

ing that the salt/phosphate and BPI treatments were USDA Select strip loins, and therefore probably had less marbling than the other three treatments, especially the USDA Prime. Nonetheless, BPI-enhanced steaks rated substantially higher in flavor than all other treatments.

Eye of round steaks rated lower than strip loin steaks for all treatments. BPI-enhanced and PACCP eye of rounds rated the highest for "overall like."

Note that the product cost of these treatments would differ substantially, with PACCP and USDA Prime considerably more expensive than the other three treatments. Of the lower-cost treatments, BPI-treated steaks clearly resulted in higher consumer ratings than salt/phosphate and U.S. average steaks, though the cost for the BPI product should compare favorably to the two because it was USDA Select with 20 percent added water. Despite the lower cost, the BPI product resulted in customer satisfaction equal to or greater than the high-priced PACCP and USDA Prime.

*By Duane Wulf, Tanya Koger, Kurtis Sweeter and Robert Maddock, South Dakota State University*

## Plants for Late Season Bloom

We normally think of woody plants flowering in the spring or early summer, but there are some that flower later in the growing season. These can add color to summer landscapes.

Rose of Sharon (*Hibiscus syriacus*) is a tall shrub that produces single or double flowers in the colors ranging from white to red, purple or violet or combinations, depending on the variety.

Crapemyrtle (*Lagerstroemia indica*) are dwarf to tall shrubs or trees. They are not reliably winter hardy and often die back to the ground. It has been a number of years since we have had a severe enough winter in the area to kill back the crapemyrtle. Some plants are now more than 8 feet tall.

Crapemyrtle flowers on new wood so plants pruned (or killed) to the ground while dormant in late winter or early spring will bloom later the same year. Flower color varies from white, pink, purple to deep red on different plants.

*Caryopteris x clandonensis* is known as bluebeard, blue-spirea, blue-mist shrub or caryopteris. It usually is found with blue flowers, but some cultivars have a bluish-violet to violet flower color. Plants are usually cut back in late winter or early spring. Flowers are borne on the current season's growth.

Sweet Autumn clematis (*Clematis paniculata* or *maximowicziana*) is a vigorous vine with large masses of small, white flowers, which have a wonderful fragrance. Be careful with this one; it can easily outgrow its bounds. It is often a good idea to cut it back to the ground in early spring.

*Davidiana clematis* (*Clematis heracleifolia* var. *Davidiana*) is a bush-type clematis with small but interesting violet blue flowers. Female plants bear interesting fluffy seed heads into the winter. This clematis needs to be cut back to the ground each year to help maintain the shape of the plant.

The PeeGee hydrangea (*Hydrangea paniculata* *Grandiflora*) is a somewhat coarse plant that develops large clusters of white flowers. It can be trained into a tree-like form.

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# AG NEWS

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## National ID Process Remains Muddled

Anyone hoping for answers and clarity at last week's ID/InfoExpo -- a de facto national forum for discussing and developing the national ID system -- surely walked away disappointed. Though USDA Secretary Mike Johanns was on the docket and took questions from the crowd, his answers remained vague and non-committal.

For example, Johanns repeatedly dodged questions about whether USDA's intent was to make and maintain NAIS as a voluntary or mandatory program. He stressed it's a voluntary program today and believes a voluntary program is preferable. Yet USDA's NAIS Implementation Plan ([animalid.aphis.usda.gov/nais](http://animalid.aphis.usda.gov/nais)) issued in April states in black and white that adopting mandatory regulations is a contingency plan for producer participation.

Johanns also demurs from questions aimed at assessing what level of voluntary participation is required for effective animal-health trace-back.

Similarly, Johanns will not provide an answer about the system's cost, other than alluding to the \$83 million USDA has already poured into it. One reason may be no such estimate exists, despite repeated requests from the industry for a cost-benefit analysis.

In a separate one-on-one interview, Chief Veterinary Officer, John Clifford, was more specific, implying producers will be responsible for purchasing and applying NAIS tags. He pointed out no state is currently charging producers to register their premises with NAIS, which is a prerequisite to obtaining official NAIS tags.

On the issue of money, there was no public mention of the General Accounting Office's current investigation of NAIS at the behest of a U.S. Senator. Nor was any mention made of the fact there remains some question about whether the \$33 million in federal dollars earmarked for NAIS next year will be frozen until specific answers are provided to Congress, as was stipulated in one of the appropriations bills awaiting conferencing.

Other key questions still unanswered:

**Who guarantees confidentiality?** For obvious reasons, producers are unlikely to provide any NAIS data if they believe it could be accessed by anyone other than state and federal animal-health officials. Johanns said, "I agree with livestock producers who believe information about your livestock is your business, period."

Again, in a separate interview, Clifford was more specific. He explains USDA has protected producer info from prying eyes and the Freedom of Information Act via the Privacy Act. However, state animal-health officials and others continue to emphasize the need for legislation at both levels aimed at protecting NAIS data specifically.

**What about working group recommendations?** Each livestock species devised its own working group to make NAIS recommendations to the Secretary of Ag. Those from the Cattle Industry Working Group were submitted months ago and have yet to receive approval or denial from USDA. That means anything beyond premises registration remains speculation. In turn, that means few producers are likely to begin tagging cattle with NAIS tags until species-specific recommendations are adopted.

**Is it all for all and one for all?** Cattle and swine are more advanced in NAIS development than any of the others. Some other species are just getting started, while others continue to dig their feet in against elements of the program. It's difficult to imagine cattle producers embracing a program like NAIS if other species are allowed to sit on the sidelines.

**Do you know what you're talking about?** The cooperative effort between the livestock industry and the state and federal animal-health officials charged with protecting those industries emphasized the need for a national system for animal health purposes. Yet Johanns continues to harp on his belief the market will drive NAIS adoption, that there are already economic incentives in the domestic and international markets to provide ID.

It's true that in isolated circumstances a few producers are able to command a higher price for source verification or other process verification tied to ID. Even if the economic incentives were high and widespread, NAIS isn't about those things. It's about the nation's ability to better protect its livestock industry, period.

Perhaps the most positive outcome of the meeting was a public display of the livestock industry's ongoing resolve to develop and implement a national animal ID system for the purpose of protecting the nation's livestock. In an informal survey of the 600 meeting participants, 78% believe such a system is so imperative to protecting the livestock industry that it should be made mandatory.

## Should You Consider Using an Insecticide Seed Treatment for Wheat?

Tom A. Royer, Extension Entomologist

I have shared results of our seed treatment evaluations (Gaucho, Cruiser) in wheat and sorghum at several grower meetings over the past few years, and I am sometimes asked my opinion as to whether a producer “should use an insecticide seed treatment?” Their biggest concern is “getting their moneys worth” in yield protection to cover the added expense of using these products. My answer to that question is the always frustrating “it depends” because seed treatments are not for everyone. The research results from my evaluations indicate that a seed treatment can “pay for itself” under some circumstances, but will probably not in others. I believe that by answering the following questions, a producer can more easily make a correct decision as to whether a seed treatment would be a cost effective choice.

Q 1: Is your wheat field under no-till or conservation tillage?

Yes No (Go to Question 4)

Q 2: Is your wheat field in a continuous wheat rotation?

Yes No (Go to Question 4)

Q 3: Will you plant a HF-susceptible varieties such as Jagger, Jagalene or Overly? Yes No



If you answered yes to all of these questions, you should consider using an insecticide seed treatment. In fact, you should consider a seed treatment even if your field is located next to a field grown under these conditions. Why? Because of the threat from Hessian fly. When I came to OSU in 1997, I was surprised to discover that Hessian fly was not a problem here, since the predominant rotation was continuous wheat and it was planted very early. The only reason that I could come up with for the lack of Hessian fly problems was that nearly all of the fields were clean tilled several weeks to a month before planting, which probably destroyed any over summering pupa. During the past few years, there has been a renewed interest in conservation tillage among Oklahoma producers, especially because increased fuel prices provide a strong incentive to try and reduce “trips across the field”. Unfortunately, Oklahoma producers have limited choices of winter crops to rotate with their wheat, so a common rotation is continuous wheat. In the last two years, I have seen more and more wheat fields that were damaged by Hessian fly. The factors common among those fields are that the fields were in continuous wheat rotations, planted early with a Hessian fly –susceptible variety, and produced under no-till or conservation tillage.

Last fall, I collected wheat plants from several fields in north-central Oklahoma that illustrate the importance of some management strategies that can be used for Hessian fly.

**Table 1: Hessian fly infestation levels in several wheat fields in Kay County Oklahoma, 2005.**

Field No.	Tillage	Crop Rotation	Plant Date*	Seed Treatment**	Plants Infested	Tillers Infested
1	NoTill	Continuous Wheat	Early	No	61%	41%
2	NoTill	Continuous Wheat	Early	Yes	0%	0%
3	NoTill	Continuous Wheat	Early	No	89%	40%
4	Clean Till	Continuous Wheat	Early	No	22%	5%
5	NT Close***	Corn/Wheat	Early	No	94%	51%
6	NT Far	Corn/Wheat	Early	No	33%	10%
6	No Till	Corn/Wheat	Late	No	0%	0%

\* Early = planted in early to mid September, Late = planted in mid October

\*\* Seed treated with Gaucho or Cruiser

\*\*\* NT Close = Sample was taken next to a field of wheat stubble from a neighboring field, NT Far = Sample was collected ½ mile from the neighboring wheat stubble

Here is another set of questions to consider if you are using clean tillage methods.

Q 4: When do you plant your wheat?

August-September—1 point October—0 points

Q 5: Will you be harvesting the wheat for grain (even if it is being grazed)? Yes—1 point No—0 points

Discussion: If your answers to questions 4 and 5 add up to 2 points, you could consider a seed treatment. In essence, wheat planted early that will be harvested for grain is more likely to benefit from a seed treatment. Why? Because aphids, especially bird cherry oat aphids are more likely to infest wheat that is planted early. Dr. Kris Giles and I evaluated seed treatments in Lahoma and Perkins for two years in which we looked at aphid control and resulting yields. In addition, Dr. Bob Hunger has looked at seed treatments for control of aphids and barley yellow dwarf virus. The results of these studies suggest that a producer is most likely to benefit from using a seed treatment when: (a) a low rate is used, (b) there is a need to protect grain yield, and (c) there is a greater likelihood that aphids will infest the wheat. Aphid infestations are more likely to occur if a producer is planting wheat in early to mid-September. Late planting (early to mid-October) will reduce the threat of an aphid infestation. So, wheat that is planted in early to mid- September and will be harvested for grain it is more vulnerable to yield loss caused by aphids, regardless if it is going to be grazed. The following table illustrates the results of our work at Lahoma and Perkins:

**Tables 2a-b. Average Return over Untreated Control from using Gaucho for Aphid Control, 1997-1999**

2A: Insecticide Rates Combined		2B: Planting Dates Combined	
Date of Planting	Average Return \$/Acre	Rate of Application (oz/acre)	Average Return \$/Acre
Early	-\$6.49	0.75 oz	+\$1.58
Middle	+\$9.21	1.50 oz	\$0.00
Late	-\$1.99	3.00 oz	-\$6.27



These data show that wheat planted in mid-September are more likely to benefit from aphid protection provided by a seed treatment, and that using a lower rate will provide more consistent returns.

A final reminder: if you are targeting Hessian fly, make sure that you use correct rate that is labeled specifically for Hessian fly. Insecticide rates are higher for Hessian fly control than for aphid control. There are other things to consider when making a decision to use seed treatments (such as insecticide/fungicide combinations to control bunts and smuts). For more information related to the use of seed treatments to control bunts and smuts of wheat, see Vol. 5, No.17 of the Plant Disease & Insect Advisory at <http://entopl.okstate.edu/Pddl/advisory.htm>

## Beef Palatability Issues

Palatability is the key to any successful meat manufacturing enterprise. Indeed, study after study shows that if a meat product fails to please in the areas of tenderness, taste and mouth feel, consumers won't purchase it, regardless of the product's grade, marbling and lean-to-fat ratio, as well as any real or perceived health benefits the product confers.

The good news is that processors today have a number of methods at their disposal to enhance the palatability of beef, including phosphates and similar ingredients. Some processors and producers employ so-called Palatability Assurance Critical Control Points (PACCP) to ensure superior eating quality. Question is, which, if any, methods are most effective?

With that in mind, Dakota Dunes, S.D.-based beef processor and product supplier BPI Technology Inc. commissioned the agriculture department of South Dakota State University to perform an independent study comparing five steak treatments on the basis of their flavor and tenderness attributes as well as their contribution to consumers' "overall liking" of the product. To do so, researchers assembled a consumer panel in accordance with standards set by the American Meat Science Association. The panel was comprised of male and female adults from all age groups and income brackets. The common denominator was that all were regular steak eaters, albeit in varying degrees.

Five treatments sampled involving two cuts — strip loin and eye of round — the five treatments the panel sampled included:

- *Average U.S. retail beef:* Strip loin and eye of round steaks purchased at 16 retail stores in four U.S. cities
- *PACCP beef:* Product produced under a total quality management-type system monitoring all aspects of beef production from genetics through carcass handling
- *USDA Prime beef:* Certified Angus Beef USDA Prime boxed subprimal obtained through Tyson Foods
- *Salt/phosphate-enhanced beef:* Whole USDA Select strip loins and eye of rounds enhanced with a solution of water, phosphate and salt *BPI-enhanced beef:* Whole Select eye of rounds enhanced with ammonia hydroxide using a patented technology

Materials and methods *steak treatments:* The experimental design consisted of five treatments — average U.S. retail beef, PACCP beef, USDA Prime beef, salt/phosphate-enhanced beef and BPI-enhanced beef — and two cuts, strip loin and eye of round. No "vein" strip steaks were used, and steaks from all treatments were frozen until consumer testing was performed. *Average U.S. retail beef:* Strip loin and eye of round steaks were purchased in four cities representing the eastern, southern, western and northern regions of the United States, and from four different chains in

each city for a total of 16 retailers. All steaks were selected randomly, albeit for the fact that no "enhance" and "vein" strip steaks were selected. The selection process collectively yielded many different grades and brands of beef.

*PACCP beef:* Beef was produced under a total quality management system encompassing all aspects of beef production, from genetics to carcass handling. The so-called Palatability Assurance Critical Control Points (PACCP) system used in this study included 13 CCPs, including genetic inputs, feeding, handling and management, and post-harvest carcass and meat management, to ensure superior eating quality. Both heifers and steers were used, and there was no sorting, selecting or culling of animals or carcasses based on specifications or grades.

*USDA Prime beef:* Certified Angus Beef USDA boxed subprimals sourced from Tyson Foods and aged for a minimum of 14 days before being frozen.

*Salt/phosphate-enhanced beef:* USDA Select strip loins were cut in half, with one half enhanced by injecting a solution of water, phosphate and salt, and the other reserved for alternative treatment described below. Whole Select eye of rounds likewise were enhanced by injecting a solution of water, phosphate and salt, with the injection targeting a 10 percent pump formulated for 0.4 percent sodium tripolyphosphate and 0.3 percent salt. Actual pump percentages were 11.6 percent for the strip loins and 10.5 percent for the eye of rounds. The USDA Select beef was sourced as boxed beef from Tyson Foods and enhanced 14 to 18 days after slaughter.

*BPI-enhanced beef:* The other half of the aforementioned strip loins were enhanced with ammonia hydroxide using BPI's patented technology. Whole USDA Select eye of rounds also were enhanced using the BPI process. Actual pump percentages were 17.6 percent for the strip loins and 21.1 percent for the eye of rounds. The USDA Select beef again was sourced as boxed beef from Tyson Foods and enhanced 13 to 17 days after slaughter.

*Panels:* Consumer panels were conducted in accordance with standards set by the American Meat Science Association. Some 204 consumers, all age 23 or older, participated in the study on 11 different occasions. Steaks were cooked on gas grills and turned every 2.5 minutes to a target internal temperature of 150 degrees F. Steaks subsequently were cut into 1.0-by-0.5-in. samples, placed in styrofoam bowls, covered in aluminum foil and held in a 140 degree F warming oven until served. Panelists each were served in booths in order to prevent interaction, and under red lighting to mitigate differences in product appearance. One sample of each treatment was served in random order to panelists, and samples were coded with a random code to blind consumers to treatment combinations.

Results Among strip steaks, BPI-enhanced, PACCP and USDA rated the highest for "overall like." Numerically, BPI-enhanced steaks rated the highest of all treatments, although there was not a statistically significant difference between the "overall like" ratings for BPI-enhanced, PACCP and USDA Prime samples.

For "like of tenderness," the order from best to worst was PACCP, followed by BPI, USDA prime, average and salt/phosphate.

For "Like of Flavor," the order from best to worst was BPI, salt/phosphate, USDA Prime, PACCP and U.S. average. Consumers especially liked the flavor of BPI-enhanced steaks. It's worth not-