

# Hand-held units tell farmers nitrogen needs in wheat fields

By Amanda Jones

A new and improved hand-held GreenSeeker is available for wheat farmers interested in improving the nitrogen efficiency of their fields.

"Hand-held units have been commercially available to the private sector since July 2002," said Robert Mullen, senior research specialist at Oklahoma State University. "Thirty units were initially ordered and should be delivered within the next two weeks."

Realizing the need for improved nitrogen use in wheat fields, researchers at Oklahoma State University developed the GreenSeeker technology. The GreenSeeker hand-held is the product of more than 10 years of research at the university. The hand-held unit contains a sensor capable of identifying the amount of nitrogen needed in individual fields.

Currently, researchers are working on extending the versatility of the hand-held GreenSeeker. They are making alterations that would enable the technology to work on other cereal crops.

Scientists working on the project foresee the technology becoming popular in mid-Western markets as more wheat producers become aware of the advantages of efficient nitrogen

application. Mullen said the technology could move into the international segment after the Wheatbelt market develops.

GreenSeeker is manufactured by N-Tech Industries Inc. Recently, the company opened a facility in Stillwater, Okla. The new location will enable the company to work closely with the Oklahoma State University researchers.

The hand-held GreenSeeker optically senses plants' nutrient requirements and determines the variable amount of nitrogen needed. The sensor looks at the health of the plant and makes fertilizing decisions. It can identify wheat stands even in the dark. The sensor can detect differences at 15 mph. These advantages will increase the accuracy of fertilizer distribution.

"If the hand-held actually works, I may be interested," said Gary Leach, a northwest Kansas wheat farmer. "I don't want to apply any more nitrogen than is necessary."

The hand-held sensor will have a dual effect on production; it will both decrease input costs and increase output dividends. Fertilizing fields is a major cost for farmers and an increase in efficiency may prove beneficial, said Mr. Leach.

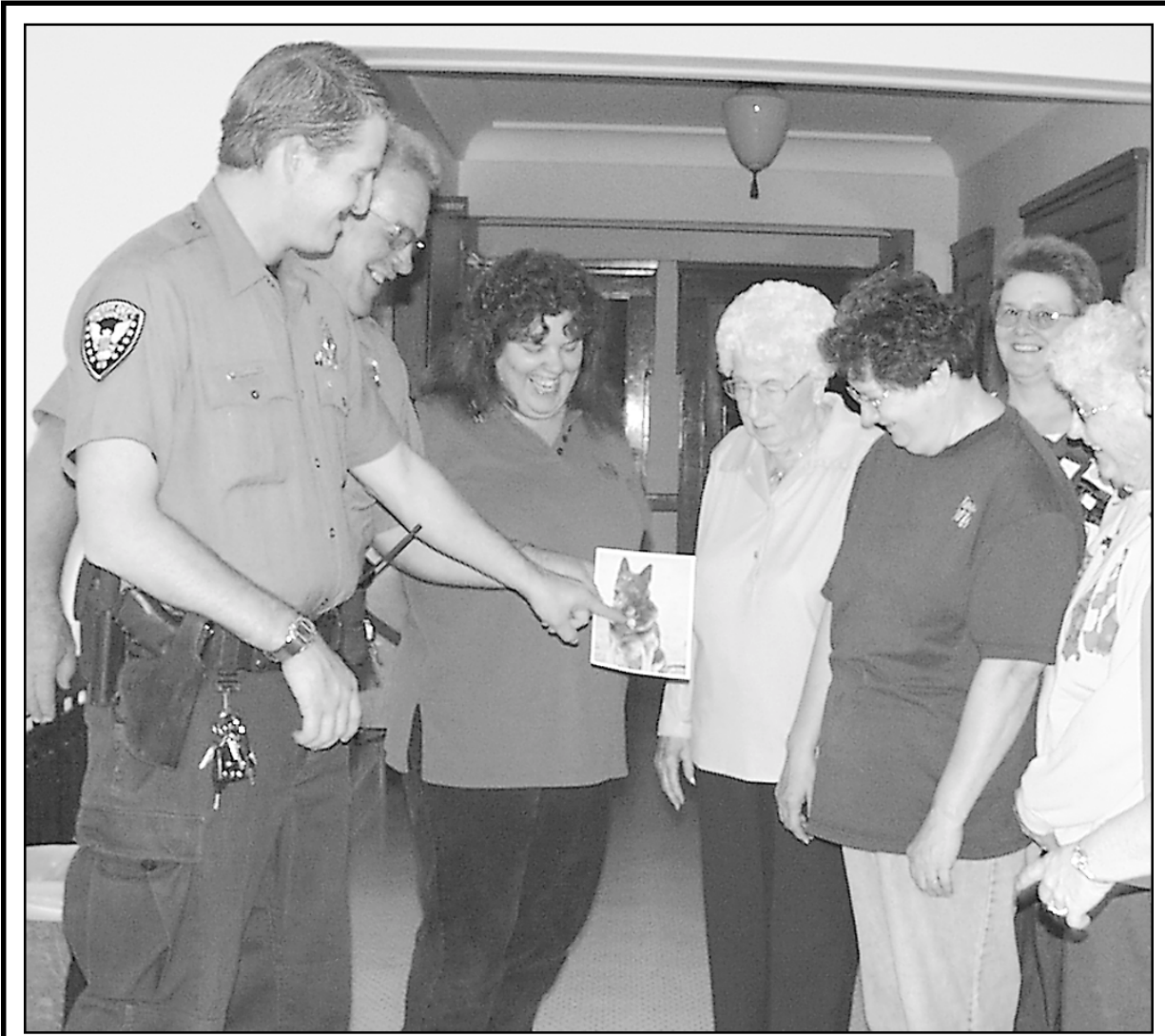
"The biggest problem facing the marketing of GreenSeeker is that farmers do not understand how the technology works," said Mr. Mullen. "They must be shown how they can make money by using this technology."

The cost effectiveness of the hand-held unit may ultimately determine its popularity with wheat farmers. Jim Stiegler, the department head of plant and soil sciences, said hand-held units are being sold for between \$3,000 and \$4,000.

"My first concern would be whether purchasing it would be an economically justifiable investment," said Mr. Leach. "Sometimes the wheat market cannot justify the expense that comes with new technologies."

In an effort to increase the use of GreenSeeker, university researchers are actively educating the public through demonstrations and public relations activities. The department of plant and soil sciences conducts field studies and publishes its findings in an effort to persuade those involved in the wheat industry.

"To lots of producers, this seems like just smoke and mirrors," said Stiegler. "Seeing is believing; we may have to do a lot of demonstrations before people are ready to accept the technology."



REBEKAH LODGE members presented the sheriffs office, Cliff Flock and Eddie Dankenbring, with a \$100 check to help purchase a drug dog.

Herald staff photo by Karen Krien

## Facts about breast cancer

### Demographics

Being female: 192,000 women will be diagnosed with breast cancer by the end of this year, and about 40,600 will die from the disease. Although men can get breast cancer, this is extremely rare.

Age: Breast cancer is extremely rare in women younger than 20 and is very rare in women under 30. The incidence of breast cancer rises with age and becomes significant by age 50.

Women's lifetime breast cancer risk: by age 30, one in 2,525; by age 40: one in 217; by age 50, one in 50; by age 60, one in 24; by age 70, one in 14; by age 80, one in 10.

Being of Ashkenazi Jewish Descent: increased prevalence of the genetic mutations BRCA 1 and BRCA2 that promote breast and other cancers are found in Ashkenazi Jews. In general, only approximately 8 percent of breast cancers are attributable to this type of inherited factor.

Ethnicity and race: White Non-Hispanic women have the highest incidence rate for breast cancer among the following US racial/ethnic groups, and Korean women have the lowest. African American women have the highest mortality rate for breast cancer among these same groups (31 per 100,000), while Chinese women have the lowest at 11 per 100,000.

### Hormonal Factors

The following factors are important as they relate to the effect of hormones on the breast. These factors increase breast cancer risk due to the role of ovarian hormones in breast development.

Ovarian hormones initiate breast development, and subsequent monthly menstrual cycles induce normal breast cell growth, known medically as "proliferation." Breast cells are not fully developed or "differentiated," however, until they are able to lactate or produce milk. Until breast cells are fully mature as lactating cells, they are more susceptible to changes that can promote breast cancer. Factors that promote cell proliferation (e.g. hormones) or alter the genetic material required for proliferation (e.g. radiation) can cause cancerous changes.

Age of menarche (onset of menstruation): Early menarche has consistently been shown to be associated with

increased risk for breast cancer. The more menstrual cycles a woman has, the more exposure to hormonal influences she experiences, increasing her risk for breast cancer as explained above.

Age of first full-term pregnancy: Women who haven't had children are at increased risk compared to childbearing women. The risk is more evident for women 40 and over. (The proliferation of breast tissue during the first pregnancy results in breast tissue becoming fully mature, thus less at risk for cancer).

Lactation: Breast cancer rates are lower in populations in which breastfeeding is common and long in duration. Again, breast cells capable of lactating are cells that have fully matured or differentiated. This mature state confers a lower risk of breast cancer.

Age of menopause: Women who enter menopause later have had more exposure to the hormones estrogen and progesterone, consequently they are at a higher risk for breast cancer.

### Personal History

Personal history of breast lesion: Such breast lesions are diagnosed as lobular or ductal "Atypical Hyperplasia," and may predispose a woman to breast cancer.

Radiation exposure, primarily to the chest: Radiation can mutate DNA and cause breast cancer.

### Personal history of breast cancer.

Family history of breast cancer: A family history of breast cancer or other cancers found in association with breast cancer (colon, brain, ovarian, etc.) can increase a woman's risk for breast cancer. It is important to know which family members were diagnosed with what type of cancer at what age.

### Lifestyle

Birth control pills and hormone replacement therapy: Numerous studies have been conducted and it seems there is some increased risk of oral contraceptive pills and hormone replacement therapy causing breast cancer. Recently,

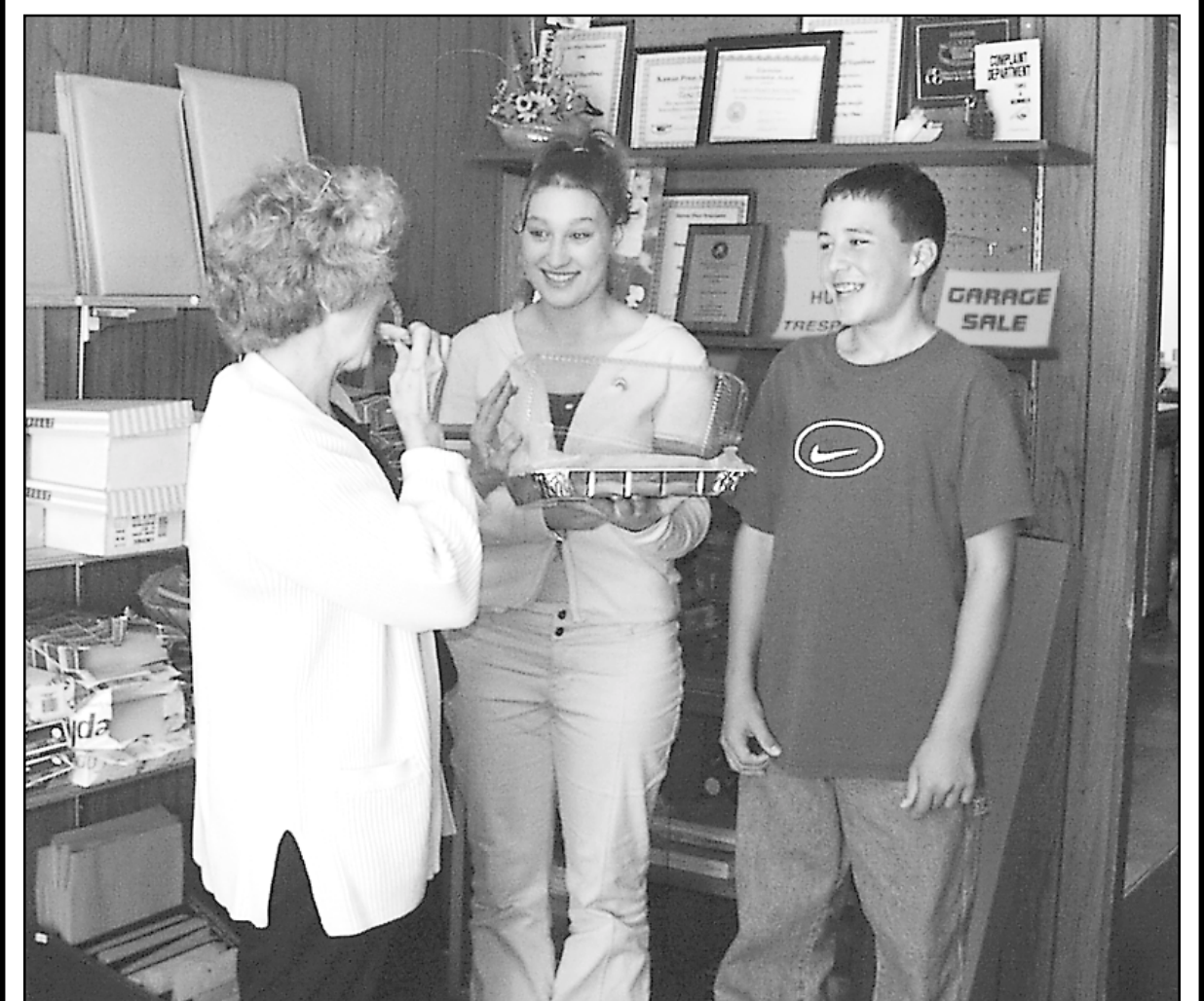
at the Third European Breast Cancer Conference, a study reported that women who use oral contraceptive pills, especially after age 45, are at greater risk of developing breast cancer compared to women who haven't used the pills.

According to the National Cancer Institute, there is also concern that hormone replacement therapy somewhat increases the risk of breast cancer. Studies show that compared to women who didn't take estrogen only replacement therapy, there was a 10 percent increase in breast cancer risk for each 5 years of use. For women who took hormone replacement therapy in a sequential manner (three weeks of estrogen followed by a week of progesterone) their risk increased to 38 percent for every 5 years of use. Randomized, double-blind, placebo controlled studies need to be conducted. In fact, the Women's Health Initiative study will help us answer this question in respect to Hormone Replacement Therapy and information shall be forthcoming in approximately 2005.

Weight: Weight gain after age 18 is associated with an increased risk of post-menopausal breast cancer.

Physical inactivity: Indirect evidence exists indicating that there is an inverse relationship between amount of physical activity levels and one's risk of breast cancer. The NCI reports that 2/3 of research demonstrates an inverse relationship of physical activity to breast cancer. The decrease risk is approximately 30 percent on average!

Alcohol consumption: The relationship between alcohol and breast cancer is consistent among associations of dietary factors and breast cancer risks, and is likely related to alcohol's (beer, wine and liquor) ability to increase estrogen levels. Most doctors recommend no more than seven alcoholic beverages per week for women.



KAREN KRIEN enjoys a cookie Amber and Travis Havel of Plum Creek 4-H Club delivered to the Herald office as a thank you.

Herald staff photo by Betty Jean Winston

## St. Francis News

Coy and Neva DeGood returned home Oct. 22 from an extended bus tour including visiting Tulsa, Okla.; Little Rock, Ark.; Casey Jones Village in Jackson, Tenn.; Nashville, Tenn. and the Old Grand Ole Opry (tour); Gaylord Opryland Hotel and Resort (tour); televised Grand Ole Opry Show in the new building; Dollywood and Craft Fair in Pigeon Forge, Tenn.; the Great Smoky Mountain National Park in North Carolina and Tennessee; programs and Craft Fair at Gatlinburg, Tenn.; two days at Branson, Mo., and the last stop was at Carthage, Mo.; for Precious Moments Chapel and Musical Show, Fountain of Angles. The fall colors were great but they liked the colors along the Reupbican River at St. Francis better.

day or Sunday. Miles plays on the Kansas City Blaze soccer team, which is a fourth grade team. With 14 teams in his division the Blaze went home with the first place plaque.

Friday she made a short stop in Ellsworth to visit Dan and Cindy Winton, Jean and J.J. and on Sunday night she was an overnight guest at their home, returning to St. Francis early Monday.

Milton and Betty Lampe traveled to Hays on Saturday, Oct. 26 to help their grandson, Kyle Grizzell, celebrate his

16th birthday. They met at his brother, Travis Grizzell's apartment. Kirk and Debbie Grizzell, Kyle, Austin Koett and Byron Austin, all of Macksville and Cheryl Apel of Hays joined them.

The boys enjoyed riding their bicycles on the campus, swimming, shopping and eating at Applebee's.

The group returned to the apartment for an ice cream cake and to open gifts.

Weekend guests of Billy and Karen Krien and Bill and Leone Krien were Todd Krien, Celeste, Texas, and Marilyn Krien of Aurora, Colo.

## DOWNTOWN repair & auto sales

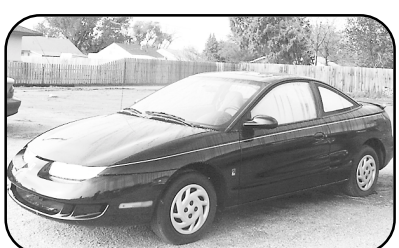
If we don't have it — We'll Find It For You!



'99 GMC Extended Cab - 4x4, White, 70,000 miles.



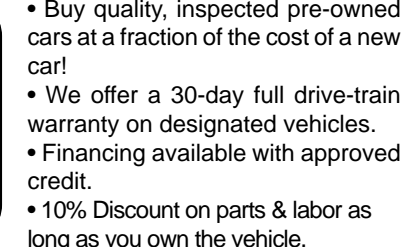
'98 Chevy Camaro - Teal Green, 72,000 miles.



'99 SL1 Saturn - 2-door, Black, 11,000 miles, (Extra Nice!)



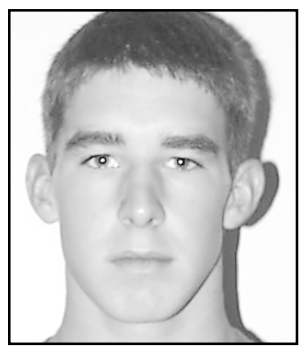
'96 Pontiac Formula Firebird WS6 - White, 68,000 miles.



'94 Chevy Extended Cab - 4x4, Black, Great Truck at a Fraction of the Cost of New!

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