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And how we got where we are now

Ag marketing in the new millennium

With the conclusion of the 20th Century, agriculture in the western Cornbelt is being redefined. Several factors have contributed to this change: the 1996 Freedom to Farm Act (officially known as the FAIR Act), international currency problems, row crop and small grain prices below the cost of production since 1998 fall harvest, a proliferation of new crop genetics and related specialty grains, and growing interest in business alliances involving production agriculture.

1996 Freedom to Farm

The robust 1996 prices for both food and feed grains greased the skids for passage of the Freedom to Farm bill. Short international supplies supported aggressive buying by importing nations, and prices soared. Who needed government price and income support programs? Based on the assumption that there would be a continued strong demand for grain exports, the new farm legislation did away with set-aside acres and the acre base for feed grain and wheat, providing for greater flexibility in planting. Loan deficiency payments were the only remaining vestige of former farm programs. With loan rates at less than the cost of production, the government price and income safety net for agriculture was destined to be ineffective.

Prices below the cost of production

By harvest 1998 grain prices had declined dramatically from the highs established two years earlier. They were significantly below the cost of production and showed no signs of recovery throughout the winter and into spring planting 1999. World supplies had improved, but more importantly, world export demand had declined. A currency crisis in Japan, southeast Asia, and Russia undermined major world importing markets for food and feed grains. To make matters worse for U.S. producers, Brazil and Argentina (competing grain exporting nations) also were experiencing currency problems.
**Field updates**

Ralph Anderson, Extension educator in Buffalo County: Crops in Buffalo County are 70-90% planted. We received .6-.9 inch rain over the weekend which delayed planting a couple of days, but provided good moisture for the crops already planted and should help soften the crust on some fields. Some fields have been treated for alfalfa weevils and pea aphids.

Pastures and wheat are showing a lot of green and are mostly in good to excellent condition. This year Buffalo County growers may be in contrast to those in other areas in regard to soybean-corn ratio. If anything, we are shifting away from soybeans and back to corn although that shift may not be large. Growers here are considering a few acres of specialty soybeans if seed is available.

**Wheat disease problems few**

A recent survey by extension specialists in southeast Wyoming, northeast Colorado and the Nebraska Panhandle showed a low incidence of disease in wheat fields. The only damaging situation was a field with a high incidence of Cephalosporium stripe. This was an irrigated field that had been in continuous wheat for three years.

The most striking symptom in many fields is a yellowing caused by nutrient deficiency. Because of the low price of wheat, many farmers have reduced their input costs by reducing the amount of nitrogen applied. In general wheat stands looked good and soil moisture is adequate. Most fields showed only a low incidence of wheat streak mosaic, tan spot and Cephalosporium stripe.

John Watkins
Extension Plant Pathologist

Ralph Kulm, Extension educator in Holt County: Corn planting is nearly complete. There have been some emergence problems due to crusting, but recent rains have helped. Soybean planting is also nearly complete except on heavier soils that don't drain well. Cutworms have been found in quite a few area cornfields and alfalfa weevils are feeding and growing.

Doug Anderson, Extension educator in Valley County: After planting like crazy last week the rains slowed things down. Spotty large hail on Saturday night damaged some alfalfa, but more damage was caused to windows and windshields. Early in the week about 50% of the corn was planted.

Gary Hall, Extension educator in Phelps and Gosper counties: Corn is about 90% planted. Crusting was a problem for some fields and pivots were running to eliminate that problem. With rain over the weekend few pivots will be running. Crusting may still be a problem for some fields if it turns hot and dry this week.

Terry Gompert, Extension educator in Knox County: Three insects have been found at economic levels: alfalfa weevil, plant bugs, and potato leaf hopper. The alfalfa weevil is affecting many acres in the county. Corn planting is nearing the last week and soybean planting is underway.

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New market alternatives  (Continued from page 85)

The currency crisis might better be described as an exchange rate problem. When a nation's exchange rate drops relative to the U.S. dollar, the cost of imported goods from the U.S. increases. Likewise, when the exchange rate for a competing exporting nation falls (Argentina or Brazil), that nation becomes the preferred low cost supplier in international trade. Due to currency crises in individual countries, nations who formerly imported large quantities of grain from the United States bought less and sales shifted to competing exporting nations. All of this created problems for U.S. producers who were relying on export markets for four out of every 10 acres of production in 1996 and 1997.

Niche marketing can be a particular challenge for producers with limited experience in food marketing and management.

Price risk management

Price risk management can be accomplished in several ways, including price contracts with local elevators or grain processors, hedging in the futures market or options contracts. Grain futures contracts represent the foundation for each of these alternatives. The price level at which grain futures contracts are traded becomes all important to producers. The price level must equal the cost of production plus an acceptable profit margin to interest producers. (An argument can be made for hedging against larger losses; however, that has little practical appeal to producers who have loan deficiency payments as an alternative.) As a result of these circumstances, the level of futures prices since harvest 1998 does not afford producers acceptable forward pricing opportunities now and is not expected to during this crop year. Traditionally, informed marketers would try to time pricing opportunities to capitalize on weather-induced price surges or other related pricing opportunities. Now, even weather-induced pricing opportunities are not matching production costs for most producers. With future prices below producer costs the related alternatives of hedging, options, and price contracts with elevators and processors are rendered useless. The wisdom of conventional commodity marketing which has served informed marketers well in the past is of no help under current circumstances.

Direct (niche) marketing

Direct or niche marketing requires the producer to provide a unique product or service. This unique characteristic must represent added value to the buyer. Organically produced grains are one example of a value-added product which is direct marketed. Price premiums must match or exceed the added cost of direct marketing and any added production costs.

With this strategy, the producer is responsible for market development and a sustained marketing effort. This is a particular challenge for most producers who have limited experience in food marketing and management. Capital

More importantly, recovery of U.S. producer prices for food and food grains will require a return to more balanced exchange rates between importing and exporting nations. This will require time and cannot be solved by direct U.S. intervention. Without a sharp decline in the 1999 world crop, U.S. prices will likely remain at current levels through fall harvest 1999 and beyond.

Producer alternatives

With no government price and income safety net and prices below the cost of production for two consecutive crop seasons, producers have ample incentive to actively pursue market alternatives including:

- Price risk management
- Direct (niche) marketing

• Commercial alliances with the agribusiness industry
  -- Investor owned
  -- Producer owned
  -- Jointly investor/producer owned

The wisdom of conventional commodity marketing is of no help under current circumstances.

Direct marketing

- Value added
- Price premiums
- Independence in decision making
- More compatible with small scale production
- Specialty and designer products
- Specialized production systems
- Primary emphasis on marketing, not production
- Responsibility for market development
- Developing management and marketing expertise
- May have short life cycle
New market alternatives (Continued from page 87)

Expenditures for marketing should be anticipated and planned for. Unless the unique character of the product can be protected with patent or trademark provisions, the producer should be cautious about sharing product knowledge with others. Niche markets are typically limited in size and can be easily over supplied, eliminating price premiums. Finally, due to the limited size of most niche markets, this alternative represents a value-added solution for a limited number of producers and/or agricultural production resources.

Commercial alliances

Commercial alliances represent a product-oriented alternative to the traditional commodity emphasis of production agriculture. Commercial alliances typically involve some significant part, and in some cases the entire supply chain, for a particular product, creating a value-added dimension. Typically a commercial alliance involves a differentiated product which may be branded and supported by advertising and sales promotion. Production is managed to match market demand with resulting price and income stability in contrast to the price volatility experienced in commodity markets. Genetically modified seeds and related specialty crops have increased the agribusiness industry interest in commercial alliances. To capitalize on the unique value-added characteristics of genetically modified organisms (GMOs), it is necessary to preserve the identity of the organism at the point of production and throughout the supply chain. Identity preservation (IP) may include ownership of first handler facilities (grain elevators) or contracts with privately owned elevators to receive identity-preserved grain at the beginning of the supply chain. Marketing of identity-preserved grains adds costs in an industry which has relied on the efficiencies of bulk handling and transportation. These added marketing costs must be covered through value-added premiums. Very simply, supply chain ownership by business alliances represents contract production for agriculture.

Supply chains may be owned by investors, by producers, or by a combination of investors and producers.

Investor owned

Investor owned supply chains imply ownership by major agribusiness firms. These would include food processors and suppliers of production inputs such as conglomerate ag chemical/seed companies. These are typically companies with considerable management and marketing experience in the food industry. They have developed and own much of the GMO technology.

They can provide producers packaged programs which include production credit, production technology, price risk management, price premiums, and market access.

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New market alternatives (Continued from page 88)

for the crop. In exchange for these benefits, producers will experience less independence in decision making. Pricing decisions, production systems, and delivery obligations will be specified in a contract agreement. In an investor-owned alliance, producers will have limited ability to negotiate terms including contract price. In most cases it will be a take it or leave it proposition for the producer. Contracts may be of short duration such as one crop season. If producers are required to make capital investments, contracts often will match the repayment period of loans offered by the investor alliance.

Producer owned

The advantages of an ownership interest distinguishes producer-owned alliances from investor ownership. With an ownership interest, producers have a legitimate voice on issues such as price and participation in value added profitability. Ownership, however, clearly requires producer participation in equity financing; called risk capital. Lack of prior food marketing and management experience may be the most serious obstacle to successful producer ownership of commercial alliance supply chains. History has proven the cost of tuition for inexperience in the food industry is very high. Many other characteristics of producer owned alliances are similar to those of investor ownership.

The motivation for producer ownership clearly rests with agricultural producers. Government programs have supported a misconception of producer independence. Considerable producer leadership would be required to capture supply chain opportunities for agriculture.

Joint producer-investor owned alliances

For the reasons just cited, shared ownership by producers and investors may be the most practical solution to food supply chains. With shared ownership producers have a legitimate right to participate in value-added profit streams while investor ownership by established agribusiness interests contribute food marketing and management experience. The capital investment obligations for exclusive producer ownership of supply chains also argues in favor of jointly owned alliances.

Conclusions

Agriculture in the western Cornbelt faces major challenges in the new millennium. How many producers can survive by hunkering down until export markets return? What will be the financial condition of production agriculture? How will the agribusiness industry respond? What impact will genetically modified and specialty crops have on commodity marketing systems? How soon will identity-preserved markets dominate the grain industry? How soon will contract production be a reality in the western Cornbelt? All of these questions are reasons to begin seriously examining new market alternatives for agriculture.

Mike Turner
Extension Marketing Specialist

Aphids identified in alfalfa at economic levels

Damaging populations of aphids were reported in alfalfa fields in Fillmore and Phelps counties last week. Pea aphids and spotted alfalfa aphids are two common aphids found in Nebraska alfalfa, although normally they are not found at economic levels. Spotted alfalfa aphids are more damaging because they inject a toxin when they feed.

To sample aphids collect stems from a field and shake them into a bucket. Economic thresholds vary with aphid species and plant growth stage. If the stand is ready, harvest may be another option since it greatly reduces aphid numbers.

Many natural enemies including parasitic wasps, fungi and lady beetles often suppress aphids. If lady beetles are abundant, they may prevent economic loss from aphids. If there are 10 aphids per stem, and one or more adult or larval lady beetle per sweep, or if there are 40 aphids per stem and three or more adult or larval lady beetles per sweep, control measures are not needed.

Many insecticides can be used to control aphids on alfalfa, including Lorsban 4E, Furadan 4F, Penncap-M, malathion, dimethoate and the pyrethroid insecticides. For information on rates and restrictions, see the label or http://www.ianr.unl.edu/ianr/entomol/instals/aphids.htm

Bob Wright
Extension Entomologist
South Central REC, Clay Center

<table>
<thead>
<tr>
<th>Plant height</th>
<th>Aphids per stem</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10 inch</td>
<td>30-50 pea aphids, 10-20 spotted alfalfa aphids</td>
</tr>
<tr>
<td>10-20 inch</td>
<td>50-75 pea aphids, 20-40 spotted alfalfa aphids</td>
</tr>
<tr>
<td>&gt;20 inch</td>
<td>100 pea aphids, 40 spotted alfalfa aphids</td>
</tr>
</tbody>
</table>

Treatment thresholds for aphids in alfalfa, from Integrated Pest Management of Alfalfa Insects in the Upper Midwest, published by Iowa State University.
Canada thistle increasing in cultivated fields

Canada thistle, *Cirsium arvense*, is an aggressive perennial that has been classified as a noxious weed in Nebraska since 1873. It is estimated to infest well over 800,000 acres in northern and western Nebraska. Its extensive root system and ability to produce over 5000 seeds per plant make it difficult to control. Much like leafy spurge, nearly all parts of the root system can produce buds that eventually can form new vegetative shoots. Weed specialists in central and eastern Nebraska have reported infestations of Canada thistle on the rise, especially in cultivated fields.

Canada thistle is identified by shallow lobed leaves with short spines on the margins. Leaves are greenish on both sides, often lighter on the lower side. The flower heads are small and numerous compared to other thistles and the roots are extensive and creeping. Because the plant is dioecious (staminate and pistillate flowers found on different plants), it may be found in large patches that do not produce seed. Unlike many noxious weeds, Canada thistle quickly invades cultivated sites as well as pasture. The ability of Canada thistle to quickly adapt to various field management scenarios makes it a highly competitive weed. While many weed species produce a large amount of viable seed, Canada thistle also reproduce vegetatively, allowing staminate patches to quickly increase in size.

**Mechanical control**

Cultivation has been used to effectively improve Canada thistle control. Cultivate with an implement that will cut the thistle off about 3 to 4 inches below the soil surface. Cultivation should begin in May and continue through mid-August. When followed by a fall herbicide treatment, cultivation is highly effective. Continual cultivation will reduce root reserves, weakening the plant and making it more susceptible to herbicides.

**Chemical control**

Several herbicides can control Canada thistle. Banvel at 1 qt/A in the fall will provide 85-90% control. Better control is available with either Stinger at 1.3 pt/A or Tordon at 1-2 pt/A. Because Canada thistle is a perennial, herbicide is best applied in the fall when the plant begins translocation of nutrients from the top growth down to the roots. This allows the herbicide to be translocated to the root as well, increasing its efficacy. A herbicide application in the spring, when Canada thistle is in the bud stage, also provides good control. One application will not provide sufficient control. A good Canada thistle control program will call for spring and fall applications for two or three years.

**Biological Control**

Although biological control alone will not control Canada thistle, two European insects, *Ceutorhynchus litura* (F) and *Urophora cardui* L., have shown good activity at reducing or suppressing it. Unfortunately, these insects are not native species and have proven detrimental to native species of thistle.

The weevil *Ceutorhynchus* can spread up to five miles in a ten-year period and can infest more than 80% of Canada thistle stems, feeding within. The weevil also can feed on the underground shoots of Canada thistle, further weakening the plant. *Urophora* is a black fly that causes a large gall in stems, reducing growth and stressing the plant. These control agents alone will do little to adequately control Canada thistle. When used with other control measures, these measures will further weaken the plant, increasing susceptibility to herbicides.

**Preventive measures**

It’s unclear as to why Canada thistle infestations are increasing in cultivated fields. As more producers switch to no-till, more habitat is being created for Canada thistle. At

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Response of Canada thistle to herbicides

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate per acre</th>
<th>Percent control 1 year after treatment with summer and fall application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banvel</td>
<td>1 qt</td>
<td>81</td>
</tr>
<tr>
<td>Banvel + 2,4D</td>
<td>1 qt + 1 qt</td>
<td>54</td>
</tr>
<tr>
<td>Roundup Ultra</td>
<td>2 qt</td>
<td>20</td>
</tr>
<tr>
<td>Stinger</td>
<td>0.3 pt</td>
<td>45</td>
</tr>
<tr>
<td>Stinger</td>
<td>0.6 pt</td>
<td>75</td>
</tr>
<tr>
<td>Stinger</td>
<td>1.3 pt</td>
<td>90</td>
</tr>
<tr>
<td>Tordon*</td>
<td>0.5 pt</td>
<td>93</td>
</tr>
<tr>
<td>Tordon*</td>
<td>1 pt</td>
<td>93</td>
</tr>
<tr>
<td>Tordon*</td>
<td>2 pt</td>
<td>91</td>
</tr>
</tbody>
</table>

*Not labeled for use in row crops

From *Canada Thistle*, University of Nebraska NebGuide G80-509.
Weeds compete with crops for light, water and available soil nutrients. The outcome will depend on environmental variables and a) weed species composition within a given field, b) weed density and c) time of weed emergence relative to the crop growth stage. Timing of weed removal is critical, especially with the widespread use of herbicide-tolerant crops.

**Weed species diversity** within a field depends on many factors including tillage practice, cropping system and herbicide selection. For example, annual species are predominant in conventional tilled fields while annual, biennial and perennial weeds are found in reduced and no-till fields.

**Weed density** also has a profound impact on weed-crop competition. At low weed densities, there is mostly competition between the weed and the crop (inter-specific competition) while at higher densities, competition among weeds also becomes evident (intra-specific competition). The result of this competition is reduced crop and weed biomass.

**Time of weed emergence** relative to the crop growth stage is also very important to the outcome of competition. Weeds that emerge before the crop become established faster and make better use of limited resources. Field studies have shown that crop yield loss is very sensitive to the period between crop and weed emergence. One study in corn showed that a redroot pigweed reduced yield by 40% when it emerged at the third and fifth leaf stage of corn while redroot pigweed plants that emerged at the seventh leaf stage caused no yield loss. Similar results were found in sorghum. In soybeans, pigweed species that emerged with the crop caused 30% yield loss while pigweed that emerged at the second trifoliolate caused only a 5% yield loss (Dieleman et al. 1995).

What these studies imply is that accurate dates of weed emergence are required for reliable forecast of crop yield losses. In addition, understanding this relationship can help you decide whether weed control is economically worthwhile. This also lends credit to the rational behind the concept of a critical period of weed control.

The **critical period of weed control** is a time in the crop growth cycle when weeds must be controlled to prevent yield loss. Knowing this period is essential in determining the need for and timing of weed control, especially when using non-residual herbicides and achieving efficient use of herbicides. This critical period is different for each crop. For example, dryland corn should be kept weed-free from the third to the tenth leaf stage to keep yield loss less than 5%. This is approximately from day 12 to day 40 of corn growth. Similarly, in soybeans this weed-free period is from the second trifoliolate to the beginning pod. This is approximately from day 10 to day 40 of soybean growth. Although these studies were not conducted in Nebraska, they are a valuable reference for weed management decisions.

There are limitations to this concept. Applicability is likely in fields with annual weed species only. The critical period is influenced by several factors, including:

- a) crop characteristics (density, growth rate, crop establishment, row spacing, etc.);
- b) weed species composition, emergence date, density, and competitive ability; and
- c) environmental variables (water, soil type, etc.).

Of course these parameters assume that the crop and weed emerge together. If the weeds emerge before or after the crop, these critical periods will be different, altering the timing of postemergence applications for a given crop.

**Herbicide resistant crops** have received enormous acceptance in this state. The critical period of weed control is even more important with these crops. Although many producers agree that herbicide-resistant crops have made weed management much easier, it is still important to include the fundamental components of integrated weed management. The basic components of if and when to apply postemergence herbicides are very much a part of this technology. There also may be a case for less reliance on residual herbicides or at least less reliance on full rates of residual herbicides when followed by Roundup. In tilled fields, using tillage as a part of your postemergence weed control strategy also will enhance weed control during this period. Another strategy which requires knowing the critical control periods for a crop is to use a postemergence herbicide such as Roundup tank mixed with a residual herbicide, providing weed control throughout the entire critical period.

The use of a critical period of weed control based on crop leaf stage makes weed control a function of biological necessity, not of availability of a relatively cheap herbicide, especially in the cropping systems with herbicide resistant crops. It should be clear that herbicide resistant crops allow the producer the flexibility to make postemergence applications with little regard to the crop growth stage. This allows greater attention to weed density and weed growth stage parameters for a more timely postemergence application. In actuality, the strategy is not as important as the timing of that strategy.

Stevan Knezevic
Extension Weed Specialist
Alex Martin
Extension Weed Specialist
Jeff Rawlinson
Extension Weed Science
Begin scouting for stalk borers in June

The stalk borer life cycle begins in the fall when moths lay their eggs on grassy plants and ragweed. Often these are in fence rows, grass waterways or terraces bordering crop fields. These eggs hatch in late April or early May and larvae bore into the grasses or other weeds such as ragweed and begin feeding. As the stalk borers grow or if the plants are mowed or burned down with herbicides, they move into adjacent corn plants to complete their development.

Common stalk borers are rather distinctive in appearance, with three white stripes on a background brownish-purple coloration. The two stripes on the side stop just behind the three pairs of true legs, then continue about half-way down the length of the caterpillar. Feeding damage by stalk borers may kill the growing point if the caterpillar bores into the base of the stalk, or may produce ragged feeding holes in the leaves, if feeding starts in the whorl and then moves down into the stalk.

We have accumulated 800-1100 degree-days (base 41°F) since Jan. 1 (see map). Based on research at Iowa State University, stalk borer egg hatch begins at about 575 degree days and should be complete by 750 degree days. Scout corn for common stalk borers when about 1,300-1400 degree days have accumulated. Updated degree day maps will be published in future Crop Watch issues.

Check corn plants bordering grassy areas to determine the percentage of plants with live stalk borers. Use the table to determine the economic threshold. In cases where stalk borers begin feeding on grassy weeds, or other vegetation in field edges, control is most effective if timed between 1400 and 1700 degree-days (base 41°F), which corresponds to first half of the period that stalk borers are migrating from weedy hosts into corn. If the infestation is restricted to the field margin, use a border treatment. Ambush 2E (6.4-12.8 oz per acre), Asana XL (5.8-9.6 oz per acre), Lorsban 4E (2-3 pints per acre), Pounce 3.2EC (4-8 oz per acre) or Warrior 1EC (2.56-3.84 oz per acre) are labeled for use against stalk borer on corn.

Bob Wright
Extension Entomologist
South Central REC, Clay Center

Correction

In the April 23 Crop Watch, in a story titled “How do soybean costs stack up with new weed control options”, the costs listed for Roundup in the worksheet are inaccurate. In Case 1, the cost for 3 pints is $13.50; the listed costs are $49.73 and the net over seed and weed control cost is $200.27. In Case 2, the cost for 4 pints is $18, the listed costs are $56.31 and the net over seed and weed control cost is $193.69.

Stalk borer economic thresholds (from Iowa State University). Assumes $13 per acre control costs and 80% control by an insecticide.

<table>
<thead>
<tr>
<th>Corn leaf stage</th>
<th>Percent infested plants at two corn prices</th>
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<tbody>
<tr>
<td></td>
<td>$2/bu</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
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<tr>
<td>2</td>
<td>12</td>
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<td>3</td>
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<td>5</td>
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<tr>
<td>6</td>
<td>34</td>
</tr>
<tr>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>
Crop report

(State crop report as of Monday)

Corn planting moved quickly to 71% complete, behind 93% last year and 77% average. Emergence was at 18%, well behind 43% last year and 28% average.

Soybeans moved slowly to 12% planted, behind 46% in 1998 and 25% average. Sorghum planting was 5% complete, compared to 26% last year and 14% average.

Winter wheat condition again moved higher and rated 1% very poor, 1% poor, 14% fair, 74% good and 10% excellent. Wheat jointed was at 88%, ahead of 69% last year, and 70% average. Heading was underway on 2% of the acreage, compared to 1% last year and 2% average.

Oats emerged was at 95%, just ahead of 93% last year. Oat conditions rated above year ago levels at10% fair, 69% good and 21% excellent.

 Alfalfa conditions rated 1% poor, 11% fair, 63% good and 25% excellent.

Precipitation record

Kansas wheat

Disease pressure in the winter wheat crop has increased and in some fields was considered moderate to high.

Wheat streak mosaic was at some of the highest level seen in many years in some central and west central Kansas fields. The warm fall weather provided ideal conditions for the dissemination of wheat curl mites, the disease vector. Incidences of 50%-80% were observed in numerous fields in eastern Kansas.

Kansas Department of Agriculture
Division of Plant Protection

Canada thistle

(Continued from page 91)

the same time, producers may be relaxing their prevention measures. Prevention still remains the best control method. Reduce contamination by:

1) not allowing contaminated equipment to enter non-infested fields before being cleaned;
2) using equipment in clean fields first, then contaminated fields;
3) not bringing livestock into clean fields after grazing contaminated sites and
4) using extensive control measures swiftly when small infestations first appear.

Clearly Canada thistle is not a problem that will go away easily. A single control strategy will not provide adequate control. The best scenario is to integrate several control strategies. This will include chemical, mechanical and possibly biological control measures applied at the correct time. Control of Canada thistle should be viewed as a long-term management goal.

Jeff Rawlinson
Extension Technologist

Alex Martin
Extension Weed Specialist

Nebraska Agricultural Statistics Service
Nebraska’s first hard white wheat available soon

Nuplains, Nebraska’s first hard white wheat variety, is scheduled to be available to certified seed growers this fall and farmers for planting in fall 2000.

Nebraska-grown white wheat has the potential to join a growing market for tortillas, pita breads and Asian noodles, said Robert Graybosch, a research geneticist with the U.S. Department of Agriculture’s Agricultural Research Service at the University of Nebraska. ARS scientists teamed with NU wheat breeders and the Nebraska Wheat Board to develop white wheat for Nebraska.

Nuplains is just the first of several Nebraska white wheat varieties, predicts Steve Baenziger, NU wheat breeder who will assume responsibility for Nebraska’s white wheat development in the next three to four years.

In 1998 Nebraska produced 84.6 million bushels of wheat, half of which were exported, Baenziger said. Asia imports 400 million bushels of white wheat from Australia and other countries. Nebraska wheat promoters hope to tap this growing market.

Nuplains is a cross between Abilene, a hard red winter wheat, and a Kansas experimental hard wheat. Wheat varieties are bred to grow in a particular climate and to resist that area’s insects and diseases. Kansas cultivars, for example, aren’t winter-hardy enough for Nebraska.

Right now few if any premiums exist for white wheat. However, Nebraska wheat growers may need to adapt if they wish to remain competitive, Graybosch added.

The differences between white and red wheats are in the genes, explains Drew Lyon, NU dryland crops specialist at the Panhandle Research and Extension Center. White wheat has no major genes for color. The gene that gives red wheat its color also contains tannins, which cause bitterness. The absence of bitter tannins in white wheats mean millers can mill the grain closer to the hull, ultimately getting more flour and using less sugar in the product.

The U.S. milling and baking industry also is interested in using more white wheat. For example, NU’s Institute of Agriculture and Natural Resources Nebraska Wheat Quality Laboratory evaluates new wheat lines for their end uses, including wet Asian noodles.

Red and white wheats have many similarities — seeding dates and rates, fertilization, harvest, yields and test weights. They must not be mixed, however, or the value of the white wheat will decrease. Until commercial facilities are dedicated to white wheat storage, Lyon noted, some producers may need to store it on the farm.

Keeping the two wheats separate is so important that planning needs to begin this year if white wheat is to be planted in fall 2000, Baenziger said. To ensure a pure grade of white wheat, a completely different crop, such as alfalfa, must be planted where the first crop of white wheat will be. That eliminates any possibility of volunteer red wheat mixing with white wheat.

Hard white wheat has the potential to grow especially well in the Panhandle because of western Nebraska’s dry climate. A drier climate helps prevent seeds sprouting in the wheat head if harvest is delayed. Sprouting also occasionally occurs in red wheat, Baenziger noted.

Sprouting devalues wheat, Baenziger said, because enzyme levels increase, and test weight and flour quality decrease. All cause the wheat’s flour to lose its ability to make good bread and noodles.

IANR scientists have worked with the Nebraska Wheat Board to plant about six acres of hard white wheat near Sidney, Neb. Barring unforeseen circumstances, grain from these plots will be harvested this summer and sold to certified seed producers this fall. They will plant and harvest it for sale to producers in fall 2000. The Nebraska Wheat Board and the USDA help fund NU’s wheat breeding and development program in cooperation with IANR’s Agricultural Research Division.

By Cheryl Alberts
IANR News Service

Alfalfa weevil scouting

Reports continue of weevil activity throughout the alfalfa production areas of the state. See previous newsletters for treatment recommendations. (Map prepared by Al Dutcher, State Climatologist, UNL Agricultural Meteorology.)