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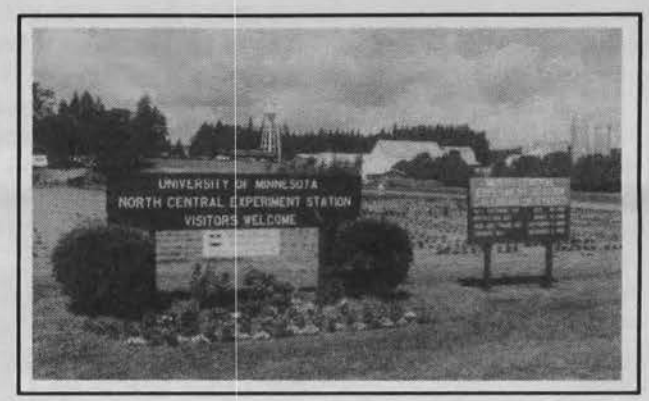
Horticulture Visitors Day - August 27

David K. Wildung, Horticulturist



The annual Horticulture Visitors Day will be held on August 27. Walking and riding tours begin at 2:00 pm and tour groups will leave for the plots until 6:00 pm.

The 1997 growing season has been unusual in many ways, starting with the cool spring and late development of perennial plants. The month of June was warmer than average leading to good early development and growth of vegetables and flowers when adequate watering was available. On June 22 the Grand Rapids area was over 3.5 inches below average for rainfall. As I write this (July 14) we are over 2 inches above average rainfall, having received over 8.5 inches since June 22. These conditions, coupled with record cool temperatures on July 6 and 7 have made the 1997 growing season a real challenge!

Despite the challenging growing season, there will be many exciting things for growers and gardeners to see on Visitors Day. Research studies with small fruits have occupied a lot of our resources the past year. With the release of two new blueberry cultivars (Polaris and Chippewa) and two new strawberry cultivars (Winona and Mesabi) exciting opportunities are available for small fruit growers. Correlation of spring flowering bulb stages to soil temperatures has provided a better system for strawberry mulch removal to maximize fruit production. An exciting new LCMR Grant (begun July 1) will enable us to look at some alternative weed control systems to reduce herbicide use with strawberries. Visitors will see the effects of corn gluten meal (a by-product of ethanol production), flame weed burning and angora goat renovation and weeding on strawberries. All of these studies are in their initial stages. New Junebearing and day neutral strawberry plantings were established this spring. While the blueberry harvest will be completed by August 27, fruit production will be very heavy this season and we will learn much about promising blueberry breeding lines for future introduction.

Flower plots always have many interesting things to see and the 1997 planting is no exception. New Guinea Impatiens are featured with several drought and heat tolerant selections from the U of MN breeding program. The 1997 and 1998 All America Selections are in the planting which include a double rose impatiens and a yellow petunia cultivar. In addition to many other cultivars, Pink Wave petunia, the new companion to Purple Wave, is in the 1997 planting. Several of the U of MN Maxi-Mum chrysanthemums which will be named and released over the next few years will again be in our 1997 planting. These selections were outstanding in our 1996 trials. In addition, the three newest chrysanthemum cultivars will be featured: Betty Lou, Inca and Snowscape. The annual flowers should be at their peak, on August 27.

Carrots are the primary vegetable crop in our 1997 plots. Separate carrot studies are evaluating fresh market carrots, baby carrots with first harvest about 60 days after planting, and comparisons of carrots grown on raised beds and normal culture. In addition, broccoli is being grown at spacings ranging from 4 inches apart to 20 inches apart to determine the effects that close spacing has on head size and particularly stalk diameter which can become too thick and woody at wide spacings. Visitors will also see colored pepper trials, tomato trials (featuring several new excellent early-mid season large fruited cultivars), pumpkin, sweet corn and onion trials. Much of the vegetable work is supported by seed company donations and the carrot research is supported by a grant received by the Agricultural Utilization Research Institute (AURI)

While you are always invited and welcome to visit our horticulture plots during the growing season, August 27 is the day set aside as the annual tour day. University of Minnesota research and extension specialists and Master Gardeners will be available to answer questions and explain the research. Active gardeners, rural-city people and commercial producers will all enjoy the day. If you have questions about Horticulture Day contact our office (218/327-4490). I hope to see many of you on August 27.

Diseases of Cultivated Wild Rice

Robert F. Nyvall, Plant Pathologist

A healthy cultivated wild rice field.

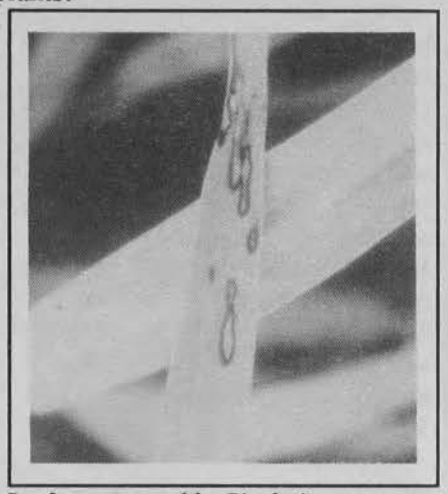
One of the major causes of yield reduction in cultivated wild rice is plant diseases. Since wild rice has been grown domestically, the disease fungal brown spot has reduced yields annually from a trace to a hundred percent in some fields. The primary means of disease management, until the present time has been the use of expensive fungicides. If a means could be found to economically manage the disease, farmers who use fungicides could potentially realize a savings of 25 to 30 dollars per acre. Additionally, the loss of yield as a result of disease damage would be minimized.

We have been working on determining the life cycle of the causal organism, *Bipolaris oryzae* for the past few years. This is laborious and time consuming work that frequently leads to a dead end. What seemed like a good idea often turns out not to have any merit after several months of research. However, during the course of our research we inadvertently discovered several other aspects of the disease and passed these on to growers. Although we were not always sure what was happening, the implementation of our results appeared to partially manage the disease. It now appears we are close to understanding where the causal organism overwinter. The significance of this is a grower may then be able to reduce the amount of inoculum that infects the wild rice plant and subsequently reduce the disease by utilizing common agronomic practices. The benefit is to reduce or eliminate the disease and save the expense of applying fungicide.

Our first assumption was the fungi overwinter as saprophytes on grasses on the dikes. However, Andi Moffit, a graduate student who has helped work on this problem for two years, has demonstrated that grasses are rarely or never a factor in the overwintering of the causal fungi. During this time Andi has not isolated the fungi from dike grasses and has only been able to inoculate grasses under atypical conditions.

It appears the fungi survive as saprophytes on residue but only under special conditions. Fungi in residue that is submerged under water for even a short time do not survive. However, not all fields are flooded and our evidence suggests that *B. oryzae* survives in a few scattered locations in theses nonflooded or fallow fields. The fungus is then carried from the fallow fields to the flooded fields by wind as an example. A means of managing the disease would be to flood even fallow fields for a short period of time or to insure that all residue is completely buried. This is often difficult to do.

Other factors also contribute to the management of the disease, particularly proper fertility. On the basis of preliminary research, we have determined that plants that are well fertilized sustain far less disease injury than improperly fertilized plants.



Leaf spots caused by Bipolaris oryzae on cultivated wild rice.

In summary it appears that our research will enable the wild rice growers of northern Minnesota to manage the most destructive disease of cultivated wild rice. However, our research has also shown there are other potentially destructive diseases of wild rice. At this time we are uncertain of the amount of injury that is caused. However, in order to sustain a healthy cultivated wild rice industry in Minnesota, the management of these diseases will be an ongoing task.

I would like to thank the Minnesota Cultivated Wild Rice Growers whose cooperation made our research possible; specifically Rod Skoe, Don Barrons, Ross Rennemo and Tom Godward. I would also like to thank AURI for financial support of this research and Laura Wagner for her technical work.

Wild Rice Research Field Day - North Central Experiment Station

Thursday - July 31, 1997 - 9:00 a.m. to 11:00 a.m.

Breeding-Raymie Porter (•Population Improvement •Breeding Nursery & Inbred Line Development •Increase of Franklin for Re-release •Screening for Disease Resistance •Genetics Studies •Testing of Nondormant Lines •Root System Correlations with Electrical Capacitance) **Molecular Genetics-Wayne Kennard, Ron Phillips** (•Comparative Mapping •Pistillate Gene Markers •Nondormancy Backcrosses) **Agronomy-Erv Oelke, Ray Kirsch** (•Plant Population & Fertility Interaction •Effects of Simulated Hail Damage) **Soil Science-Paul Bloom, Deepa deAlwis** (•Soil Nitrogen •Soil Potassium •Zinc and Copper) **Plant Pathology-Bob Nyvall, Jim Percich, Andi Moffit** (•Survey of Plant Diseases in Growers' Paddies •Bipolaris Survival and Spread •New Fungicide? •Nutrition-Disease Interaction) **Biology-Qin Qin Liu** (•Transition Zone Studies •Long x Short Panicle Crosses •Other Flowering Biology Studies)

Upcoming Forage and Beef/Forage Field Days

August 5, 1997 **NORTHEAST MINNESOTA FORAGE and GRASSLAND COUNCIL SUMMER TOUR - Mike & Martha Lentz Farm, Swatara MN**

Featuring MN Dept of Ag Sustainable Farming Project

10:00 am Registration

10:30 Welcome

•Sustainable Agriculture Grant Study •Kura Clover •Grazing Alfalfa

12:30 Lunch and Exhibits

1:30 pm •Fencing Systems •Watering Options • Incentive Programs - Agency Reps.

4:00 Adjourn

Directions to the tour: U.S. Hwy 169 to Hill City, MN; west on Hwy 200 approximately 6 miles to Aitkin County 289 (Swatara Rd); turn left (south), proceed 2 miles to intersection with Aitkin County 657; turn right (west), proceed approximately 3 miles to P.O. Box 6351 - the Lentz Farm.

If you have further questions, please call 218/697-8214.

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September 3, 1997 **BEEF/FORAGE DAY at the University of Minnesota Beef/Forage Research Farm, Located 4 miles south of Grand Rapids on Hwy 169, then 1/4 mile east on Harris Town Road (Co. Rd. 64)**

10:00 am Registration

Topics of Discussion: •Red clover varieties •Intensive rotational grazing research •Pasture weed control •Fencing and watering systems •Alfalfa leaf meal research

(Lunch provided at Noon)

2:00 pm Adjourn

If you have further questions, please call 218/327-4490

State-wide Tourism Research Funding Fails

Dan Erkkila, Extension Educator - Tourism & Travel

Funding for the state's first research agenda crafted to meet the needs of the tourism industry moved quickly though the Minnesota legislature in February, but failed to get hearings before Senate and House finance committees. The bills would have appropriated $875,000 in fiscal year 1998 to research the needs of the tourism and travel industry in Minnesota by:

(a) studying consumer behavior and how visitors make travel decisions in order to identify ways to increase visits to the state;
(b) assessing community capacity to deliver tourism products and services;
(c) identifying laws, rules, and regulations that may burden tourism and travel business operation and growth;
(d) studying technology and its impact and role in tourism;
(e) studying marketing techniques for the tourism and travel industry; and
(f) studying environmentally oriented, nature-based tourism.

On the House-side, the bill was quickly assigned to, and unanimously passed out of the Commerce, Tourism and Consumer Affairs policy committee. Committee chair and lead author of the bill, Kris Hasskamp (DFL-Crosby), praised the initiative as a needed step for enhancing the tourism industry in the state. Finance committee hearings in the House and Senate never materialized, however. Last minute attempts to salvage $50,000 in an omnibus funding bill for tourism research failed.

The Minnesota Office of Tourism and the University's Tourism Center worked with the state's tourism and travel industry since early 1996 to develop a research agenda focusing on critical gaps in the level of understanding of the tourism and travel industry. Without precedence, the agenda involved more than a dozen of the leading industry organizations. The broad lack of support for funding tourism research suggests the challenge that lay ahead for the industry. Legislators and economic development officials will need a better understanding of the role research plays in new tourism product development and as a foundation for building effective marketing strategies for this $8 billion industry.

News from North Central

David L. Rabas, Station Head

The 1997 growing season has started out as a repeat of last year. The dry cool spring has been followed by a hot and wet summer. June was over six degrees warmer than normal, the fourth warmest June on record according to Art Elling, weather recorder at the USDA North Central Forest Experiment Station. June, 1995 set the record with an average temperature almost eight degrees above normal. With luck we will get a warm August and a late first frost to allow full season crops like tomatoes and corn to mature.

July will be a busy month at the North Central Experiment Station. July 19 marks the date for the All-Class and Employee Reunion. Tom Carpenter and his committee have arranged for an exciting day for former alumni, faculty and employees of the North Central School of Agriculture. The full day of tours, station visits and other activities is followed by an evening banquet and entertainment. This issue of ***The Quarterly*** is being put together before the reunion. We will put some reunion pictures and news in the fall issue. On Monday, July 21, following the alumni reunion, new University of Minnesota President Mark Yudof will visit our campus. We are looking forward to an opportunity to visit with President Yudof and share some of the exciting things that are happening at NCES.

Our annual Wild Rice Research Field Day will be held July 31, followed by Horticulture Visitors Day on August 27, and Beef/Forage Field Day on September 3. Please accept my invitation to join us on any of these important days as we share our research results with you—our customers.

Congratulations to Faye Mostoller-Executive Secretary, Bruce MacGregor-Junior Scientist in wild rice research, and Howard Hoganson-Forestry Professor. Faye was recognized for 20 years of continuous service to NCES at a Civil Service Recognition Luncheon in Minneapolis on June 18. Bruce was recognized for five years of service and Howard for ten years at our NCES quarterly staff meeting on July 14. We wish them many more rewarding and productive years at NCES.

The three weeks of rain in late June and July created serious hay making problems. We ended up with more poor quality hay than we would like. The rain did, however, provide good growing conditions and we look forward to a more successful second crop. In spite of the rain most of our research crops, with the exception of small grains, look very good and we anticipate a very successful crop research season.

Computer users should be able to contact our station and our research staff on our NCES Home Page by the end of August. Our address will be www.nces.agri.umn.edu/ The home page will provide a list of current research interests of our scientists as well as e-mail addresses and other information to help us better serve our customers.

The research budget situation at NCES can be described as difficult—at a minimum! We need to continue to seek additional gift and grant funds to maintain our research programs. This fall we will be initiating a campaign to raise funds to support our horticulture research program. I hope all of our readers and friends of North Central will help make our horticulture research campaign a success.

We are looking forward to the possibility of adding additional office, conference room and meeting room space to our Administration Building. Those of you who have visited the building will know that it is a tri-level building with only the lobby and two laboratories accessible without going down or up one or more flights of stairs. We are discussing the possibility of adding an addition to the east of our existing Administration Building to provide greater access to our facilities, staff and programs. We are considering the possibility of incorporating new communications technology and distance learning/teaching opportunities into our new facility. How soon this will happen depends on favorable legislative support and demonstrated need. We look forward to the possibility of being better able to serve all our customers. As we move into the twenty-first century we are preparing to meet the challenge of changing roles and responsibilities for our experiment station and other university programs and facilities which serve our state and community.

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