (To monitor these levels this summer, visit the Web site at <http://www.hprcc.unl.edu/soilm/>)

Table 1 shows estimates of available soil moisture at various Nebraska sites. What is readily apparent is the lack of significant moisture in western Nebraska in stark contrast to the abundance of soil moisture in southeastern Nebraska. Much of the moisture in the southeastern corner can be tied directly to the heavy thunderstorms in late October and early November. In addition, significant snowfall occurred across this region during the Jan 20 - Feb. 10 period. Western Nebraska missed most of these events, so a considerable portion of the disparity in the available moisture readings reflects this moisture divergence.

The Nebraska climate office ran a statistical analysis on the current soil recharge period beginning Oct. 1, 2003. Except for the southeastern corner of the state, precipitation deficits have been recorded since October for most of the state. The most significant departures are in the southwestern corner of the state and in the southern Panhandle. Based on the last 100 years of data, there is less than a 25% chance that the deficits incurred from Oct. 1, 2003 to Feb. 29, 2004 in these regions will be made up by May 1 and less than a 35%

chance that they will be made up by June 1.

The picture brightens somewhat as one heads east. For most of west central, north central, south central and central Nebraska, there is a 35-40% chance of eliminating the deficits incurred from Oct. 1, 2003 to Feb. 29, 2004 by May 1. The odds increase to 40-48% that the deficits will be eliminated by June 1. For the eastern third of the state the odds that the deficits will be reduced range from 45-50% by May 1 to 50-55% by June 1. In areas of southeastern Nebraska which have seen a precipitation surplus, there is a 65% chance that profiles will be at least 80% full by May 1 and a 90% chance by June 1.

If normal weather persists from now through the growing season, irrigators across central and western Nebraska should anticipate that 1-1.5 inches of additional moisture will

be needed to compensate for the deficits incurred since October. If weather patterns are similar to the driest 30 years out of the last 100 years through June 1, an additional 2 inches of irrigation will be needed, along with normal summer precipitation. If the weather falls into the driest 10 percentile, irrigators may need to apply an additional 4-6 inches of water to compensate for the accumulated precipitation deficits.

In order to completely reduce the deficits incurred from Oct. 1, 2003 to Feb. 29, 2004 by June 1, the western half of the state will need to experience conditions similar to the wettest 30 years out of the last 100 years. Irrigators east of Grand Island will need to see conditions similar to the wettest 40 years out of the last 100 years.

Al Dutcher
Extension State Climatologist

Crop selection and strategies for limited water supplies.

Next issue: March 19

Table 1. Estimated available soil moisture available to the nearest 0.5 inch at AWDN sites with soil moisture probes. All sites are under grass. Amounts may be less at individual sites due to some field water usage during a warm October and November.

City	Est. soil moist. (in)	City	Est. soil moist. (in)
Ainsworth	1.5	Indian Cave State Park	6.5
Alliance	1.0	McCook	3.5
Arthur	3.5	Mead	3.5
Beatrice	7.0	Mitchell	1.0
Concord	4.0	O'Neill	3.0
Curtis	1.0	Ord	4.5
Elgin	5.0	Red Cloud	1.5
Gothenburg	1.0	Sidney	0.5
Holdrege	3.0	West Point	3.0
Imperial	0.5	York	4.0

Controlling downy brome in pastures and rangeland

Thousands of acres of pastures and rangeland are infested with downy brome. Annual bromes (downy brome, hairy chess, and Japanese brome) have little grazing value after seed heads are formed and may reduce livestock performance. The recent drought years have hindered the growth of perennial grasses and aided the increase of the winter annual bromes. Control of downy brome in pastures and rangeland requires a combination of herbicides and grazing management.

Glyphosate, paraquat, and Plateau are the most economical means of controlling downy brome in perennial grasses; however, registration restrictions limit their use. Not all glyphosate labels mention control of downy brome in pastures and rangeland. Check the herbicide label before using.

Applying glyphosate to perennial grasses before a killing frost or after plants green up in the spring will cause injury. AMS or ammonium sulfate should not be used with glyphosate when treating pastures or rangeland. The ammonium sulfate may increase injury to perennial grasses.

Some glyphosate products are labeled for controlling downy brome in dormant pastures and rangeland. These include Glymix MT®, Glyphomax®, Glyphosate®, Gly Star®, Roundup Original II®, Roundup Ultra®, Roundup UltraMax RT®, and Roundup WeatherMax®. Domestic livestock must be removed before application, and pastures cannot be grazed or harvested for hay for eight weeks after treatment. Application should not be made more than once per year.

Suggested glyphosate rates vary with brand names for controlling downy brome and many other

annual weeds growing with perennial cool and/or warm season grasses. For instance Gly Star suggests 8 to 16 ounces per acre (3 lb ae/gal), while Roundup Weathermax suggests 8 to 11 oz per acre (4.5 lb ae/gal). Fall applications should be made when good fall growth is present after a hard freeze has killed the top-growth of perennial grasses. Spring applications must be made before perennial grass growth begins again.

Paraquat at 16 ounces per acre will control downy brome in the fall, but will not kill downy brome in the spring if it is well tillered because regrowth occurs from tillers. Paraquat may severely injure some perennial grasses, such as Kentucky bluegrass.

Plateau at 2 to 12 oz per acre can be applied in the fall or early spring in pastures and rangeland. A MSO surfactant should be added at 1 qt per acre if it is not a newly planted stand. Some perennial grass species have different suggested rates because of tolerance to Plateau.

Atrazine at 0.5 to 1 quart per acre can be used to control downy brome in roadsides. Use 1 qt per acre on fine-textured soils and 0.8 qt per acre on coarser textured soils to avoid injury to desirable grasses. Apply atrazine before freeze up in the fall or before perennial grasses green up in the spring. Big bluestem, bluegrama, buffalograss, indiagrass, little bluestem, sideoats grama, and needle-and-thread are more tolerant to atrazine than crested wheatgrass, smooth brome, switchgrass, and western wheatgrass.

Gail Wicks
Extension Weeds Specialist
West Central REC
Robert Wilson
Extension Weeds Specialist
Panhandle REC

Farmer/rancher applications sought for grants

Innovation often begins with a producer's idea. To provide financial support for these farm- and ranch-initiated concepts, USDA's North Central Region Sustainable Agriculture Research and Education (NCR-SARE) established a Producer Grant program. This year about \$400,000 will be available on a competitive basis. Individuals can receive up to \$6,000 and groups of three or more producers can receive up to \$18,000.

NCR SARE, which is hosted by the University of Nebraska-Lincoln, is currently accepting applications from producers for research, demonstration, or educational projects. The projects must be environmentally sound, socially responsible, likely profitable, and show a potential benefit to other farmers in the North Central Region.

Applicants must live in the 12-state region which includes Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

Past projects represented a variety of topics, including weed and pest management, strategies and changes to reduce off-farm inputs, marketing, improving water and soil quality, sustainable grazing techniques, and recycling farm waste.

Grant proposals are due at the NCR-SARE office in Lincoln by 4:30 p.m. March 24. Funds would be available in early fall.

Application forms are available on the NCR-SARE Web site at <http://www.sare.org/ncrsare/> or contact the regional office at NCR-SARE, University of Nebraska, 13A Activities Bldg., 1734 N. 34th St., Lincoln, NE 68583-0840; phone: 402-472-7081 or e-mail ncrsare@unl.edu.

March 11 in North Platte

Workshop targets serious grasshopper potential

The serious grasshopper situation that developed in Nebraska the last two years is likely to continue again this year with the potential for serious densities greater than it has been for many years. A risk hazard map produced by USDA-APHIS shows potential for serious grasshopper densities through a large portion of the Nebraska Sandhills, as well as problem areas throughout much of western Nebraska. Several factors will affect whether a severe outbreak develops, including how environmental conditions will affect developing grasshopper populations and the production of grass through spring and early summer. A major portion of the rangeland covered in this hazard area is still experiencing severe drought.

In light of this serious situation, the University of Nebraska-Lincoln Cooperative Extension in cooperation with USDA-APHIS, will be holding a Grasshopper Management Workshop on March 11 at the West Central Research and Extension

Identifying hopper hot spots

According to a USDA projection, the potential for serious grasshopper damage in the western two-thirds of Nebraska ranges from three to more than fifteen grasshoppers per square yard.

To view the regional USDA projection map, visit the *CropWatch* Web site at <http://cropwatch.unl.edu>

sion Center in North Platte. The workshop will begin at 10 a.m. (CST) and continue until 4 p.m. The workshop is free and targeted at aerial applicators, ranchers and land managers who will be involved in making decisions about grasshop-

per management and control. The workshop will be in-depth and cover grasshopper biology and behavior especially as it relates to grasshopper management and the implementation of the Reduced Agent and Area Treatment (RAATs) program.

In 2003 the RAATs program provided excellent control of grasshopper populations on roughly 500,000 acres of rangeland at much reduced prices ranging from \$1.40 to \$2.00 per protected acre. As in 2003, there will be a cost-share control program, but the extent of funding from state and federal partners has yet to be finalized. The potential for serious grasshopper problems in 2004 is several times greater than in 2003, so proper implementation of the RAATs program on those acres where control is needed will be critical to Nebraska ranchers.

**Gary Hein, Entomologist,
Panhandle REC**
**John Campbell, Entomologist,
West Central REC**

Learning from farmer experiences

Corn and soybean growers discuss on-farm research

Corn and soybean growers are invited to attend the *Nebraska Soybean and Feed Grains Profitability Project (NSFGPP)* on-farm research update March 11 at the University of Nebraska Agricultural Research and Development Center near Mead. The program will be held at the Research and Education Building.

Producers will receive valuable crop production information from on-farm research projects conducted on Nebraska farms by Nebraska farmers. The programs will be held from 9 a.m. to 3 p.m.

The *Nebraska Soybean and Feed Grains Profitability Project* is an on-farm research project designed to provide farm operators with an understanding of how to conduct crop research on their farms using their own machinery. Comparisons are scientifically designed, statistically analyzed and conducted for three years to assure reliable, useful information.

Tom Hoegemeyer, president and research director, Hoegemeyer Hybrids, will be the luncheon speaker. He will address the outlook for genetics and biotechnol-

ogy for the next 20 years and provide insight into the shift of crop breeding, genetics, and variety development from the non-profit public sector to private companies.

According to Hoegemeyer, biotechnology has been largely taken over by a few multi-national companies in the last 10 years. The array of hybrids, traits, seed treatments, seed size and packaging options are taking most of the profit out of seed companies.

(Continued on page 8)

Protect your investment

Stored grain management nears critical period

We are experiencing one of the most exciting price rallies the grain market has seen for many years. Compared to the August 2003 lows, Chicago Board of Trade corn prices are up \$0.70 and May soybeans are up about \$4.00 per bushel. Producers who have not already sold their grain may be tempted to hold it a bit longer to see how high the market will go.

To ensure the value of stored grain as we move from winter to spring, it is especially critical to manage grain temperature with aeration. Convection currents occur when grain in different parts of the bin are at different temperatures. Convection currents are most likely to occur during the transition from fall to winter and from winter to spring.

If warm grain is stored in the fall and not cooled sufficiently by aeration, the grain next to the bin wall will radiate heat to the colder air. This leaves a core of warm grain in the middle of the bin with colder grain around the edges. Warm air rises through the grain in the center of the bin and is replaced by denser cold air sinking through the colder grain near the wall. Warm air holds more moisture than colder air. When the warm air contacts cold

grain at the top surface, some moisture can condense out of the air resulting in a wet spot in the top center of the bin. This wet grain can heat and become moldy and create an environment where storage insects can become active.

A convection current moving in the opposite direction can occur in the spring. As the ambient air temperature becomes warmer, the grain next to the bin walls will be warmed, but the grain in the middle of the bin will stay cold. Air rises through the warmer grain near the wall while the denser air in the cold grain in the center of the bin sinks to replace it. Moist, springtime air is drawn into the top center of the grain mass to replace this sinking column of air. Some of the moisture in the air will condense as it enters the cold grain. Once again, a wet spot will form at the top center of the bin. If the temperature difference is not corrected quickly with aeration, a hot spot will form in the center of the bin.

Corn held until May should be warmed to about 50°F and dried to 15% moisture or less. Corn held into summer should be warmed to 60°F and dried to 14% moisture.

If the grain was brought down to freezing or below during the

winter, it is best to push a warming front through the grain whenever air temperature is only a few degrees higher than the grain temperature. Aerate the bin when humidity is low to avoid the possibility of creating a frost layer that blocks air movement at the bottom of the bin. Once grain temperature is higher than 35°F, push a warming front through whenever the average 24-hour air temperature will be 10 degrees higher than the grain temperature until the desired storage temperature is reached.

To estimate how long in hours it would take to push a cooling or warming front through the grain, divide 15 by the airflow rate in cubic feet per minute per bushel (cfm/bu). For example: it would take about 75 hours to push a warming front through a bin of corn at 0.2 cfm/bu but would only take about 15 hours at 1.0 cfm/bu.

When not running the aeration system, remember to close roof hatches to prevent rain and snow from getting into the bin. Cover the fan whenever it's not running to prevent problems caused by moist air at the bottom of the bin being drawn up and through the grain.

**Tom Dorn, Extension Educator
Lancaster County**

Corn and soybean growers *(Continued from page 7)*

Hoegemeyer will challenge producers to consider the long-term future of crop production with higher-level input traits as well as specific application output traits. He believes production also will be driven by the ability of dominant end users to demand "what they want, when they want it", as much as by needs of the producer.

A \$10 registration fee for those who are not currently NSFGPP members includes a copy of the annual on-farm research report, refreshments and noon luncheon. Pre-registration is encouraged.

For more information on the March 11 program, the *Nebraska Soybean and Feed Grains Profitability Project*, or how to conduct crop-

related research on your farm, please call 800-529-8030 or visit the Web site at <http://on-farmresearch.unl.edu/>

**Keith Glewen
Extension Educator
Dave Varner
Extension Educator**

Several new herbicides enter ag market

Among this year's new herbicides, there are no new modes of action but several new premixes, new glyphosate salts and a few more generic products entering the marketplace.

Arrow 2EC is from MANA, an Israeli company and one of the world's largest manufacturers of generic active ingredients. Arrow contains clethodim and will be marketed to control Roundup-Ready volunteer corn in soybeans.

Define SC from Bayer has been reformulated into a liquid. It has the same active ingredient, flufenacet, as Define DF. The new formulation is easier to handle and allows for better mixing with products like atrazine.

Equip from Bayer contains foramsulfuron (Option) and iodosulfuron for postemergence use for corn less than 12 inches tall. It was available in late 2003 so this will be the first full year for this product. It should provide for increased broadleaf control, especially for 3- 4-inch sunflower, velvetleaf, lambsquarters, and cocklebur.

Expert from Syngenta contains metolachlor, atrazine, and glyphosate. It is labeled for pre-emergence/burndown use in corn and sorghum. It is labeled for post-emergence use in Roundup Ready corn. Typical use rate will be 3 quarts per acre, depending on soil type.

Habitat from BASF contains imazapyr (same active ingredient as in Arsenal). It is for use in aquatic environments for submerged, shoreline, and floating weeds.

IntRRo from Monsanto contains alachlor and is labeled for use in soybeans and sorghum. It contains 4 lbs per gallon of alachlor, just like Lasso and Micro-tech, so use rates will be similar.

Journey from BASF is an imazapic (same active ingredient as Plateau) plus glyphosate premix suited for site preparation in CRP, soft residual bare ground applications, seedhead suppression and warm-season roadsides. It is ex-

pected to be available in early May.

Me-Too-Lachlor and **Me-Too-Lachlor II** are generic metolachlor products from Drexel that contains metolachlor and metolachlor + safener respectively. These products are labeled for pre-emergence use in corn and do NOT have an early POST label allowing them to be applied on corn after emergence. Labeled use rates are 1.0-2.0 pints per acre, depending on soil type.

Prowl H₂O from BASF is a new encapsulated and water-based formulation of pendimethalin, labeled for use in corn and soybeans. The new formulation produces less odor, staining, and is less volatile. This product contains a higher concentration of active ingredient than Prowl EC so the use rate drops to 1.5 quarts per acre in corn and up to 3 quarts per acre in soybeans, depending on soil type.

Roundup OriginalMAX and **Roundup UltraMAX II** from Monsanto contain a potassium salt of glyphosate. These products have 4.5 lbs acid equivalent (a.e.) of glyphosate per gallon. This is the same concentration as WeatherMax so use rates of these products will typically be 11 and 22 oz per acre. Roundup OriginalMax may need additional surfactant whereas UltraMax II does not require additional surfactant.

Stalwart C and **Stalwart Xtra** are generic metolachlor products from Sipcam that contain metolachlor (Stalwart C) and metolachlor + atrazine (Stalwart Xtra). They are labeled for pre-emergence use in corn, but do NOT have an early POST label allowing application on corn after emergence. Labeled use rates for Stalwart C are 1.0-1.67 pints per acre and for Stalwart Xtra, 1.3-2.1 quarts per acre.

Starane from Dow contains fluroxypyr and is registered for use in field corn and grain sorghum. Starane controls large seeded broadleaves like kochia, cocklebur, field bindweed, hemp dogbane,

velvetleaf and sunflower.

Touchdown CF from Syngenta also contains a potassium salt of glyphosate. It is formulated to contain 4 lbs acid equivalent of glyphosate plus 0.06 lbs of dicamba per gallon. Touchdown CF is labeled for use in fallow and as a burndown, but it is not labeled for use on Roundup Ready crops. No additional surfactant is required. Registration is expected any time; however, supplies will be limited for 2004.

Touchdown Hi-Tech from Syngenta also contains a potassium salt of glyphosate. This herbicide is formulated with 5 lbs acid equivalent per gallon. It does not contain any surfactants so it must be added before application. Registration is expected at any time.

Touchdown Total from Syngenta contains a potassium salt of glyphosate and is formulated to contain 4.17 lbs acid equivalent of glyphosate per gallon. This will translate into typical use rates of 12 and 24 oz per acre. Touchdown Total uses the same adjuvant system as Touchdown with I.Q. technology.

Note on generic metolachlor products: Currently there is a legal dispute between the original manufacturer of metolachlor, Syngenta, and the generic distributors of metolachlor concerning use rates and activity. Consult the most recent product label for the correct rate.

Rosen's Inc will market their three new products in Nebraska through Tenkoz. These include: Volley, Priority and Blanket.

"Volley" brands contain the active ingredient acetochlor with or without atrazine. They are labeled for preplant, pre-emergence, and early post-emergence in corn.

Volley contains 6.4 lbs of acetochlor per gallon.

Volley ATZ contains 3 lbs of acetochlor and 2.25 lbs of atrazine per gallon.

Volley ATZ Lite contains 4 lbs of acetochlor and 1.5 lbs of atrazine per gallon.

(Continued on page 10)

New herbicides *(Continued from page 9)*

Priority is labeled for post-emergence for broadleaf weed control in all types of corn. It contains 12.5% carfentrazone (active ingredient in Aim) and 50% halosulfuron (active ingredient in Permit) per gallon.

Blanket (sulfentrazone) is labeled for pre-emergence in soybeans. Blanket contains 75% sulfentrazone (active ingredient in Authority) per pound.

Agrilience has several new products this year. The "Confidence" group of herbicides contains acetochlor with and without atrazine. They are labeled pre- and early post-emergence on corn. Use rates will be similar to Harness and Harness Xtra.

Confidence Xtra contains 4.3 lbs acetochlor + 1.7 lbs atrazine per gallon, which is the same as Harness XTRA.

Confidence contains 7 lbs acetochlor per gallon. This is the same as Harness.

Confidence XTRA 5.6 contains 3.1 lbs acetochlor + 2.5 lbs atrazine which is the same as Harness XTRA 5.6.

Avalanche for broadleaf control, especially velvetleaf in corn contains 1.9 lbs carfentrazone (same ingredient as Aim).

Brash contains 2.4-D + Dicamba for use in CRP, fallow, sorghum, pastures, and wheat.

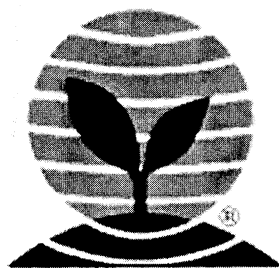
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