



By: Gary Lesoing, Nemaha County Extension Educator

CALENDAR OF EVENTS

July 10	Palmer Amaranth Field Day 8:30 a.m.-1:00 p.m. Carlton, NE
July 11-14	Nemaha County Fair Nemaha County Fair Grounds Auburn, NE
July 18 & 19	Good Farmers to Great Managers Lancaster County Extension Office Lincoln NE
	Soybean Management Field Days 9:00 a.m.-2:30 p.m.
August 15	Boekner Farm near Plymouth, NE
August 16	Neujahr Farm near Waverly, NE
August 22, 27 & 28	Crop Management Diagnostic Clinics ENREC Near Mead, NE
August 23- September 2	Nebraska State Fair Grand Island, NE
September 6	Southeast NE Diversified Ag Tour
September 10-12	Husker Harvest Days Grand Island, NE

weeds in soybean fields. Greenhouse dose-response studies have confirmed glyphosate-resistant Palmer amaranth in Nebraska. Field experiments will demonstrate how to control resistant Palmer amaranth in field and seed corn production fields in Nebraska.

There will be on-site demonstration of projects at the field day. Demonstration include:

- How row spacing and herbicide programs can affect glyphosate-resistant Palmer amaranth control in Roundup Ready 2 Xtend Soybean.
- Management of Palmer amaranth in Alite 27 Soybean (resistant to isoxaflutole/glyphosate/glufosinate) and Enlist E3 Soybean (resistant to 2,4-D choline/glyphosate/glufosinate)
- Critical period of Palmer amaranth removal affected by residual herbicides in Roundup Ready 2 Xtend Soybean.

The keynote speaker is: DR. JASON NORSEWORTHY is a professor and the endowed Chair of Weed Science at the University of Arkansas. He grew up on a vegetable farm in southern Arkansas, where he quickly learned the need for weed management in crops. He has documented eight herbicide-resistant weeds in Arkansas, including glyphosate-resistant Palmer amaranth. He has been invited nationally and internationally to present his research on palmer amaranth. He presently serves as the Editor of Weed Technology, a journal of the Weed Science Society of America that publishes applied weed science research.

This program is **FREE TO ATTEND**, but registration is required at <https://agronomy.unl.edu/palmer> . Three CCA Credits are available. For more information contact: Amit Jhala - Nebraska Extension Weed Management Specialist at 402-472-1534 or Amit.Jhala@unl.edu or Gary Lesoing at 402-274-4755 or glesoing2@unl.edu .

GLYPHOSATE-RESISTANT PALMER AMARANTH MANAGEMENT FIELD DAY SCHEDULED FOR JULY 10

Nebraska Extension and the Nebraska Soybean Board are sponsoring a glyphosate-resistant palmer amaranth management field day on Wednesday, July 10th from 8:30 a.m. – 1:00 p.m. at Carlton, NE. At this field day there are on-site demonstrations of projects for control of Glyphosate-Resistant Palmer amaranth in soybean.

Palmer amaranth, a member of the pigweed (Amaranthaceae) family, is one of the most troublesome

GOOD FARMER TO GREAT MANAGER

The difference between a good farmer and a great manager often comes down to knowing the true financial position of a farm. Good records make it possible to track an operation's true financial position. Inaccurate records can lead to misguided management decisions. "Good Farmer to Great Manager" record-keeping

classes will teach farmers and ranchers to keep accurate records for their operations. This class will be held at the Lancaster County Extension Office (444 Cherycreek Rd in Lincoln, NE) on July 18th and 19th. Each class will run from 1 p.m. until 5 p.m. the first day, and 8 a.m. until noon the second day. The course fee is \$50 per participant; class size is limited to 25 people per location.

You can register at: <https://www.regonline.com/goodfarmertogreatmanager>. Visit the event website for additional information. Additional Public Info: <https://wia.unl.edu/GFGM>. This program will also be held at Bridgeport, July 25–26 at the Prairie Winds Community Center (428 N Main St) and Grand Island, July 30–31 at the Hall County Extension Office (3180 US-34).

The article below comes from Extension Beef Systems Specialist Mary Drewnoski and Extension Forage and Crop Residue Specialist Daren Redfearn which was recently published in BeefWatch. With the recent change to September 1st for the date producers can either graze or harvest cover crops on Prevented Plant Acres, this information becomes more valuable.

ANNUAL FORAGE OPTIONS FOR JULY OR AUGUST PLANTINGS

Mary Drewnoski, Nebraska Extension Beef Systems Specialist and Daren Redfearn, Nebraska Extension Forage and Crop Residue Specialist

If planting in July, warm season annual grasses are good options for forage production. They can be used to produce hay, silage, green chop, or grazing both during the summer or winter. However, if the desired use is winter grazing and the need is for high quality forage, then delaying planting till August and using cool-season winter sensitive species like oats may be a better fit. This article provides information on species selection and some key management considerations based on desired use.

Hay Production

When planted in early July, sorghum-sudangrasses can produce 3 to 4 tons by early-mid September where pearl millet will likely produce 2 to 3 tons per acre, although there are improved varieties of pearl millet that can produce similar forage yields. Drying may take 3 to 5 days for sorghum-sudangrass since it has large stems. Using a hay conditioner to crush the stems will increase the rate of drying. Pearl millet has slightly smaller stems. This may speed the drying rate, but a hay conditioner is still needed. If making hay, a higher seeding rate may help to reduce stem size. Forage quality of the hay depends on the stage of maturity at harvest. A good balance between yield and quality is to cut sorghum-sudangrass or pearl

millet hay during the boot stage. Forage quality can range from 55 to 65% total digestible nutrients (TDN) and 6 to 10% crude protein when the plant is between the dough and boot stage.

Foxtail millet hay yield potential is less than sorghum-sudangrass or pearl millet. Typical hay yields range from 1.5 to 2.5 tons/acre, but it is also earlier maturing and dries quickly. Seed cost is also usually less for foxtail millet.

Silage Production

While both sorghum-sudangrass and pearl millet can be used for silage, forage sorghum may be a better option due to its greater yield potential with expected yields of 4 to 6 tons of dry matter (DM) (11 to 17 tons at 35% DM). The energy content of sorghum silage can be 60 to 65% TDN with a crude protein content of 7 to 8%. A good target is to harvest at soft dough, especially if you do not have the ability to process the kernel. It may be necessary to swath and then chop to get the correct moisture (30 to 35%).

Grazing During the Summer and Fall

Sudangrass (not the hybrid) may be best suited for grazing. Sudangrass usually has less yield potential than sorghum-sudangrass. It has smaller stems and will regrow after the initial grazing, resulting in equal or better yields in a grazing situation. Sudangrass also has less risk of prussic acid poisoning than sorghum-sudan. Pearl millet can also be used for grazing, and unlike sudangrass and sorghum-sudangrass, it does not produce prussic acid which means that it can be grazed during the initial frost period. To avoid prussic acid poisoning when grazing sudangrass or sorghum-sudan, cattle should be removed prior to the first frost and can be allowed to start grazing again 7 days after the killing frost. Grazing can begin when sudangrass and pearl millet reach 15 to 20 inches in height, but cattle should be moved when stubble height reaches 6 to 8 inches to allow for regrowth. Do not start grazing sudangrass before it reaches 15 inches as there is a risk of prussic acid poisoning. If the growth is greater than 36 inches tall, harvesting as hay, or silage may be best since grazing cattle will trample the forage and result in both waste and slow regrowth. Thus, if the goal is for late summer grazing it may be advantageous to delay planting until mid to late July to ensure that the plants are at the desired stage for grazing.

Grazing During the Winter

High yield, but lower quality winter grazing. If the target animals are non-lactating, spring calving cows, then forage quality does not need to be high. In this situation, planting a forage with increased forage yield potential is a good option. Sorghum-sudangrass and pearl millet planted in mid-July, would have TDN from 50 to 55% and crude protein of 6 to 8% in the early winter. These forages are sensitive to cold temperatures and will usually die due to frost in early October.

Both sorghum-sudangrass and pearl millet can grow up to

5 to 6 feet tall. When grazing as stockpiled forages, managing forage allocation will greatly improve grazing utilization. In fact, windrow grazing or swath grazing is worth considering. Windrow or swath grazing makes forage allocation for grazing these tall forages much easier and reduces waste. Essentially, this system involves cutting the forage and gathering it into a windrow or swath, which is then strip grazed. The Nebguide "Windrow Grazing" provides strategies and benefits of using this method.

These high yielding warm season forages could also be used with supplementation to meet the needs of animals with higher protein and energy requirements. Pairing these forages with distillers grains in the winter can provide a cost effective winter method for developing heifers or fall pairs.

The Nebguide Summer Annual Forage Grasses provides a lot of detailed information on using these warm season annuals for forages, including seeding rates, fertilization and other special considerations.

You can add additional species to increase diversity of the mixture that address other goals like building soil health. However, the grasses dominate when planted at recommended seeding rates and outcompete most other species that are planted with them. The seeding rates of the grasses should be reduced to allow for better growth of the other species, but this will also likely result in reduced forage yield.

Lower yield, but higher quality winter grazing. For moderate to high quality winter grazing, the cool-season, winter sensitive forages like oats, spring triticale and forage brassicas are good forage options. These species will have greater fall forage production than winter hardy species, such as cereal rye or winter triticale. The target planting date for cool-season winter sensitive forages is from late July through August. If planting oats or spring triticale in early August, there is likely a forage quality advantage with the "forage" varieties since they are later maturing. This may allow for greater quality than mid or early maturing varieties. If planting in mid- to late-August, there is likely little quality advantage to using forage varieties over dual-purpose or "grain" type small cereals.

Brassicas can be planted with winter sensitive small grains for grazing. While there are forage varieties, use of non-improved varieties such as purple top turnip or rapeseed may be the most cost effective. Nutritive value of brassicas, when planted in August, does not appear to vary much among brassica species. The brassicas are low in fiber and high in both energy and crude protein, with nutritive value more similar to concentrates than forages.

In general, brassicas and small grains both maintain their quality well into the winter. Given their cost, either purple top turnip or rapeseed, can reduce seed cost compared to a small grain monoculture while simultaneously improving feeding value of the forage. Recent

studies from UNL have shown oat brassica mixtures to have TDN levels in the 70 to 80% range with losses less than 5% into January. Crude protein of the brassicas is typically around 20 to 25% and oats 15 to 20% crude protein. Some have concerns about cattle choking on the root (bulb) of purple top turnips. Using a non-bulb brassica like rapeseed may be more attractive in this instance.

Forage quality of late-summer planted small grain forages with or without brassicas is high and best suited to the requirements of lactating cows or growing calves. While there are many combinations of seeding mixtures, a mixture of 50 lbs/acre of oats with 3 lbs/acre of rapeseed has produced forage yields similar to oats alone but slightly greater gains when grazing weaned calves. Weaned calves grazing stockpiled oats and brassicas have gained between 1.5 and 2.2 lbs/d.

Interviews with the authors of BeefWatch newsletter articles become available throughout the month of publication and are accessible at <https://go.unl.edu/podcast>.

SOYBEAN MANAGEMENT FIELD DAYS SET FOR AUGUST 15 NEAR PLYMOUTH & AUGUST 16 NEAR WAVERLY

Plan to attend one of the 2019 Soybean Management Field Days sponsored by the Nebraska Soybean Board and Nebraska Extension. This year we have two of the four scheduled field days within a reasonable distance for soybean producers in southeast Nebraska. On August 15th a field day is scheduled for the Ross and Jud Boekner Farm near Plymouth and on August 16th a field day is scheduled for the Lynn Neujahr Farm near Waverly.

At these sites there will be demonstration plots, lunch and time for questions. Producers can obtain ideas and insight about the challenges they face in producing a quality crop at a profitable price in today's global economy. Free registration is available the day of the event. The program begins with registration at 9:00 a.m., followed by four 1 hour presentations from 9:30 a.m. – 2:30 p.m.

Learn how to profitably apply the products of technology and research at the farm level. This educational event is for you - the soybean grower and agronomic representatives supporting the soybean industry. Experts will share their knowledge and experiences as they relate to soybean production, marketing and management. Specific topics of discussion include: Making Sense of Production Costs and Policy Changes, Soybean Insects & Cover Crops, Hail Damage Impact on Growth & Development of Soybeans, Management of Cover Crops & Soybean Insects and

Pathogens, Soybean Weed Control & Cover Crops, Cover Crop - Pros & Cons Associated with Soybean Production, Soybean Production & Agronomic Topics Associated with Cover Crops – Planting Rates, Row Spacing, Planting Dates, Maturity Groups, Irrigation Management.

This is an excellent opportunity to learn about the latest advances and strategies for soybean production and marketing. By participating in the Soybean Management Field Days, you will see your checkoff dollars at work bringing leading technology and ideas to you, the soybean producers. If you have questions about this field day you can contact me at (402) 274-4755. A link to more specific information and directions to the field days can be found at: <https://go.unl.edu/2019smfd>.

2019 CROP MANAGEMENT DIAGNOSTIC CLINICS

Soil Health - August 22: Healthy plants start with healthy soil. Hands-on learning for those who work with crops, turf, gardens and more. Topics to be addressed include: management considerations to improve soil health; measuring bulk density, porosity and infiltration and the impact on soil health; the importance of physical soil properties on soil health; cover crops and how they impact soil health; soil biology and what you can do to change it; soil characteristics, productivity and landscape position; and chemical soil properties. CCA Credits Available.

Nebraska Extension's August 27 Midwest Soybean Production Clinic and August 28 Midwest Corn Production Clinic will provide an in-field opportunity for participants to work with crops in the early vegetative stages of growth through maturity. According to Keith Glewen, Nebraska Extension Educator, the training sessions provide an opportunity for participants to see a growing season in one place. He says, "Agribusiness professionals and crop producers will take a close-up look at field conditions, research and techniques at the University of Nebraska's Crop Management Diagnostic Clinics. The clinics provide opportunities for hands-on interaction." CCA credits available. Information on pricing will be posted soon.

Participants will meet at the August N. Christenson Research and Education Building at the University's Eastern Nebraska Research and Extension Center (formerly the Agricultural Research and Development Center) near Mead, Nebraska.

For more information or to register, contact the Nebraska Extension CMDC Programs, 1071 County Road G, Ithaca, NE 68033, call (800) 529-8030, fax (402) 624-8010, e-mail cdunbar2@unl.edu or visit the

Web at <https://extension.unl.edu/statewide/enre/crop/>.

BE AWARE OF CORN & SOYBEAN PESTS IN 2019

With the very wet spring we have experienced, we have already seen a number of pests (diseases and insects) infest corn and soybeans in southeast Nebraska. The important thing is to be vigilant in scouting fields as crops progress during the growing season. Also **CropWatch** is an excellent resource for information on pests in the state. With its extensive network of crop consultants and crop Extension educators throughout the state you can get timely information there at: <https://cropwatch.unl.edu/>. Already in 2019 in soybeans we have had reports of defoliation from thistle caterpillars (Painted Lady Butterflies) larval stage that required treatment with an insecticide. In 2017 we had a large population of Painted Lady Butterflies in the area, with some fields treated due to defoliation by the thistle caterpillars. Treatment thresholds are 30% and 20% defoliation for soybeans in the vegetative and reproductive stages respectively. A previous article in **CropWatch** shows how to estimate defoliation in soybeans. This article can be accessed at: <https://cropwatch.unl.edu/2016/decision-making-soybean-defoliating-insects>. Keep a watch out for a second generation of thistle caterpillars, Japanese beetles, silver spotted skipper caterpillars and the more common pests, bean leaf beetles and grasshoppers throughout the growing season. Several years ago a few farmers in Nemaha and Richardson county treated fields due to defoliation from the silver spotted skipper. It is important to know the life cycle of insects because sometimes treatment may not be necessary. Last year soybean growers in parts of Cass county had infestations of Japanese beetles that required treatment. There is even the potential for soybean aphids to infest fields, depending what environmental conditions develop throughout the summer. We have had isolated incidence of these insects in previous years so be aware of potential problems. Some soybean growers in southeast Nebraska, primarily Cass County have experienced the soybean gall midge. It is probably too late to spray now, although you should become familiar with this pest so you can combat it in future years. Finally another pest that is showing up more is the soybean stem borer. Similar to the soybean gall midge, once it is in the soybean, there is no insecti-

cide that will control it. The important thing is to identify fields that are infected and harvest these as soon as mature to reduce harvest losses. Japanese beetle can also become a pest of corn if they are in high numbers. Threshold level for Japanese beetle in corn is three or more beetles per plant clipping green silks to ½" and pollination is less than 50% complete. With most soybean and corn behind normal, insects could have a bigger impact on crops in 2019.

The wet conditions this spring and the high humidities in recent days have been conducive for potential diseases to develop. It is important to check cornfields for potential disease outbreaks. Scouting fields for diseases is an important IPM tool to use to determine if and when a fungicide should be applied. It is important to keep updated on "**CropWatch**" at <http://cropwatch.unl.edu/> to see what diseases pests are showing up in Nebraska. Tamra Jackson-Ziems, UNL Extension Plant Pathologist does an excellent job of keeping on top of the corn diseases as they develop around the state. Corn diseases may be developing in the near future, but there will still be time to treat the diseases if warranted. Positive identification of the disease is important, i.e Goss's wilt, Southern corn leaf rust and Gray Leaf Spot in corn. If you have some minor infestation, you may be able to spray at a later date, get better control and save having to potentially spray twice for later season infestation of diseases. If corn becomes injured due to hail or wind, this provides an entry way for diseases to enter the plant. Goss's Wilt is a disease that enters the plant in this manner. It is also a bacteria, so a normal fungicide will not control it. Another bacterial disease which could be showing up now is Bacterial Leaf Streak. It has not been confirmed in Johnson, Nemaha, Richardson or Pawnee Counties in Nebraska in previous years, but it has caused issues in other parts of Nebraska. This doesn't mean we do not have it here though. This disease does not need an injury to the corn plant to infect it. This disease has infected fields as early as the V6 stage, so it can be much earlier than Gray Leaf Spot usually infects corn, which looks quite similar to this disease. Southern Corn Leaf Rust has also caused problems in southeast Nebraska in previous years. It is important to scout your fields for this disease. Southern rust pustules are smaller than those of common rust. Southern rust spores are typically orange to tan in color and produced in pustules predominantly on the upper leaf surface, although they can also be produced abundantly on/near the midrib on the underside of the leaves. Timely fungicide applications can be very effective at controlling rust and other fungal diseases in corn. It is important to remember that making applications too early might

mean that the protection they provide may be worn off before substantial southern rust or gray leaf spot develops, leaving plants vulnerable to disease spread. Systemic fungicides can provide protection from disease spread for about 21 days, so application timing is important to make the best use of the protective and curative characteristics of the products. In 2016 some fields were hit hard with infestations of Southern corn leaf rust in southeast Nebraska that came in late summer. I believe the producer may have lost 30-40 bu/ac in yield for an irrigated field. Most hybrids do not have very good resistance to this disease in Nebraska. That is why it is important to scout for diseases throughout the summer.

Under certain conditions the use of fungicides can definitely be insurance against some diseases, especially under circumstances where disease development is more favorable. Fungicides can also be used as a management tool to improve plant health and reduce lodging under adverse weather conditions, which could reduce down corn and potentially increase harvestable corn yields. In southeast Nebraska there have been several reports of significant corn yield responses to fungicide applications, especially in corn hybrids susceptible to Gray Leaf Spot. In all crops, environmental factors, cultural practices, such as variety, planting date and irrigation may influence the incidence of disease infection. In some years, conditions have been favorable for disease development, such as Gray Leaf Spot, and application of fungicides provided significant yield responses in a number of University trials. In other years, environmental conditions were less favorable for disease development, and fungicides had less of an impact on corn yields.

For corn the best strategy is: apply a fungicide only when warranted, use IPM and scout fields, use recommended fungicide rates and mix or alternate fungicides with different modes of action. In soybeans there has been more frogeye leaf spot showing up in recent years. Important to scout fields for this disease and alternate fungicides with different modes of action. Frogeye leaf spot has developed resistance to strobilurin fungicides in some states. It is also important to monitor for other diseases in soybeans such as phytophthora, sudden death syndrome and soybean cyst nematodes so you can better manage them in the future. If you have questions about diseases in corn or soybeans or other crop related issues, feel free to contact me at (402) 274-4755 or at glesoing2@unl.edu.



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