Hello, Ashtabula County. It is great to see the progress that many of our farm families have made this past week. In fact, I have heard from a few farmers who are completely done with planting. I have also received some nice reports on both the quality and tonnage of our first-cutting haylage crop. Kudos to Jason Brinker of Rock Creek who already has made dry hay! Today, I am pleased to share information on some very bright high school seniors and college students who were selected to receive agricultural scholarships. Congratulations to each of these students and to our community at large who supports our scholarship efforts. Have a great week everyone!

David Marrison, Ashtabula County Ag & NR Educator

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Ashtabula County Ag Scholarship Recipients Chosen

The Ashtabula County Agricultural Scholarship Fund was founded on April 29, 1952 by a group of local leaders to help promote interest in the study of agriculture, home economics, environmental sciences, and natural resources. Since then, the committee has grown to also additional community scholarships which are open to any student regardless of the college major. This scholarship program is driven by a super group of Ashtabula County volunteers and supported by countless families, agribusiness firms and prior recipients.

On May 11, the committee met to review the applications and is very pleased to announce that a total of $11,500 in scholarship money was awarded to ten outstanding young people. The scholarship recipients chosen were:

Raeann Eldred, daughter of Myron and Rosmarie Eldred of Kingsville, is the recipient of a $1,000 Ashtabula County Holstein Club Scholarship and a $250 Jim Baird Memorial Scholarship. Raeann will graduate from Edgewood High School this spring and will attend The Ohio State University next fall majoring in Social Work and Human Resources.
Calla Mazzaro, daughter of Tom and Charity Mazzaro of Williamsfield, is the recipient of a $1,000 Ashtabula County Holstein Club Scholarship and a $250 Jim Baird Memorial Scholarship. Calla will graduate from Pymatuning Valley High School this spring and will attend The Ohio State University next fall majoring in Health Sciences & Physical Therapy.

Nicole Mann, daughter of Sharon Mann and Tim Mann of Pierpont, is a recipient of the $1,000 Western Reserve Farm Cooperative Scholarship and a $250 Ashtabula County Ag Scholarship. Nicole graduated from Pymatuning Valley High School in 2015 and is currently attending The Ohio State University Agricultural Technical Institute (ATI) majoring in Dairy Production and Management.

Ashley Ray, daughter of Jennifer Ray of New Lyme and Joy Ray of Colebrook, is also a recipient of the $1,000 Western Reserve Farm Cooperative Scholarship and a $250 Ashtabula County Ag Scholarship. Ashley will graduate from Pymatuning Valley High School this spring and will be attending West Virginia University next fall majoring in Animal and Nutritional Science.

Arden Bishop, daughter of Paul and Jodi Bishop of Jefferson, is the recipient of the $1,000 Lester C. Marrison Memorial Scholarship and a $250 Ashtabula County Ag Scholarship. Arden will graduate from Jefferson High School this spring and will be attending the Ohio State University next fall majoring in Animal Science & Zoology.

Mitchell Inman, son of Laurie Magyar of Williamsfield, is the recipient of the $1,000 Alan C. Jerome Memorial Scholarship and a $250 Ashtabula County Ag Scholarship. Mitchell will graduate from Pymatuning Valley High School this spring and will attend The Ohio State University next fall majoring in Agricultural Engineering.

Jackson Bogardus, son of David and Sarah Bogardus of Andover, is the recipient of the $1,000 Harold and Dick Springer Memorial Scholarship and a $250 Agricultural Scholarship Fund award. Jackson is a 2015 graduate of Pymatuning Valley High School and is currently attending Hocking College majoring in Wildlife Resource Management.

Sarah Piper, daughter of Frank and Beverly Piper of Dorset, is the recipient of a recipient of a $1,250 Agricultural Scholarship Fund award. Sarah is a 2015 graduate of Pymatuning Valley High School and is currently attending Ohio Christian University majoring in Agribusiness management.

Samuel Semai, son of John and Patricia Semai, is the recipient of the $1,000 Service-Jerome Scholarship. Sam will graduate from Pymatuning Valley High School this spring and will attend The Ohio State University Agricultural Technical Institute (ATI) next fall majoring in Animal Science.

Justin Swiger, son of Jeremy and Julie Swiger of Pierpoont, is the recipient of the $500 Lautanen Family 4-H Scholarship. Justin will graduate from Pymatuning Valley High School this spring and will be attending The Ohio State University next fall majoring in Chemical Engineering.
Ashtabula County Cattlemen’s Association Announces Youth Scholarship Winners
The Ashtabula County Cattlemen’s Association is announce that three Ashtabula County students have been selected to each receive a $500 ACCA Youth Scholarship for the 2016-2017 School Year. This scholarship fund was established in 2011 to award scholarships to deserving Ashtabula County students for their involvement in the beef industry in Ashtabula County.

The first recipient of a scholarship is Cody Kanicki, son of Bart & Kelly Kanicki, of Pierpont, Ohio. Cody will be graduating from Edgewood Senior this June and will be attending the Ohio State University Agricultural Technical Institute (ATI) next fall majoring in Renewable Energy with a minor in Beef Production.

The second recipient is Ashley Ray, daughter of Jennifer Ray of New Lyme and Joe Ray of Colebrook. Ashley will graduate from Pymatuning Valley High School this spring and will be attending West Virginia University next fall majoring in Animal & Nutritional Science.

The final recipient is Nicole Mann, daughter of Sharon Millard and Tim Mann of Pierpont. Nicole is currently attending OSU ATI and is majoring in Dairy Production & Management. Congratulations to Cody, Ashley and Nicole for being selected for a $500 Ashtabula County Cattlemen’s Association Youth Scholarship.

Northeast Ohio Farm Bureau Program Assistant/Intern Position Applications Being Taken
The Northeast Ohio Counties of Farm Bureau is looking to hire a summer program assistant/intern to provide special project and program support to the Organization Director. The position is a 30-40 hours per week from June to August/September, based on student’s availability, class schedule, and workload desire. Flexible scheduling but work may require specific evenings and weekends.

The primary duties include providing support/event coordination to county leaders on county program and special projects as assigned by the Organization. The intern will also assist with membership prospecting and will assist in maintaining a social media presence in the area. The minimum educational requirement is a high school diploma and the person should have the capacity to motivate, enthuse and recognize volunteers, be proficient in basic computer skills, and have strong written and verbal communication skills.

To apply please send resume, cover letter, and references to: Northeast Counties Farm Bureau, 8220 State Route 45, Suite B, Orwell, OH 44076, or email to nefarmbu@fairpoint.net. The deadline to apply is June 6, 2016. For further information, questions, or concerns, please contact Organization Director, Mandy Orahood via e-mail: aorahood@ofbf.org or at 440.437.8700

USDA Resumes Incentives to Grow and Harvest Biomass for Energy and Bio-based Products
The U.S. Department of Agriculture (USDA) Farm Service Agency (FSA) Administrator Val Dolcini announced on Monday, May 23 that incentives will resume this month for farmers and foresters who grow and harvest biomass for renewable energy and bio-based products. The funds come through the Biomass Crop Assistance Program (BCAP), which was reauthorized by the 2014 Farm Bill.

“This program expands the types of feedstock that can be used to make renewable fuels and biobased products, laying the foundation for growing more products made in rural America,” said Dolcini. “The Biomass Crop Assistance Program currently supports more than 890 growers and landowners farming nearly 49,000 acres to establish and produce dedicated, nonfood energy crops for delivery to energy conversion facilities, and it is a key piece of USDA’s strategy to grow the rural economy and create new markets for our farmers and ranchers.”
Facilities seeking to be qualified by USDA to accept biomass can begin enrollment between today, May 23, and June 6, 2016. BCAP provides financial assistance to farmers and ranchers who establish and maintain new crops of energy biomass, or who harvest and deliver forest or agricultural residues to a USDA-approved facility that creates energy or biobased products.

In fiscal year 2016, there is $3 million available for BCAP. A portion of the funds will be provided to two existing BCAP projects in New York and Ohio/Pennsylvania to expand acres planted to shrub willow and giant miscanthus. Farmers and forest landowners may enroll for biomass establishment and maintenance payments for these two projects between June 15 and Sept. 13, 2016.

Also, between June 15 to Aug. 4, 2016, USDA will accept applications from foresters and farmers seeking incentives to remove biomass residues from fields or national forests for delivery to energy generation facilities. The retrieval payments are provided at match of $1 for $1, up to $20 per dry ton. Eligible crops include corn residue, diseased or insect-infested wood materials, or orchard waste.

To learn more about BCAP or to enroll in updates, visit www.fsa.usda.gov/BCAP or contact your local FSA county office. To find your local county office, visit http://offices.usda.gov/.

Agriculture Secretary Tom Vilsack has recognized the biobased economy as one of the pillars that strengthen rural communities, and as a result USDA helped jumpstart efforts to provide a reliable supply of advanced plant materials for biofuels. Over the course of this Administration, USDA has invested $332 million to accelerate research on renewable energy ranging from genomic research on bioenergy feedstock crops, to development of biofuel conversion processes and costs/benefit estimates of renewable energy production. Through BCAP, USDA is incentivizing more than 890 growers and landowners farming nearly 49,000 acres to establish and produce dedicated, nonfood energy crops for delivery to energy conversion facilities, and the department has expanded insurance coverage and other safety net options to support farmers producing biomass for renewable energy. To ensure those feedstocks are put to use, USDA has invested in the work needed to create advanced biofuels refineries. Under this Administration, USDA has supported efforts to build six new biorefineries to produce advanced biofuels in Louisiana, Georgia, Oregon, Nevada, North Carolina, and Iowa, in addition to three existing facilities in New Mexico, Michigan and Florida previously supported. USDA has also worked to strengthen markets for biobased products. Approximately 2,500 products now carry USDA’s BioPreferred label, which helps consumers make informed decisions about their purchases, giving them assurances that their product was made using renewable materials, such as plants or forestry materials.

Investments in renewable energy and the biobased economy are a leading part of USDA’s commitment to mitigating climate change and promoting a clean-energy economy. This month, the Department is examining what a changing climate means to agriculture and how USDA is working to reduce greenhouse gases. For more information, visit Chapter 5 of https://medium.com/usda-results.

Since 2009, USDA has worked to strengthen and support American agriculture, an industry that supports one in 11 American jobs, provides American consumers with more than 80 percent of the food we consume, ensures that Americans spend less of their paychecks at the grocery store than most people in other countries, and supports markets for homegrown renewable energy and materials. USDA has also provided $5.6 billion of disaster relief to farmers and ranchers; expanded risk management tools with products like the Whole Farm Revenue Protection; and helped farm businesses grow with $36 billion in farm credit. The Department has engaged its resources to support a strong next generation of farmers and ranchers by improving access to land and capital; building new markets and market opportunities; extending new conservation opportunities. USDA has developed new markets for rural-made products, including more than 2,500 biobased products through USDA’s BioPreferred program; and invested $64
Plant, Plant, Plant!
By: Jim Noel
Source: http://agcrops.osu.edu/newsletter/corn-newsletter/plant-plant-plant

The weather pattern has become favorable for planting. In the short-term planting is favorable but it could become less favorable in the next 1–2 week again so it is worth taking advantage of the window. As expected our weather pattern has changed to a much warmer one. This will persist for some time now. Temperatures for the rest of May will average +5F. This will allow May to go down as 0 to -1F for the month and it looks like the period of March to May will actually go down as +1 to +2F even with recent coolness.

Drying conditions will be excellent until Wednesday as relative humidity will be quite low until midweek. Humid conditions with dewpoints in the 60s will return Wednesday into the holiday weekend. There will be a shift of the main rain focus to the western half of the corn and soybean belt over the next 2 weeks. Rainfall in the eastern sections will be close to normal. Normal is about an inch per week. Due to scattered thunderstorms starting Wednesday and on, rainfall will be quite variable. Rainfall through the rest of May will average 0.75 to 1.00 but will range from 0.25 to 2.00 inches. This is common in summer-time type patterns.

The outlook for June calls for temperatures +1 to +2F with rainfall 0 to +1 inches.

The outlook for July calls for temperatures 0 to +2F with rainfall -1 inch.

<table>
<thead>
<tr>
<th>Outlook period</th>
<th>Temperatures</th>
<th>Rainfall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rest of May</td>
<td>+5F</td>
<td>0.25–2.00 (averaged 0.75-1.00) inches</td>
</tr>
<tr>
<td>June</td>
<td>+1F to +2F</td>
<td>0 to +1 inch</td>
</tr>
<tr>
<td>July</td>
<td>0 to +2F</td>
<td>-1 inch</td>
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</tbody>
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Time to Scout for Black Cutworm in Corn
By Kelley Tilmon & Andy Michel
Source: http://agcrops.osu.edu/newsletter/corn-newsletter/time-scout-black-cutworm-corn

We have started to see cutworm damage in Ohio corn. Black cutworm (BCW) is the prime offender, though other species exist. Adult BCW (moths) are migrants from the south that start moving into Ohio in April, and lay eggs that hatch into the cutworm caterpillars. Although there are some hotspots for egg laying, these predictions are far from exact. Moths tend to seek out fields with a lot of weeds, especially winter annuals such as chickweed, to lay their eggs. The eggs are laid in the weeds and the tiny larvae feed on the weeds until the weeds are killed by herbicide or tillage at which time the larvae will move onto the corn planted in the fields. An additional concern related to corn is that most of the crop is being planted relatively late this spring. Corn will be rather small when larvae of these pests begin their heavier feeding. Thus, the potential for plant injury and subsequent economic losses will be much higher than normal because of the size of the corn. Black cutworms go through seven instars, with only the last four producing the greatest amount of injury.
Insecticidal seed treatments do not offer much protection. Some Bt corn train packages provide BCW protection and some do not (http://msuent.com/assets/pdf/28BtTraitTable2016.pdf). Early detection of cutworm infestations and timely application of rescue treatments are the keys to achieving effective stand protection. Start scouting for BCW as soon as the corn begins to emerge. Rescue treatments can then be applied if necessary. If cutting is above ground, cut plants will likely recover if a timely rescue treatment is applied. In contrast, below ground feeding is generally characterized by wilting plants that have been cut below the growing point, or plants cut off before emergence, and is harder to recover from. Soil moisture conditions can sometimes dictate where you might expect to find cutting with above ground cutting occurring under moist soil conditions and below ground cutting occurring under dry soil conditions. Treatment is warranted when visible cutworm injury is observed on 3% to 5% or more of a stand. If a significant cutworm infestation is detected too late, cutting has occurred below ground and below the growing point, then a rescue treatment may achieve only marginal results.

More information about cutworm biology, scouting, and management can be found at http://ohioline.osu.edu/factsheet/ENT-35

Take a Second Look at Your Hay Habit
By Ed Brown, Extension Educator-Athens County

Since farmers have been keeping livestock, they have put up hay every summer for feeding in the winter. It started with a sickle and scythe, loose hay thrown on wagons and then stored in a large barn. Over the years, tractors and hay equipment were developed to cut down on the time needed for making hay and to increase the area that could be harvested. Many folks can recall hot, summer days during their youth having to go out and help put up hay. It was a habit and a necessity that came with keeping livestock. Nowadays, my father-in-law can go out and put up tons of hay by himself without hardly getting out of an air-conditioned tractor. Over the years, the equipment has improved and the price of fertilizer has gone up. I am just wondering if most folks have ever stepped back and calculated the real cost of putting up hay these days.

Here are some numbers to think about when you put up hay. First off, you need to have the right equipment. If you don’t already own it, then you are looking at buying new or used equipment. This might include a rotary mower/conditioner, hay rake, baler, and possibly fertilizer spreader and hay trailer. Even if you already own the equipment, there is always depreciation, insurance, and storage costs associated with owning the equipment. Since you use one or a couple of tractors to pull all of this equipment, you have to add some tractor cost into the mix. Now taking a look at the Ohio State Hay Enterprise budget, the book cost for owning the equipment is around $70/acre. Add in diesel fuel and repair cost and you are at about $95/acre. I know that some of you can cut costs here and there, but you are going to have to come up with some real numbers before you can convince me that you are doing it any cheaper.

Now that you have the equipment, you need to have some grass worth cutting. If you already have decent grass growing in your hayfield, then you can save some cost in not having to go through the planting process and all of the associated costs. I am going to assume that you already have a good stand of grass. There are several different grasses that we could look at. For this exercise, we’ll look at cool season grasses. In general, our cool season grasses remove 45 lbs. of nitrogen, 12 lbs. of phosphorus and 50 lbs. of potassium with every ton of dry matter taken off the field as hay. So, I took a look at current fertilizer prices and did some calculations. For each ton of dry matter, you are taking off around $38 worth of fertilizer. This doesn’t leave any extra behind any for grass regrowth. With minimal effort you might be producing 2 tons of hay to the acre.
If you have just put in the minimum inputs and were able to get four 1000 lb. bales per acre, your cost per bale is $33.25. (Most large, round bales usually don’t weigh this much, but it makes the math easier.) This type of production can actually be the most inefficient. By doubling the fertilizer on good soil you should be able to double the number of bales per acre. This would bring your price down to $21.38 per bale. This of course assumes that your soil is in good condition and you have no weed problems. If not, start adding in a few more dollars.

Now it’s time to feed the cows, but you have no idea if it has adequate nutrition for the animals that you are trying to feed. You need a hay analysis. If not, then you will have to guess if the hay is adequate for the stage of production that the cattle are in. Research shows that if you are feeding hay that doesn’t meet the nutritional requirements of your animals, then you may need to add an additional $17 in supplemental feed costs per bale. If you are keeping up with the numbers, the cost of the poor quality hay is now up to $50.25 per bale for feeding a lactating cow.

Let’s take a look now at the habit of putting up hay. So far, we have accounted for the bare minimum in producing hay. No amount has been accounted for our time and labor and we are at a bale of hay that is costing us somewhere between $38 and $50. There could be some savings or additional costs. From my experience, these always seem to even out and you end up at the same price. This is the time when you need to take a good look at the conditions of your hay field and decide what is really needed to make some quality hay.

The one question that I have to ask myself is “Am I gaining or losing money by putting up hay?” I always keep an eye on hay prices and they always seem to be lower than what I can produce it myself. Many of those, though, don’t come with any kind of analysis. If I can buy hay with an analysis that meets my herd’s needs for about the same cost, then I might save myself some time and money by having someone else do the work. The second advantage is that I am bringing in someone else’s nutrients. I can feed the cows what they need and then get the leftovers spread out around the farm to help my own pastures. In the overall accounting, I could take off the amount of additional nutrients added to my pasture from the cost of the hay. If you looked at the numbers real close and looked at your feeding practices, you might find that you could pay an extra $5 to $10 for that 1000 lb. bale and still be ahead.

Of course there are many factors that go into your decision to cut hay. The main question that you have to ask yourself is if cutting hay is the best management decision for your farm or are you doing it out of habit.

<table>
<thead>
<tr>
<th>Hay Production Cost</th>
<th>Cost/ 1000 lb. Bale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>$/acre</td>
</tr>
<tr>
<td>Machine cost to harvest</td>
<td>$95</td>
</tr>
<tr>
<td>Fertility Cost/bale</td>
<td>$9.50</td>
</tr>
<tr>
<td>Total Cost/bale</td>
<td>$33.25</td>
</tr>
<tr>
<td>Supplemental feed</td>
<td>$17</td>
</tr>
<tr>
<td>Total per bale</td>
<td>$50.25</td>
</tr>
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</table>

**Wrap it Up and Improve Your Forage**

By Dr. Jeff Lehmkuhler, Extension Beef Specialist & Dr. Ray Smith, Extension Forage Specialist, University of Kentucky

Source: [http://u.osu.edu/beef/2016/05/18/wrap-it-up-and-improve-your-forage/#more-1915](http://u.osu.edu/beef/2016/05/18/wrap-it-up-and-improve-your-forage/#more-1915)

One should not complain about spring rains, but when it begins to interfere with hay making, the gloves are thrown off and it is go time. This seems to be the case every spring in the Bluegrass state. The spring rains helps the cool-season forages grow, but it impedes our field work. Since we can’t control the weather or the forage from maturing, we have to dig deeper into the toolbox to find some help. Harvesting high moisture forage as baleage may be the tool of choice for some. Several folks have called about wrapping annual cereal grain forage this spring. Let’s talk a
few minutes to cover some basics so any forage made as baleage this summer has the best chance of resulting in a high quality winter feed.

- Forages need to be cut at the boot to early flower stage for optimum quality. This helps ensure adequate soluble carbohydrates for the microbes to ferment and drop the pH to preserve the forage.
- Forage should be baled at the proper moisture, 40-60%, to ensure a successful fermentation. Higher levels of moisture increases the risk of a clostridial fermentation and botulinum growth. Too dry impedes fermentation and again to lead to a poorly preserved forage. Obtain a windrow moisture meter, bale moisture probe or utilize the microwave technique for determining moisture levels in forage.
- Slow down the tractor speed when baling to ensure a tightly wrapped bale is made, particularly with cereal grain forages. It is important to limit the amount of air or oxygen so that anaerobic fermentation occurs soon after baling.
- Wrap bales in plastic ideally within 6 hours of baling to limit air and oxygen exposure. Stretch film should be applied to provide 6 millimeters of plastic thickness. This is often accomplished by having 6 layers of plastic. At a minimum 4 layers of plastic should be applied, but 6 millimeters is recommended to limit oxygen from getting through the plastic.
- Allow the bales to ferment for 4-6 weeks. Samples should be obtained and analyzed for pH and ideally a fermentation profile which will provide the level of acids in the silage. This information is important to help determine the quality of silage made and whether there is a potential risk for a disorder.

There are thousands of bales made for silage annually with few cases of botulism or listeria occurring in animals. The key to lowering the risk of poor fermentation is following the five basic steps outlined above. For additional information on making baleage, please contact your local county Extension office.

**Microwave Oven Method to Determine Moisture Content of Hay, Silage and Baleage**

The microwave oven method provides reasonably accurate forage moisture results in a relatively short time. Although this method takes about 20 minutes to complete, the measured moisture concentration is much more accurate than those from electronic conductance moisture testers, especially for high moisture sample like silage and baleage.

Before using the microwave oven method, obtain the following items:
- Microwave oven
- Scale (must weigh in grams-can buy one from most post offices)
- Microwave-safe plate
- 10- to 12-ounce cup of water (a coffee mug works best)
- Pencil and paper

1. Use the following procedure for the best results:
2. Obtain a representative forage sample (whole plant material).
3. Cut the sample into 1-inch pieces; keep leaves and stems uniformly mixed.
4. Weigh the plate and record it as “plate weight.” This will be subtracted during the final calculation.
5. Add approximately 100 grams of the forage sample to the plate; spread the sample as uniformly as possible.
6. Weigh the plate with the forage sample and record it as “initial weight.”
7. Place the cup of water in the corner of the oven to capture unabsorbed microwaves as the plant tissue dries. This prevents sample from igniting.
8. Place the sample on the plate in the center of the oven.
9. Set the oven on HIGH for 2 minutes* and “cook” the sample.
10. Remove the sample and plate, weigh them, and record the weight.
11. Change the water in the cup to prevent the water from boiling over.
12. Set the oven on HIGH for 1-2 minutes* and “recook” the sample.
13. Remove the sample and plate, weigh them, and record the weight.
14. Repeat steps 7 through 10 until the weight does not change more than 1 gram (this means the sample is dry); record as “final weight.”

15. Use the following equation to determine the percent of moisture of the forage sample:

\[
\text{Percent moisture (\%)} = \frac{(\text{Initial weight} - \text{Final weight}) \times 100}{\text{Initial weight} - \text{the Plate weight}}
\]

New Look to Growing Degree Website
By Amy Stone

Have you visited the Ohio State University's Growing Degree Day (GDD) website this spring? If you haven't, you are in for a treat! The website has a new look, is very easy to navigate, and has an added feature that everyone will be using. Once on the home-page, you have an option of inputting any Ohio zipcode. The date will always be the current date, although you can manipulate and use past dates in your search. Once the zipcode has been added, website users click on "show me the calendar" and are taken to a short sequence of what is occurring with plant blooms (first bloom or full bloom) and insect activity as one contiguous list. Users can also view the entire calendar from start to finish from this page.

The new link called "summary" is a listing of a specific month and day and the GDDs from 2010 - 2016. I always enjoyed comparing year to year, but this feature makes short work of pulling the summary data together. With a simple click of a button, the website does the work and you will have the information at your fingertips. For example, on May 15 in Toledo, Ohio, the GDD for the last six years is listed below:

2016: 316
2015: 350
2014: 315
2013: 344
2012: 568
2011: 275
2010: 461

So go forth and explore! Check out the redesigned GDD website. If you have been already using GDDs, continue to forge ahead, and give the "summary" tab a try. If this is something that is new to you, jump right in, and become familiar with calendar and how the information provided can be applied in your own landscape, a client's landscape, a garden or arboretum, or a nursery. It is also a useful tool for those in the garden center, helping retail consumers with their seasonal questions.

More Information
http://www.oardc.ohio-state.edu/gdd/default.asp

Making Equipment Pay
By Ivory Harlow
Source: http://www.farmanddairy.com/top-stories/making-equipment-pay

Bright paint, streamlined design, precision performance — who doesn’t love new farm equipment? A cost/benefit analysis helps farmers determine if and when a potential equipment purchase pays. You can use the data to decide if the equipment fits your budget, and to pinpoint when your investment will return a profit.

Reasons to buy or replace equipment
Before buying or replacing equipment, determine if the purchase is crucial to your operation. Reasons to buy or replace equipment include:

- New technology
More power
- Equipment has multiple applications or is used for repeat tasks
- More productive, increased workload
- More effective
- Reliability; task is time sensitive
- Less maintenance costs and downtime
- Comfort may not seem to justify the purchase of new equipment, but it is a critical factor for aging farmers and farmers with disabilities.

How to perform a cost/benefit analysis

1. Download a free cost/benefit analysis worksheet from Trainers’ Resource Guide at http://farmbiztrainer.com/resources/groups/one-page-planning-suite/
2. Input the total cost of equipment.
3. Estimate the life of the equipment. 15 years is the accounting standard for most farm equipment.
4. Figure the annual depreciation cost.
   a. Total cost / expected life of the equipment = annual depreciation.
5. Forecast additional profit (annual) that will result from the equipment purchase. If it is an initial equipment purchase forecast the expected first year profit.
6. Calculate your current gross margin percentage from your farm’s income statement. If you do not have an income statement, enterprise specific average gross margins can be found online.
   a. Gross margin % = revenue – cost of goods sold / revenue x 100%
7. Enter the dollar value of additional gross margin (annual) that will result from the equipment purchase. If it is an initial equipment purchase there is 0 additional gross margin.
   a. Additional gross margin = Additional revenue x gross margin %
8. Subtract annual depreciation cost, see step 3.
9. Interest is the cost of borrowing money. Subtract the cost of annual interest.
   a. Annual interest = total cost of equipment x interest rate (decimal) x 1 year
10. The cost of operating the equipment includes fuel, non-warranty maintenance, utilities and labor used each year.
11. Calculate net income
   a. Net income = additional gross margin - depreciation, interest and other operating costs
12. Find return on investment
   a. Net income / cost of equipment x 100% = ROI %

Interpreting results

Return on investment tells how much profit is made as a percent of the total cost of equipment. A positive return is considered good. The larger the ROI, the more the equipment pays. A negative number means revenue generated is not enough to cover the cost. The equipment does not fit your budget. You may hold off on the purchase and make do with what you have, or borrow, rent, or hire a custom operator to get the job done. Alternatively, you can reduce production costs or generate more revenue with the equipment to make the equipment pay.

GMOs Ruled Safe to Eat, But They Aren’t Solving World Hunger
Source: http://www.huffingtonpost.com/entry/gmo-report-safe-to-eat_us_573bac3fe4b0646cbeeb61b6

Genetically modified crops are as safe to eat as their conventional counterparts and have not been proven to negatively impact the environment, according to a highly anticipated report. However, the study finds the controversial technology has not, as proponents have claimed, increased the rate of crop yields and has resulted in
insect and weed resistance that has become a “major agricultural problem.” So if you’re looking for something that might settle the debate over genetically engineered crops once and for all, keep looking.

“A major sort of message from our report is that it’s not possible to make sweeping generalizations about the benefits and the risks of all GE crops,” said North Carolina State University entomology professor Fred Gould, chair of the 20-person committee behind the study, during a presentation. The report offers “a little something for everyone” — from the most avid supporters to the harshest critics, according to the Chicago Tribune. Unsurprisingly, each side was quick to cherry-pick the findings.

The roughly 400-page report that the National Academies of Sciences, Engineering, and Medicine released Tuesday is the result of a two-year study. Gould said it was motivated by “claims and research that extol either the benefits or the risks posed by currently genetically engineered crops,” which has created a “confusing landscape for the public and policy makers.”

“There are people who are saying that without genetically engineered crops, we’re never going to be able to feed the world in 2050 and there are people who say that eating a genetically engineered crop will cause sterility or will cause cancer,” he said. “We hope that at least our study will open up a conversation about the information that’s there and what the evidence is.”

After combing through some 900 publications on technology for genetically modified organisms and reviewing 700 public comments, the committee concluded that the evidence suggests GMOs pose no substantial risk to human or environmental health. However, the committee acknowledged the “inherent difficulty of detecting subtle or long-term effects on health or the environment,” they wrote in an accompanying statement.

U.S. Secretary of Agriculture Tom Vilsack said in a statement to the Chicago Tribune that the report “adds to the long list of research that shows genetically engineered foods are safe.” He also expressed U.S. Department of Agriculture’s willingness to work with Congress to “prevent further confusion” and develop a nationwide system for informing the public about what’s in their food products, without increasing costs or giving a false impression about safety. The debate over whether genetically engineered foods should be appropriately labeled remains a hot-button issue.

Several major food producers have begun labeling products on a national scale in response to a Vermont law, passed in 2014, which requires all genetically engineered food sold in the state to be labeled by July 1. The U.S. Senate blocked an industry-backed bill in March that would have preempted state laws, specifically Vermont’s, by establishing voluntary standards for labeling genetically modified foods.

The committee opted not to take a firm stance on labeling. Instead, it said that while it “does not believe that mandatory labeling of foods with GE content is justified to protect public health,” the matter “involves social and economic choices that go beyond technical assessments of health or environmental safety.”

Among the more surprising findings, which Gould said left him and other committee members scratching their heads, was that no USDA data offers evidence that genetic engineering is improving the rate at which farmers’ yields are increasing. “We hear quite a few claims that we need genetically engineered crops to feed the world,” Gould said. However, the data seems to tell a different story, according to the report. The report concludes that while GE crops have “generally had favorable economic outcomes for producers,” they’ve also resulted in weeds evolving a resistance to herbicides, including glyphosate, a commonly used herbicide which the World Health Organization found likely causes cancer in humans.
When it comes to regulating new crop varieties, the report urges government agencies, including the Food and Drug Administration and Environmental Protection Agency, to focus not on the process by which it was developed, but the plant’s characteristics.

The report quickly drew criticism from anti-GMO groups, including Food & Water Watch, which USA Today reports accused the committee of “arriving at watered-down scientific conclusions due to agricultural industry influence.” Jim Thomas, a spokesman for ETC Group, told The Washington Post that the report is “inconsistent on the crucially important question of whether or not to regulate the new techniques such as genome editing and synthetic biology.”

To review the report in its entirety, go to: http://nas-sites.org/ge-crops/

These Students Are Developing Bacteria That Eats Our Plastic Pollution
Ben Schiller, Published May 17, 2016
http://www.fastcoexist.com/3059629/these-students-are-developing-bacteria-that-eats-our-plastic-pollution

While most of us spent our student years working a little and partying quite a bit, Miranda Wang and Jeanny Yao have used their time for something more productive: developing bacteria that can break down ocean-bound plastic waste. Having first worked on the problem in high school, they have since filed two patents, founded a company, and raised about $400,000. They're still only 22 and 21 years old.

The students recently picked up the latest in several awards: the $30,000 Perlman Grand Prize at the 2016 Wharton Business Plan Competition. That and four other prizes from Wharton: the Wharton Social Impact Prize, the Gloeckner Undergraduate Award, the Michelson People’s Choice Award, and the Committee Award for Most "Wow Factor." They're the first undergraduates to win the Perlman, and the first students to win all five awards, according to the University of Pennsylvania (home to Wharton business school).

The reason for all the fuss is obvious. Plastic pollution in the oceans is a massive problem, and Wang and Yao have the beginnings of a viable solution for at least part of it. They have a prototype for breaking down polystyrene into CO2 and water, and they see their technology being used in two ways—first, for landfill and beach cleanups, and, second, to create a secondary product to be used in textile manufacturing.

"It's going to be nearly impossible to get people to stop using plastic," says Wang. "We need real technology to break it down. Everything in nature should be biodegradable." The process first uses a solvent to dissolve the plastic, then enzymes catalyze depolymerization of its base chemicals, breaking it down into the more manageable compounds. Wang envisages sending mobile clean-up stations—either a truck or a floating vessel—with a 150,000 liter biodigester onboard. Workers could then load up the tanks with polystyrene and wait for the waste to degrade. The aim is to get the process down to as little as 24 hours. (Other processes, including these mealworms, take longer and don't break down the whole waste stream.)

"The idea is there's no need to collect the plastic and ship it to some centralized location. This plastic is very lightweight, so transporting even one kilogram of it would take a huge amount of volume and be very unsustainable in terms of transportation," Wang says. Wang and Yao's company is called BioCollection. They aim to start field-testing this summer, hopefully in China, and to finalize a commercially viable process within two years. Wang hopes to remove about nine grams of plastic per liter of bacteria. She estimates that each 150,000 liter container of bacteria will cost about $20,000.
Between finishing her studies at Wharton and setting up the company, Wang isn't getting much sleep. I called her a little later than we'd arranged and found she's been napping in the spare moments. But BioCellection seems like a good thing to be losing sleep over: We badly need to find ways to break down all the stray plastic out there.

**Department of Labor Announces New Overtime Rule**


The U.S. Department of Labor recently released its [final overtime rule](http://oaba.net/aws/OABA/pt/sd/news_article/122615/), which will make an estimated 4.2 million additional workers eligible to receive overtime pay. Effective December 1, the rule increases the exemption threshold from $23,660 to $47,476, essentially doubling the threshold for executive, administrative and professional employees.

The new overtime rule comes from the Obama administration’s initiative to lift middle-class wages. However, many small businesses cannot afford the increase in personnel expenses. Proposed solutions include limiting time to 40 hours, cutting base pay to offset costs or cutting benefits to full-time employees.

As part of the new rule, the following details are included:

- The salary threshold will be increased to $47,476 annually ($913/week) - an increase of slightly more than 100 percent from the current threshold of $23,660 annually ($455/week). The proposed level was $50,440 annually ($970/week).
- There will be no changes to the duties test.
- The salary threshold will be updated every three years and tied to the 40th percentile of full-time salaried workers in the lowest wage region of the country (currently the Southeast).
- Employers will have until Dec. 1, 2016, to come into compliance with the new requirement—close to 200 days. The proposal did not include an implementation period, but there were suggestions that it could be as short as 60 days.
- The rule allows employers to apply bonuses and incentive payments to up to 10 percent of the new salary threshold.

In August, the Ohio AgriBusiness Association submitted comments to the DOL opposing the proposed rule, voicing concerns on the impact the new rule would have on small agribusinesses. OABA will continue to work with our national association partners to determine next steps and determine solutions for our member companies.

**Pigweed, Palmer Amaranth Identification Tips for Growers**

Whether it’s Palmer amaranth, waterhemp or redroot pigweed, the best way to keep weeds from taking over farm fields is to know how to identify them, says a weed scientist with the College of Food, Agricultural, and Environmental Sciences at The Ohio State University.

While it’s important to control all species of weeds, stopping Palmer amaranth from spreading throughout the state is paramount because of its destructive power, said Bruce Ackley, an Ohio State University Extension program specialist in weed science. OSU Extension is the outreach arm of the college. This weed can cause severe yield — and financial — problems for growers, he said.

Also known as “pigweed on steroids,” Palmer amaranth has been reported in 13 counties across Ohio as of late 2015, a significant increase from 2012 when the weed was found in only one county in the state, according to the Ohio State University weed team. The problem is that Palmer amaranth is a glyphosate-resistant weed that has devastated many cotton and soybean fields in Southern states, said Ackley. In many cases, it has caused entire cotton and soybean fields to be mowed down.
“With Palmer amaranth moving into the state, we need to be concerned about what’s here, where it’s at, how to get adequate control of it, and make sure we use the best management practices to stop its spread,” he said. To help growers identify if the weeds in their fields are Palmer amaranth, waterhemp or redroot pigweed, Ackley has posted a video outlining how the weeds can be distinguished from each other.

Available at u.osu.edu/osuweeds, the video compares four aspects of pigweed biology that can be used to differentiate between the three weeds, he said. The video focuses on the weeds’ pubescence, petiole length, leaf shape, and inflorescence or seedhead characteristics. “Offering this video is just one more method to give people the information they’ll need to make the most definitive management decisions,” Ackley said. “The photos and descriptions can offer growers the next best thing between actually seeing the weeds in person.

“That’s important, because Palmer amaranth and waterhemp, for example, are very hard to tell apart when the weeds are seedlings to 5 inches. They have different management strategies — Palmer amaranth has resistance issues, experiences rapid growth and is very hard to manage. Waterhemp, on the other hand, is more known to Ohio farmers and they are more familiar with how to manage it.” In the portion of the video that discusses the different seedhead characteristics between Palmer amaranth and waterhemp, Ackley says, “The spike is the tell-all characteristic in Palmer amaranth,” as a picture of the weed is displayed.

“If this is something you see when you are in your combine or when you are driving past one of your fields in a pickup truck, you should stop, you should get a plastic bag, cut the seed head off and pull the plant out and remove it from your fields,” he says. “And really pay attention to that location moving forward to make sure you don’t have a lot more Palmer if it’s already dropped a bunch of seed, because you’re going to want to stay on top of it because you can have a real problem real quick.

“Waterhemp, on the other hand, is real wispy, kind of soft, has a lot of branches.” The video is just one tool on Ohio State’s weed science website that offers growers information on how to identify and manage weeds. The site, which averages about 1,000 page views each month, also offers additional educational videos, links to factsheets and other sources, Ackley said.

Vegetable Growers Field Night to be held on May 25 in Garrettsville, Ohio
OSU Extension will be holding a Vegetable Growers Field Night on May 25, 2016 in Garrettsville, Ohio on Wednesday, May 25, 2016 from 6:30 p.m. to 8:30 p.m. at Uria Byler’s farm located at 14439 Grove Road in Garrettsville, Ohio. During this field night, participants will look at vegetable diseases and insects and discuss any growing season concerns which growers have. New growers, prospective growers, or anyone interested in growing produce are welcome to attend. Remember to bring your dying plant samples and questions to stump the agents!!! The farm is located at 14439 Grave Road in Garrettsville, Ohio. For more information, call the Geauga County OSU Extension Office at (440) 834-4656.

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