Garfield County

WASHINGTON STATE UNIVERSITY EXTENSION

Newsletter

September-October 2019

Welcome to the WSU Garfield County Extension Newsletter!

This is an electronic newsletter highlighting events and topics of interest to residents of Garfield County and the surrounding area. This newsletter can also be viewed on our website: https://extension.wsu.edu/Garfield/

Do you have an event or subject you would like added to our newsletter or website? Would you like to be removed from our Extension Newsletter email list?

Contact the Extension Office

Phone: 509-843-3701 **Email: lisbeth.randall@wsu.edu**

Contact Us:

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(closed 12:00-1:00)

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SELECTION FOR MILK IN THE COW HERD: HOW MUCH IS TOO MUCH?

Travis Mulliniks for Progressive Cattleman Published on 22 march 2019

Even with high-quality feed, reproduction can be decreased in mature beef cows when peak milk production exceeds 20 pounds per day.
Photo by David Cooper

In Forage-based beef systems, balancing the environment (forage quality and quantity) and cow requirements is a driver of production efficiency.

The need for livestock producers to match cow size and milk production potential to forage resources in order to optimize forage utilization and reproductive efficiency is critical. Matching nutrient availability of the forage base with nutrient requirements of the cow has been recommended to efficiently utilize forage quality.

However, in beef production, we tend to overdo selection with the mentality that " more is better" or "bigger is better" in efforts to increase production. Selection for growth-oriented maternal traits has been a focus in the beef industry in an effort to maximize output. In doing so, cow-calf producers have tended to select for short-term traits such as growth and milk yield to increase weaning weights of calves for the potential to increase profitability.

With that in mind, using phrases such as "She's a good milker" or "I need cows that can milk" begs the question: Are you actually getting the full benefit of that milk you're paying for? For instance, benchmarking data from North Dakota State University illustrate calf weaning weight has been stagnant for the last 20 years or more. At the same time, genetic potential for growth has increased steadily.

Using maternal genetics, calf weaning weight has been shown to have as low as 5 percent influence on profitability on the ranch. With selection of milk, we are chasing a mere 5 percent influence on profitability. On the other hand, the economic value of reproduction is reported to be 5 times greater than calf growth or milk traits.

In addition, increased milk production increases production costs and inputs. With feed costs, which typically run between 60 to 75 percent of total annual cow costs, matching cow type or genetic potential to the production environment is and will be more important as the cost of production increases.

In a study conducted at the University of Tennessee, 237 Angus-bred beef cows were milked with a milking machine at days 58 and 129 postpartum to determine the influence of actual milk production on cow-calf performance. After milking, cows were retrospectively classified into one of three milk yield groups: low- (14 pounds per day), moderate- (20 per day) or high- (26 per day) milk cows. Pregnancy rates after A.I. were 11 and 13 percentage points lower for high-milk cows compared to moderate and low cows, respectively.

The decreased pregnancy rate after A.I. in the high-milking cows continued through the entire breeding season, with high-milking cows having the lowest overall pregnancy rates. Interestingly, milk production level did not increase calf weaning weight. Even with the nearly double milk production from low to high, calf weaning weights were not different among the three groups. A cow milking 14 pounds per day weaned the same size of calf as a cow milking 26 pounds per day.

However, the production costs between the two are drastically different, with costs being greater in the 26-pounds-per-day cow. Previous studies in Montana have shown milk production only influences calf average daily gain (ADG) up to peak lactation, which is roughly 60 days after calving. Calves from lower-milking cows tend to graze more in order to offset the lower consumption and availability of their dam's milk yield, which can provide similar ADG of forage quality is high.

With current trends of selecting for increased output-oriented traits in purebred and commercial herds in the U.S., average milk production at peak lactation has been steadily increasing. The continual increase in selection for milk production in beef cows increases the nutritional stress in critical physiological periods, such as early lactation, and will ultimately reduce reproduction or increase production costs to maintain performance. Even in environments with high-quality feed, reproduction can be decreased in mature beef cows when peak milk production is greater than 20 pounds per day.

Summary from the study mentioned above:

1. Selecting for increased milk production carries increased production risks.
2. Environment and management can restrict genetic potential to fully express themselves.
3. Selection of production traits that exceed the capacity of the production environment may not increase output (i.e., weaning weight) but will increase production costs of the cow herd.
4. Selection for milk production in beef cows increases the nutritional stress in critical physiological periods, such as early lactation, and can reduce reproductive traits or increase production costs to maintain performance.

If milking potential in the cow herd is too high, you may start seeing:

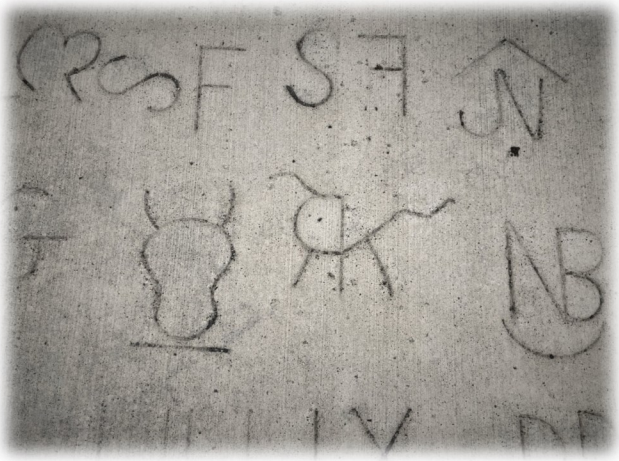
1. Calving distribution can start to spread out from increased number of later-breeding cows.
2. Decreased pregnancy rates especially in young (2-and 3-year-old) cows.
3. Decreased stocking rates over the years than previously stocked due to increased intake.
4. Increased number of thinner body condition score cows or increased feed amounts to maintain adequate body condition score.

Travis Mulliniks
Range Cow Nutritionist—University of Nebraska
West Central Research and Extension Center

Livestock and Farming

Modernizing the Livestock Inspection Program

Adapted from WSDA AgBriefs



Washington brands on sidewalk outside Cattlemen's Association

In April, lawmakers passed Senate Bill 5959, a new law intended to modernize the Livestock Inspection Program (LIP) and restore financial solvency.

The program, which has roots dating back to the 1860's is entirely funded by fees paid by the livestock industry and receives no state general fund dollars.

The bill expanded the advisory board from six to 12 members. The law requires WSDA's director to appoint two Livestock Identification Advisory Committee members from each of six industry groups including beef producers, public livestock market owners, horse producers, dairy producers, cattle feeders, and slaughter facility owners. No more than two committee members may reside in the same county.

Most of the bill's new provisions went into effect on July 28, but there is still some confusion in the livestock community about the details.

"I'm just glad that you are doing this," said Sen. Judy Warnick, prime sponsor of SB 5959. "I've been hearing so many misstatements and misinformation out there, and we put so much work into (the bill), so we have to do whatever it takes to make it happen and dispel some of the misinformation that has been bandied about."

Warnick said the top two rumors she's hearing are:

- It's going to cost $20 per head to register your cows. FALSE
- Dairy farmers are going to have to brand all their cows. FALSE

However, it is true that cattle identification fees are changing.

- Inspection fees for identified cattle will be $1.21 per head.
- Inspection fees for unidentified cattle will be $4 per head.
- Inspection fees for horses are $3.85 per head.
- Audit fees for certified feedlots is 28 cents per head.
- A $20 call-out fee replaces the time and mileage fee and will be collected for all inspections.

And, dairy farmers do not have to brand their cows. They can identify them with electronic official individual identification for $1.21 a head or leave them unbranded/unidentified at the $4 per-cow rate.

A recent **WSDA Ag Briefs Article** outlines all of the new rates.

Animal Services Acting Assistant Director Jodi Hones reviewed the timeline for implementing the proposed rules. She explained that most of the new fees go into effect July 28. The use of the Electronic Cattle Transaction Reporting (ECTR) program and subsequent licensing fees and the certified veterinarian and field livestock inspector certification fees will require rule changes that will take several months to complete.

The ECTR system will accept credit cards and electronic checks when it becomes available as early as October. However, payment of fees with credit cards in the field will not be possible until a few legal and technical issues are resolved.

The law also expands the field of people authorized to do brand inspections. Trained certified veterinarians or field livestock inspectors dispersed throughout the state will be able to conduct brand inspections. Those certified by the department to conduct brand inspections will be required to collect and remit the fees outlined in the bill to WSDA.

Inspection training for certified veterinarians and field livestock inspectors will be scheduled in the coming months.

"We don't want to have any conflicts of interest with those authorized to do brand inspections," Jones said. "We plan to put some language in the [proposed rules] to make sure we have a sound asset protection program."

For more information about the Livestock Inspection Program, contact Jodi Jones at 360-902-1889 or Robbie Parke at 360-902-1836.

A Note from WSU Garfield County Extension Master Gardener Sue Fitzgerald

The plant clinics were busy this summer. We went on several house call to identify flowers and weeds growing in clients yards.

We had several questions on the vine weed that takes over anything that it grows on. This vine is Bryonia alba. The weed can kill any plant or tree that it grows on. Another problem that several people wanted information on was Thousand Canker Disease affecting Black Walnut trees. The trees have large branches dying. We have ended our Wednesday clinics for the year, but if you have a question, call the extension office or bring in a sample of the problem any time and Lisbeth will collect as much information as possible and contact us. We will come into the office and work to get you the answers you are looking for.

Bryonia alba

Below are a few reminders for this time of year!

* If you haven't dug garlic and onions, do it now so they can cure while the weather is still warm.
* Iris can be divided or moved now.
* Plant vegetables that like cool days and mature in 60 days.
* Perennial seeds can be started in a sheltered spot in the garden or a cold frame.
* Begin cleaning flower beds and veggie gardens as plants quit producing.
* Keep up with weeding as some weeds germinate as weather cools and stay small all winter, then grow, flower, and produce more weed seeds as the weather warms.
* Flower and vegetable seeds are short lived in comparison to weed seeds which can be viable in the soil for 10 to 50 years, for the hardy ones.
* Unless we get a lot of rain, keep watering enough to keep plant, tree and lawn roots hydrated.
* Order fall planted bulbs now, as the mail order company's have a good selection of bulbs that can't be found locally.
* Fall Crocus and Colchicum, start blooming in September, so order now!

Try growing shallots! They are milder and sweeter than garlic and more concentrated than onions. Plant in mid October, the same time as garlic, so roots can form, but not so early that they form leaves. Loosen soil and mix in some compost or fertilizer as needed. Separate the large bulb to the smaller bulblets, and plant them 1/2 inch deep and 4 to 5 inches apart. As spring weather warms, leaves will appear. By mid-summer, the leaves will yellow and die back, and your shallots are ready to harvest and cure for a few weeks. Store them in a dark, cool place 35 to 40 degrees; they will keep up to 9 months. There are two varieties; red shallots with a spicy flavor and are easy to peel, and French grey that are small bulblets and harder to peel. They do not keep well, so you must use them as soon as possible or freeze them. Some believe their flavor is the best.

Red Shallot

French Grey

A Note from Master Gardener Sue Fitzgerald, Continued

Fall is a good time to take Geranium cuttings. Cut a piece of the stem three inches long. Strip all but the top three leaves off the stem and let the stem cut dry for a day or so. Then, moisten the stem, dip in rooting powder, and plant in moist, coarse sand. Put it in a shady place and check it every few days for moisture and water as necessary. In about 3 to 4 weeks roots should have formed and the cutting is ready to plant in potting soil. Over winter your cutting in a place that will not freeze and keep soil moist. As the weather warms, place your geranium in bright light, but not direct sun. As the plant grows, harden off before putting in direct sun.

A few Spring flowering bulbs that are fairly deer resistant and can be planted in partial to full shade are:

Snowdrops

Snowdrops: Snowdrops are early bloomers with a delicate white bell shaped flower. They like cooler conditions in a sheltered area in spring, but are hardy enough to tough it out in extreme weather.

Scilla

Scilla: Scilla has star shaped flowers of blue, pink, white or purple. Scilla is very hardy and won't need a lot of care. Plant in an area the doesn't get a lot of water, as they don't like wet feet.

Wood Hyacinths (Blue Bells): Wood Hyacinths have blue, pink or white flowers and grow in the sun or shade. They are hardy in most conditions, with little care.

Wood Hyacinth

Leucojum (Snow Flakes): Leucojum has pure white bell flowers with green tips. They love the shade, but will grow in the sun, although the flowers may not last as long.

Erenthis (Winter Aconite or Buttercup): Erenthis has a frilly green collar of leaves surrounded by a yellow flower. They like a humus soil with a lot of moisture in the partial shade. They bloom very early in spring.

Leucojum

The Master Gardeners hope you all had a very productive summer and growing season! Don't forget to check us out on our website: https://extension.wsu.edu/garfield/ , or email questions to: mastergardeners@co.garfield.wa.us, or call us at 509-843-3701.

Happy Fall From your Master Gardeners!

"Life starts all over again when it gets crisp in the fall"

F. Scott Fitzgerald

Erenthis

WASHINGTON STATE UNIVERSITY EXTENSION
Master Gardener Program

WASHINGTON STATE UNIVERSITY EXTENSION
Master Gardener Program

Family Living

GETTING THE MOST OUT OF YOUR GAME

By Stephanie Smith, Ph.D., Statewide Consumer Food Safety Specialist, WSU
This article appeared in the Moscow-Pullman Daily News in September 2018

As hunting season approaches, you might be thinking of all the meals you will enjoy using your harvested wild game meat. Although many of you are veterans of processing wild game, it is always a good idea to review safe food handling practices. While most people freeze the meet, there are many other ways meat can be preserved for the year ahead. Below are some tips and tricks for getting the most out of your wild game.

Tips While In The Field

For smaller game animals, remove the viscera immediately to start the cooling process and make the meat easier to handle. Leave the skin on if you will be immediately transporting it back to camp, home or a cold storage locker, as this will keep the meat clean until you can finish skinning and dressing. If you are unable to transport the animal intact, you can remove the skin and quarter it in the field. Keep the meat clean by hanging it off the ground or placing clean game bags or canvas under it. Be sure to place the meat in game bags before carrying out.

If you are unable to carry out the animal right away, and temperatures will not drop below freezing overnight, skinning will be necessary to prevent spoilage. To keep a skinned animal overnight, create air space between it and the ground by placing rocks or poles underneath, allowing for air circulation and cooling of the meat. Plan to get all meat into cold storage as soon as possible. Although game bags can help keep meat clean, they will also hold in heat and increase the rate of spoilage. Make sure meat has cooled thoroughly before enclosing in bags or wraps.

Freezing Game meat

Be sure to use the right type of packaging materials when freezing. First, wrap the meat in plastic. This will keep air out of the package and preserve the meat better. A second wrapping in freezer paper will further protect the meat. Use freezer tape to close the package, as other tape will not adhere once the package is frozen. Meat may also be vacuum packed. Be sure to freeze vacuumed packed meat as quickly as possible to prevent the growth of *Clostridium botulinum* (the organism that produces the toxin that causes botulism). Label packages with the cut and type of meat, and freezing date, using permanent marker. For best quality, use frozen meat within 6-9 months.

Canning

Canning is another great way to preserve wild game. Since canned meat can support the growth of *Clostridium botulinum*, the meat will need to be canned using a pressure canner. Begin with good quality chilled meat that has been trimmed of excess fat and large bones. Meat will need to be cut into strips, cubes, or chunks prior to canning. Your local extension office can provide you with recipes and processes for canning game meats safely.

Drying

Many types of game meat make terrific jerky. For safe jerky, you will need to ensure that meat reaches a temperature high enough to kill microorganisms. This can be done by drying the meat first, then finishing the meat in the oven until it reaches 170° for bear meat, and 160° for other game meat. Cut meat into slices no thicker than 1/4 inch. Place strips in the dehydrator in single layers on the drying racks. When the meat has been dried sufficiently, finish it in the oven. The meat should crack but not break when bent, and not have any moist spots. Your local extension office has detailed recipes for making game jerky.

For more information on processing and preserving game, refer to the following Extension publications: *Big Game from Hunt to Home* (PNW517), *Making Jerky at Home safely* (PNW632), and *Canning meat, Poultry, and Game* (PNW361). Your local Extension office can provide you with these publications, or you can download them for free at https://pubs.extension.wsu.edu/ or at (855) 335-0575. Visit out website at http://extension.wsu.edu/foodsafety/. Follow us on Facebook at https://www.facebook.com/wsuextfs/ or on Twitter at https://twitter.com/wsu_foodsafety.

Have a safe and happy hunting season!

GOT APPLES?

Stephanie Smith, Ph.D, Statewide Consumer Food Safety Specialist, WSU
This article appeared in the Moscow-Pullman Daily News in October, 2018

Apples are the quintessential fruit of the fall season. Luckily, we live in the most productive apple growing region of the country. Each year, approximately 2.5 million tons of apples are harvested in Washington. That's 58% of all apples produced in the United States! Although Idaho may be famous for its potatoes, apples are produced in the southwestern area of the state.

Apples are generally harvested between August and November, so now is the perfect time to think about ways to incorporate this healthy and tasty fruit into your diet. Whether selecting apples from a U-pick, the grocery store, or your own tree, choose apples that are bruise-free, and firm to the touch for the best flavor and crunch. Inspect apples to make sure they are free of contaminants such as soil or bird feces, which can carry illness-causing microorganisms. Never eat apples that have dropped to the ground, as these can easily become contaminated with harmful bacteria. Although apples can be stored at room temperature, they can become soft or begin to spoil quickly. It is best to store apples in the refrigerator. This will prolog their shelf life and help retain quality for several months.

Apples should be washed well before cutting into them, consuming them, or using them in a recipe. Research performed by Dr. Girish Ganjyal and Ewa Pietrysiak, in the School of Food Science at Washington State University, found that a foodborne illness-causing microorganism, called *Listeria monocytogenes* (Lm), is most prevalent in the stem bowl and base of the apple. Apples also produce a waxy layer, which often contains small cracks that can provide another cozy niche for Lm to grow. Lm is naturally present in the environment, and these structures on the apple make it difficult to remove the microorganisms, even during washing. When washing apples, you will want to pay particular attention to the stem bowl and base. Since apples have a firm skin, you can gently scrub the skin under cold water using a vegetable brush.

Candy coated apples, such as caramel apples, are a popular treat during Halloween. However, in 2015, three popular brands of caramel apples were recalled due to a multi-state foodborne illness outbreak caused by contamination of the apples with Lm. This outbreak resulted in seven deaths. Lm has a relatively high mortality rate, especially in individuals who are pregnant, aged 65 years or older, children ages 5 and under, or those with weakened immune systems. It is believed that the puncturing of a stick allows nutrients and moisture to escape to the surface of the apple, thus providing a perfect environment for the growth of Lm. The sugary coating also provides nutrients for the growth of Lm. It is still safe to enjoy these delicious treats, just be sure to keep them refrigerated at 40°F or less, regardless if they are prepared fresh at home or store bought.

Apple cider is another tasty seasonal treat. However, apple cider has been implicated in foodborne illness outbreaks due to contamination with the organisms *Salmonella* and *E. coli.* To ensure your cider is safe, you should only drink cider that has undergone a pasteurization step to kill harmful microorganisms. If you purchase unpasteurized cider, you can pasteurize it at home by heating the cider to at least 160°F. After heating, pour the juice into a clean container and refrigerate.

In addition to enjoying apples in their fresh, candied, or cider forms, apples can be baked to create a variety of dishes, or canned for year-round enjoyment. If you wish to can apples, whether as an apple butter, pie-filling, or sliced, your local extension office has resources to help you can these products safely.

Which ever way you choose to enjoy these nutritious treats, there is no better time than now to reap the rewards of the apple harvest season.

Dr. Stephanie Smith is an Assistant Professor and Statewide Consumer Food Safety specialist for Washington State University Extension. She can be reached at food.safety@wsu.edu or at (855)335-0575. Visit our website at: http://extension.wsu.edu/foodsafety/ . Follow us on Facebook at https://www.facebook.com/wsuextfs/ or on Twitter at https://twitter.com/WSU_foodsafety.

Garfield County 4-H

IT'S TIME TO ENROLL IN 4-H!!

WSU/Garfield County Extension offers projects in nearly any area in which you are interested, including sewing, cooking, crafts, photography, robotics, sheep, goats, dogs, swine, horse, beef and many others!

4-H kids and parents interested in enrolling or re-enrolling in 4-H for the 2019/2020 4-H year must have reached you 8th birthday by October 1, 2019. Grade level is no longer considered for 4-H enrollment.

Enrollment is all online through 4Honline. We will have an enrollment night to help walk you through the enrollment process, as well as explain the WSU enrollment fees and scholarship opportunities. **PARENTS MUST COME WITH YOUR CHILD** to help with their online enrollment information and to sigh the permission forms. It is recommended that all youth be enrolled in 4-H by December 31, 2019, for the upcoming year.

Garfield County Current Clubs are:

Creative kids
Sewing, creative arts and cooking. Leaders are Laura Dixon and Jessica Nelson.

Lucky Horseshoe

This horse club learns all about horses, spends time riding and goes on field trips. The Leader is Sara Lunsford.

Garfield County poultry & Rabbits

Learn all there is to know about poultry and rabbits! Learn to prepare for fair and judge! Leaders are Beverly Weatherspoon and Amy Van Vogt.

Garfield County Livestock Club

This group has all species; beef, sheep, swine. Leaders are Kim Feider, Sherry Ledgerwood, Derek Shawley, Bandie Lockard, Kayla Slaybaugh.

Blue Ribbon Livestock Club

This club has all species; beef, sheep, swine. Leaders are Tina Warren and Jessica Nelson.

If you would like more information about any of the above clubs, such as meeting dates, times and place please contact the leaders listed below:
Jessica Nelson, 509-843-6063, nelsonjgc@live.com
Sara Lunsford, 208-413-8167, sriley442@gmail.com
Beverly Weatherspoon, 509-843-6105, jone7533@alumni.uidaho.edu
Kim Feider, 208-413-2196, kimfeider14@gmail.com

LEADERS ARE NEEDED!!
With groups with growing numbers and interests in other projects, we are in need of more leaders in all areas of 4-H. If you or someone you know is interested in being a volunteer leader, please have them contact Lisbeth or Sheree at the Garfield County Extension Office, 509-843-3701, or drop by the office located at 757 Main Street in Pomeroy.

RETURNING 4-H MEMBERS RE-ENROLLING

Please follow the instructions below to re-enroll. Please call 843-3701 with any questions.

REENROLLMENT HELP SHEET

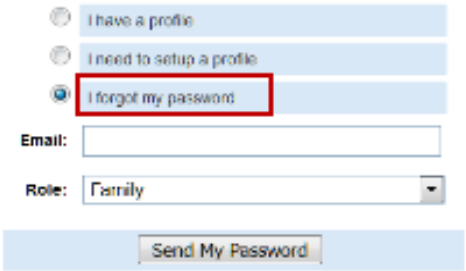
We are glad you are enrolling with Washington 4-H for another year. Welcome back!

To re-enroll in Washington 4-H, you will continue using 4HOnline and will need:

- A computer or tablet, An internet connection, A valid e-mail address
- A web browser (Firefox or Chrome work best; Safari will work in most instances. Internet Explorer is not supported.)

Logging into 4HOnline

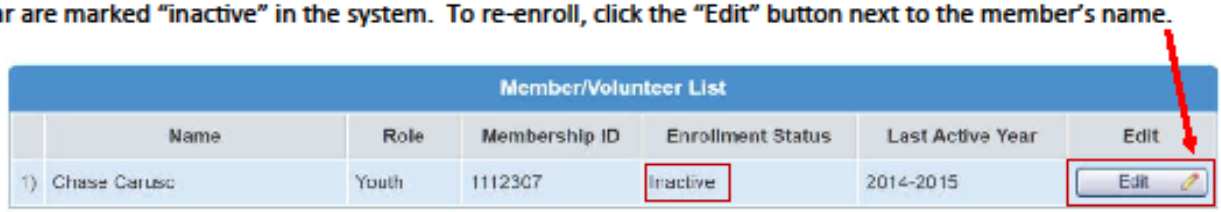
1. Go to https://wa.4honline.com (please note there is no "www" in the web address).
2. Choose "I forgot my password"
3. Enter your email address. This is the email address used to enroll last year .
4. Role should be on "Family"
5. Click "Send my Password"
6. You will receive an email from 4-H Online with your password
7. Copy your temporary password from your email.
8. Return to 4H Online, click I have a profile and enter your email address. Paste temporary password and click "Login"
9. When you login you will be prompted to reset your password. It needs to be at least 8 characters and contain at least one number and one symbol or capital letter.



Note: If you are unsure of your login information for 4HOnline, contact your county office. DO NOT set up a second profile.

Reactivating Previously Enrolled Members

Once you are logged in, you will see the Family Member/Volunteer list. Members who enrolled in the prior 4-H year are marked "inactive" in the system. To re-enroll, click the "Edit" button next to the member's name.

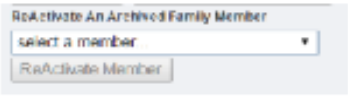


Member/Volunteer List

	Name	Role	Membership ID	Enrollment Status	Last Active Year	Edit
1)	Chase Carusc	Youth	1112307	Inactive	2014-2015	Edit

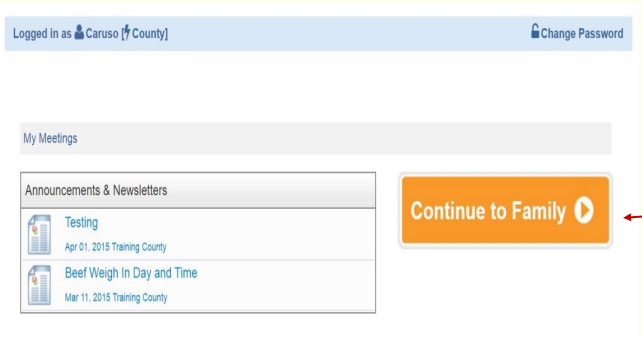
Scroll down past all of the personal information and click the "Enroll for 2016-2017" button. This will reactivate the member and change the enrollment status from "inactive" to "incomplete."

Note: If you have been inactive in 4HOnline for longer than one 4-H year, there is a chance your profile was archived automatically. If you don't see your member profile on the Member/Volunteer list, click the "ReActivate An Archived Family Member" dropdown list located above the active/inactive list. Your name should appear there! (If it doesn't, contact your county office for assistance). Select the profile, and click "ReActivate Member



RETURNING 4-H MEMBERS RE-ENROLLING

Please follow the instructions below to re-enroll. Please call 843-3701 with any questions.



Once you have logged in, you may be taken to your **home screen**. This is a place for your county extension office to share important information. **Check back often!**

To re-enroll your members, click the orange "Continue to Family" button.

Completing the Enrollment Process

Once you have clicked "Enroll for 2019-2020" *the information you provided during your original enrollment will automatically populate in each section.* Carefully read the text at the top of each page to help guide you through the enrollment process.

You'll be asked to:

- Verify/update your **Personal Information**
- Read and sign the waivers under **Additional Information**
- Verify/update the health information on the **Health Form**
- Verify your project and club enrollment under **Participation**.

Carefully review/edit information on each page. Required information is bold. Click the "continue" button at the bottom of each page to move to the next section.

Submit Enrollment

- Once you are sure that all your information is accurate click "Submit enrollment".
- **DO NOT** click **"Submit Enrollment"** unless you are 100% sure the information is complete. Once it is submitted, you won't be able to adjust it unless there is an issue.
- Once submitted, the enrollment goes to your county for approval.
- You will be notified of any issues with your enrollment via email. Once your enrollment has been accepted, and enrollment fees (if applicable) are paid, you will receive an email stating that you have been accepted and will have access online to your enrollment.
- When you go to re-enroll next year, you'll use the same information to login to the system, so keep it safe!

Garfield County

WASHINGTON STATE UNIVERSITY
EXTENSION

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Lisbeth Randall, Office Manager
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Jerky Marinade
From "So Easy to Preserve"
Cooperative Extension, The University of Georgia

1 1/2—2 pounds of lean meat (beef, pork or venison)
1/4 cup soy sauce
1 tablespoon Worcestershire Sauce
1/4 teaspoon each of black pepper and garlic powder
1/2 teaspoon onion powder
1 teaspoon hickory smoke-flavored salt

Combine all ingredients. Place strips of meat in a shallow pan and cover with marinade. Cover and refrigerate 1-2 hours or overnight. Products marinated for several hours may be more salty than some people prefer. If you choose to heat the meat prior to drying to decrease the risk of foodborne illness, do so at the end of the margination time. To heat, bring strips and marinade to a boil and boil for 5 minutes before draining and drying. If possible, check the temperature of several strips with a metal stem-type thermometer to determine that 160° has been reached. Remove the strips from the marinade and drain on clean, absorbent towels. Arrange strips on dehydrator trays or cake racks placed in backing sheets for oven drying. Place the slices close together, but not touching or overlapping. Place the racks in a dehydrator or oven preheated to 140°F. Dry until a test piece cracks but does not break when it is bent (10 to 24 hours for samples not heated in marinade). Samples heated in marinade will dry fast. Begin checking samples after 3 hours. Once drying is completed, pat off any beads of oil with clean, absorbent towels and cool. Remove strips from the racks. Cool. Package in glass jars or heavy plastic food storage bags. Vacuum packaging is also a good option.

If the strips were not heated in marinade prior to drying, they can be heated in an oven after drying as an added safety measure. Place strips on a baking sheet, close together, but not touching or overlapping. For strips originally cut 1/4 inch thick or less, heat 10 minutes in an oven preheated to 275°F.