

4-H News to Know February 2015



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Beginning in 2015, we will start publishing the newsletters electronically. (NOT YET, but sometime soon) Please submit your email address to us or make sure we have your current email address so we can keep you in the loop. If you do not have internet and prefer to continue to receive a mailed newsletter, YOU MUST NOTIFY US WITH YOUR REQUEST or stop by the Extension Office for the newsletter. We will also take newsletters to the library for distribution. This will help to keep our rising costs down and keep up with advancing technology. Please send your email address to the office email address above.

4-H Online updated – For those 4-H members that want to check their online enrollment, etc. the new url is: ***co.4honline.com***. If you bookmarked the other one, make sure to delete it. And if you do go in and make any changes – REMEMBER, YOU MUST NOTIFY THIS OFFICE WITH THOSE CHANGES!!!!!!

Communication – As we kick off the new 4-H year, we want everyone to know how we communicate with you. We have a lot of important information, deadlines, requirements, new changes and most importantly, education opportunities to make you aware of. Our primary method of communication is through the *4-H News to Know* newsletter. It would be most helpful to read this newsletter every month! Please make sure your mailing address and email address are both up to date. On occasion, we mail letters or postcards to our 4-H members and leaders. Please open your mail and read everything you receive from our office. Finally, all things related to the Custer County Fair are communicated through the Fair Book, which is generally completed and posted on www.custercountygov.com/ext in May or early June.

Keep in mind that many 4-H contests and activities have registration forms and deadlines. These will be covered in the newsletter. We publish this newsletter nearly every month, with a few combined monthly issues near fair time and the end of the year. Information that needs to be included in the newsletter needs to be submitted to the Extension Office by the 25th of each month. If information is not included in the newsletter, but needs to be sent out, we will send out an email to all 4-H and FFA members. So please keep current on viewing your email as well.

Spring Carnival – mark your calendar – Wednesday, March 11th from 4:30 to 6:30 p.m. in the multi-purpose room at school. This is a little earlier start and ending time! Remember, this is your chance to help your club with this fundraiser.

We will have lots of fun activities and games for youth of all ages. Pizza and pop will be available for purchase. Invite your family and friends to come out for a fun time!

Trailblazers 4-H Club Meeting - The membership decided to keep the first Sunday of each month as their meeting date at 1 p.m. at the Shy's residence. The schedule for the meetings: Feb. 1, March 1, **April 12**, (this is a different date) May 3 and June 7th. Need to verify if there will be a July meeting.

Silver Spurs 4-H Club Meetings - The Silver Spurs Club meetings will be held on the second Thursday each month. The meetings will start at 4:15 p.m. and be held at the Courthouse Annex Building again. The rest of the schedule is: Feb. 12, March 12, April 9, May 7 and June 11.

Triple C Clovers 4-H Club Meeting – The first meeting of the Triple Cs was held on Jan. 2, 2015 at 12:30 p.m. in the great room at school. The members in attendance agreed on the following schedule for their meetings: Feb. 15, March 22, April 12, May 24 and June 14th. All meetings will begin at 12:30 p.m. in the great room at school.

Leadership Training – Your new club executive board members attended an officer training held on January 31st in Pueblo. The 9 youth who went; Casey Brandon, Kylie Carter, Kyleigh Martin, Kaya Huffman, Justice Saraceno, Dalton Wommack, Ryan Young, and Katlyn Freeburg, learned about their responsibilities of an officer in their clubs, Parliamentary Procedure, and how to make it fun! These newly elected officers are now the Custer County Teen Council that will be putting on the Custer County 4-H Camp. Look for more information in future newsletters. Thanks to the Custer County 4-H Foundation for helping send our youth to the Officer Training. Thanks to Erin and Joey Saraceno for driving too! We can't do it without our parent volunteers!

Meat Quality Assurance Class – The MQA class and trailer will be on March 14th at 10am at the annex. If you are a first time livestock exhibitor or are turning 14, this class is required. I highly encourage all to attend as we have experts in their fields teaching, and for the first time ever, the MQA trailer will be coming to Custer County! Please contact the office for more information.

Market Livestock Weigh in Schedule

Market Beef – Jan. 11 (done), March 15, May 31 and June 28 (this one is optional)

Market Sheep, Goats and Swine (swine –not sure yet) – April 26, May 31 and June 28.

Rabbits – to be determined.

Hunter Safety Certification - Hunter Safety will be provided this year to all 4-Her's and is required to participate in the 4-H shooting sports. This year's class will be held March 7-8th. Please contact the Extension office to put your name on the list. Please plan on attending if you are new to the Custer County 4-H Shooting Sports.

Public Speaking Contest - The Public Speaking event will be held on April 2nd. As you know this is an optional event and I encourage all of you to learn to hone your public speaking skills. These skills will prepare you for life happenings such as interviews and how to address crowds and individuals. This confidence building skill is invaluable to learn and have fun in the process! If you are a senior 4-Her, this can even provide the chance to compete at the State Conference held on the CSU Campus in June. Practices will start in February, but it's never too early to start practicing at home and even writing your speech. This is a wonderful chance to overcome your fears of public speaking.

Public speaking practices will take place on Mondays starting February 23rd and go every Monday through March 30th (except for March 23rd) from 4:15 to 5:15 at the Annex. Practices are not required but highly encouraged to get the most out of this experience. There are four kinds of speeches: prepared, demonstration, impromptu, and interpretive. For more information or to sign up, please contact the Extension office.

Retinal Scans for Colorado State Fair Animals

Please mark your calendars if you are planning to exhibit livestock at the State Fair. All livestock going to State Fair need to be brought to the Fairgrounds from 1-2 p.m. on May 17th. Each exhibitor will be responsible for the cost of \$5 per animal for the retinal scan. They will also pay for the mileage

reimbursement for Mr. Covington's travel to Westcliffe to perform the scans. More information will be sent out at a later date.

Robotics is back! Any youth wishing to participate in the 2015 Robotics team, please contact the office. The Robotics team will learn how to build and program robots, then compete with other teams from across the state. There will also be a robotics camp offered in July (more details to come). A leader for the elementary group is needed, no experience necessary. For more information, please contact the Extension office.

CAMPS:

District Retreat

All 4-H members, ages 13 to 18 are invited to attend the South Central 4-H District Retreat March 20-22, 2015 at the Silver Cliff Ranch near Mt. Princeton Hot Springs in Nathrop, Colorado. This is a very fun and educational camp, planned by our district youth officers and offered to our members at a great price. We highly encourage you to attend!

Registration fee is \$125 per member which includes meals while at the camp, lodging, workshops and a camp t-shirt. Deadline to register is Feb. 24th. Please stop by to pick up the registration forms. Additional information was emailed to all 4-H members in the correct age group. Check your email!

Grab the Torch Summer Institute in Colorado

The Colorado State 4-H Office has a working relationship with an organization called Grab the Torch. In 2014, this organization hosted one of their summer institutes in Colorado and 5 Colorado 4-H members attended. These members all expressed that this was a life changing event for them to attend. Once again, Colorado 4-H members high school age Freshmen to college age Freshmen are qualified to apply. The deadline to apply is March 15th. The cost is \$2,000 but there are many full and partial scholarships available through the State 4-H Office. There are ONLY EIGHT spots available for Colorado so if you are interested, you need to apply NOW!

An email blast will be sent out to all age appropriate 4-H members with more details. The application will only be available online. If you are interested, please give us a call, so we can help if needed.

Custer County 4-H Foundation

The Custer County 4-H Foundation is looking for board members. As a board member, you will help contribute to the 4-H youth by helping them attend camps and conferences, furthering their 4-H experience. Without the 4-H Foundation, camps would be very expensive and there would be no awards ceremony! For more information please contact the Extension office. We appreciate your willingness to help!

Courthouse will be closed on Monday, February 16th for Presidents' Day

Please check out the Custer County CSU Extension website: www.custercountygov.com/ext

2015 Custer County Fair

July 13-19, 2015

Ingredient Substitutions

Fact Sheet No. 9.329

Food and Nutrition Series | Preparation

by P. Kendall*

How many times have you been ready to cook and found you were out of a certain ingredient? Sometimes it is inconvenient to run out and purchase the necessary ingredient – it's easier to use a similar product as a replacement.

There are, however, several factors to consider when substituting ingredients. Take into account differences in flavor, moisture, texture and weight.

Substitutions with an acid factor, such as molasses, need to be neutralized to avoid changes in the flavor and texture of the product. Differences in sweetening and thickening power need consideration

in sugar and flour substitutions. To help avoid disappointments when substituting ingredients, understand the physical and chemical properties of all ingredients. Measure accurately.

Table 1 gives substitutes that may be used to get a finished product similar to the original. The following abbreviations are used:

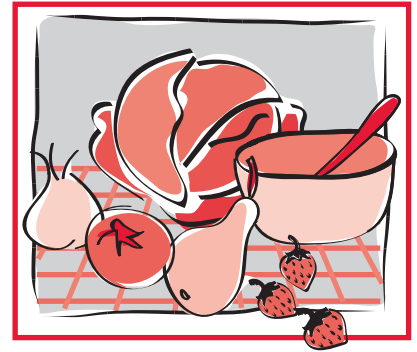
tsp = teaspoon

Tbsp = tablespoon

oz = ounce

lb = pound

See Table 1
pages 2-5
for ingredient
substitutions



Quick Facts

- It is sometimes more convenient to substitute an ingredient than it is to go out and purchase the necessary ingredient.
- When substituting ingredients, take into account the differences in taste, moisture content, texture and weight.
- When substituting for sugar and flour, consider the differences in sweetening and thickening power.
- Understand the physical and chemical properties of all ingredients.
- Measuring accurately will help avoid disappointment.

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Table 1. Ingredient equivalents.

Ingredient	Amount	Substitutions
Allspice	1 tsp	1/2 tsp cinnamon plus 1/2 tsp ground cloves.
Apple pie spice	1 tsp	1/2 tsp cinnamon, 1/4 tsp nutmeg, and 1/8 tsp cardamom.
Arrowroot, as thickener	1 Tbsp	2 Tbsp all-purpose flour. 1 Tbsp cornstarch.
Baking powder, double acting	1 tsp	1/4 tsp baking soda, 1/2 tsp cream of tartar and 1/4 tsp cornstarch; 1/4 tsp baking soda plus 5/8 tsp cream of tartar; 1/4 tsp baking soda plus 1/2 cup buttermilk, sour milk or yogurt (decrease liquid in recipe by 1/2 cup); 1/4 tsp baking soda, 1/2 Tbsp vinegar or lemon juice plus sweet milk to make 1/2 cup (decrease liquid in recipe by 1/2 cup); 1/4 tsp baking soda plus 1/4 cup molasses (decrease liquid in recipe by 1-2 Tbsp); 1 1/2 tsp phosphate or tartrate baking powder.
Bay leaf, crushed	1 tsp	1 whole bay leaf.
Brandy	1/4 cup	1 tsp brandy extract plus enough water or liquid called for in recipe to make 1/4 cup.
Bread crumbs dry	1/4-1/3 cup	1 slice bread; 1/4 cup cracker crumbs; 2/3 cup rolled oats.
soft	1/2-3/4 cup	1 slice bread.
Broth, beef or chicken	1 cup	1 bouillon cube, 1 tsp (1 envelope) powdered broth base or 1 tsp instant granules dissolved in 1 cup water.
Butter	1 cup	1 cup margarine; 7/8 to 1 cup hydrogenated shortening plus 1/2 tsp salt; 7/8 cup lard plus 1/2 tsp salt; 7/8 cup oil plus 1/2 tsp salt.
Catsup	1 cup	1 cup tomato sauce plus 1/2 cup sugar and 2 Tbsp vinegar (for use in cooking).
Chili Sauce	1 cup	1 cup tomato sauce, 1/4 cup brown sugar, 2 Tbsp vinegar, 1/4 tsp cinnamon, and dash of ground cloves and allspice.
Chives, finely chopped	1 Tbsp	1 Tbsp green onion tops, finely chopped.
Chocolate, unsweetened	1 oz	3 Tbsp cocoa plus 1 Tbsp butter or fat; 3 Tbsp carob powder plus 2 Tbsp water.
semisweet	1-2/3 oz	1 oz unsweetened chocolate plus 4 tsp sugar.
Chocolate chips, semisweet, melted	6 oz pkg (2/3 cup)	2 squares (2 oz) unsweetened chocolate, plus 2 Tbsp shortening and 1/2 cup sugar.
Coconut, grated, dry	1 Tbsp	1 1/2 tbsp fresh coconut, grated.
Coconut milk	1 cup	1 cup milk.
Coconut cream	1 cup	1 cup cream.
Cornstarch	1 Tbsp	2 Tbsp all-purpose flour; 2 Tbsp granular tapioca; 1 Tbsp arrowroot.
Corn syrup	1 cup	1 cup granulated sugar plus 1/4 cup water or other liquid called for in recipe; 1 cup honey.
Cracker crumbs	3/4 cup	1 cup dry bread crumbs.
Cream:		
half & half (10-12% fat)	1 cup	1 1/2 Tbsp butter plus 7/8 cup milk; 1/2 cup coffee cream plus 1/2 cup milk; 1 cup evaporated milk, undiluted.
coffee (20% fat)	1 cup	3 Tbsp butter plus 7/8 cup milk.
heavy (36-40% fat)	1 cup	1/3 cup butter plus 3/4 cup milk (for baking only, will not whip).

Table 1, continued.

Ingredient	Amount	Substitutions
sour cream	1 cup	7/8 cup buttermilk or sour milk; 1 cup yogurt; 1 1/8 cup powdered nonfat dry milk, 1/2 cup warm water and 1 Tbsp vinegar (mixture will thicken in refrigerator in a few hours); 1 cup evaporated milk plus 1 Tbsp vinegar (allow to stand 5 minutes before using); 1/3 cup buttermilk, 1 Tbsp lemon juice, and 1 cup smooth cottage cheese blended together; 7/8 cup milk, 1 Tbsp lemon juice, and 2 Tbsp butter or margarine.
whipped cream	2 cups	1 cup chilled evaporated milk plus 1/2 tsp lemon juice, whipped until stiff.
Cream of tartar	1/2 tsp	1 1/2 tsp lemon juice or vinegar.
Dill, fresh	1 head	1 tsp dill seed.
Eggs whole, large	1 egg (3 1/3 Tbsp)	2 1/2 Tbsp dried, sifted eggs plus 2 1/2 Tbsp water; 3 1/3 Tbsp frozen egg yolks, thawed; 1/2 tsp baking powder, 1 Tbsp vinegar and 1 Tbsp liquid (in baking); 1 egg in every 3 can be replaced with 1 Tbsp cornstarch in baking; Soften 1 Tbsp unflavored gelatin in 3 Tbsp cold water, add 3 tsp boiling water, cool and beat until frothy, add to recipe (reduce other liquid by 2 Tbsp); 1/4 cup commercial egg substitute.
whites	1 egg white (2 Tbsp)	2 tsp dried egg white plus 2 Tbsp water; 2 Tbsp frozen egg whites, thawed.
yolks	1 egg yolk (1 1/3 Tbsp)	2 Tbsp dried egg yolks plus 2 tsp water; 4 tsp frozen egg yolks, thawed.
Flour, pastry	1 cup	7/8 cup all-purpose or bread flour.
cake	1 cup	7/8 cup all-purpose flour (1 cup less 2 Tbsp).
white, all-purpose for thickening	1 Tbsp	1/2 Tbsp cornstarch, potato starch, rice starch or arrowroot; 1 Tbsp quick-cooking tapioca; 1 Tbsp waxy rice or corn flour; 2 Tbsp granular cereal; 2 Tbsp browned flour; 1 1/2 Tbsp whole wheat flour.
white, all-purpose for baking	1 cup	1 1/2 cups bread crumbs; 1 1/8 cups cake flour (1 cup plus 2 Tbsp); 7/8 to 1 cup corn meal; 1/2 cup cornstarch plus 1/2 cup rye, potato or rice flour (sift together 6 times, use with 2 tsp baking powder per cup in quick breads as wheat flour allergy substitute); 13/16 cup gluten flour (1 cup less 3 Tbsp); 5/8 cup potato flour; 7/8 cup rice flour; 1 1/3 cups rolled oats; 1 1/4 cups rye flour; 1/8 cup soy, cottonseed, peanut or carob flour plus 7/8 cup all-purpose flour; 1/3 cup wheat germ plus 2/3 cup all-purpose flour; 1 cup minus 1 Tbsp whole wheat flour.
Note: Specialty flours added to yeast bread recipes will result in a reduced volume and heavier product.		
white, all-purpose, self-rising	1 cup	1 cup all-purpose flour plus 1 1/4 tsp baking powder and 1/4 tsp salt.
Garlic	1 clove, small	1/8 tsp garlic powder or instant minced garlic; 1/2-1 tsp garlic salt (reduce amount salt called for in recipe).
Gelatin, flavored	3-oz package	1 Tbsp plain gelatin plus 2 cups fruit juice.
Ginger, candied or raw	1 Tbsp	1/8 tsp powdered ginger.
Herbs, fresh	1 Tbsp	1 tsp dried herbs.
Honey	1 cup	1 1/4 cup sugar plus 1/4 cup liquid (use liquid called for in recipe).
Horseradish, grated fresh	1 Tbsp	2 Tbsp bottled horseradish.
Italian seasoning	1 tsp	1/4 tsp basil, 2/3 tsp dried parsley, and pinch oregano.
Lemon, whole	1 lemon	1 to 3 Tbsp juice, plus 2 to 2 1/2 tsp grated rind.
juice	1 tsp	1/2 tsp vinegar.
grated rind or peel	1 tsp	1/2 tsp lemon extract.
Lemon grass	1 Tbsp	1 Tbsp lemon peel.
Maple sugar, grated	1 Tbsp	1 Tbsp white sugar.
	1/2 cup	1 cup maple syrup (decrease liquid by 1/2 cup).

Table 1, continued.

Ingredient	Amount	Substitutions
Maple syrup	about 2 cups	Combine 2 cups sugar and 1 cup water, bring to clear boil; take off heat; add 1/2 tsp maple flavoring.
Marshmallows, miniature	1 cup	10 large marshmallows.
Mayonnaise (for use in salads and salad dressings)	1 cup	1 cup yogurt, sour cream or cottage cheese pureed in blender (use for all or part of mayonnaise called for in recipe).
Milk, buttermilk or sour	1 cup	1 cup minus 1 Tbsp sweet milk plus 1 Tbsp vinegar or lemon juice; let stand 5 minutes; 1 cup sweet milk plus 1 1/4-1 3/4 tsp cream of tartar; 1 cup yogurt (plain).
skim	1 cup	1/3 cup instant nonfat dry milk plus 7/8 cup water.
whole	1 cup	1/2 cup evaporated milk plus 1/2 cup water; 1 cup skim, 2% or reconstituted dry milk; 1 cup soy or almond milk; 1 cup fruit juice or potato water in baking; 1 cup water plus 1 1/2 tsp butter in baking; 1 cup buttermilk plus 1/2 tsp baking soda (decrease baking powder by 2 tsp).
sweetened condensed	1 cup	Combine 1 cup plus 2 Tbsp dry milk with 1/2 cup warm water and 3/4 cup sugar, mix well; may set pan in bowl of hot water to dissolve sugar.
Mint leaves, fresh chopped	1/4 cup	1 Tbsp dried mint leaves.
Molasses	1 cup	3/4 cup sugar, increase liquid by 5 Tbsp, decrease baking soda by 1/2 tsp, add 2 tsp baking powder; 3/4 cup sugar plus 1 1/4 tsp cream of tartar, increase liquid in recipe by 5 Tbsp.
Mushrooms, fresh	1 lb	3 oz dried plus 1 1/2 cups water; 1 8-oz can, drained weight.
Mustard, dry	1 tsp	1 Tbsp prepared mustard; 1/2 tsp mustard seeds.
Nuts	1 cup	1 cup rolled oats, browned (in baked products).
Oil (for sauteing)	1/4 cup	1/4 cup melted margarine, butter, bacon drippings, shortening or lard.
Onion	1 small	1/4 cup chopped, fresh onion; 1 1/3 tsp onion salt; 1 to 2 Tbsp instant minced onion; 1 tsp onion powder.
Onion powder	1 tsp	1/4 cup fresh onion, chopped.
Orange	1 medium	6 to 8 Tbsp juice; 3/4 cup diced; 2 to 3 Tbsp grated rind.
Orange peel, dried	1 Tbsp	2 or 3 Tbsp grated fresh orange peel (peel of medium orange).
Parsley, fresh	1 Tbsp	1 tsp parsley flakes.
Pepper, white	1 tsp	1 tsp black pepper.
Peppers, green or red bell, dried	1 Tbsp	3 Tbsp fresh bell pepper, dried chopped.
Pimento	2 Tbsp, chopped	3 Tbsp fresh red bell pepper; 1 Tbsp dried red pepper, rehydrated.
Pumpkin pie spice	1 tsp	1/2 tsp cinnamon, 1/4 tsp ginger, 1/8 tsp allspice and 1/8 tsp nutmeg.
Rennet	1 tablet	1 Tbsp liquid rennet.
Rice	1 cup cooked	1 cup converted, regular brown or wild rice, cooked; 1 cup bulgur or pearl barley, cooked.
Rum	1/4 cup	1 Tbsp rum extract plus enough liquid to make 1/4 cup.
Shortening, melted solid	1 cup 1 cup	1 cup cooking oil. 1 cup minus 2 Tbsp lard; 1 cup butter or margarine (decrease salt in recipe by 1/2 tsp).

Table 1, continued.

Ingredient	Amount	Substitutions
Sugar, brown	1 cup	1 cup granulated sugar; 1 cup granulated sugar plus 1/4 cup unsulphured molasses; 1/2 cup liquid brown sugar.
confectioners or powdered granulated	1 cup	3/4 cup granulated sugar (for uses other than baking).
	1 cup	1 cup firmly packed brown sugar; 1 1/3 cup confectioners sugar (for uses other than baking); 1 cup corn syrup, reduce other liquid by 1/4 cup (never replace more than 1/2 of sugar called for in recipe with corn syrup); 13/16 cup honey (1 cup less 3 Tbsp); reduce liquid in recipe by 3 Tbsp for every cup of honey added, add a pinch of baking soda to neutralize acidity; 3/4 to 1 cup maple syrup minus 3 Tbsp other liquid; 1 cup molasses or sorghum plus 1/2 tsp baking soda, omit or decrease baking powder by 1 tsp, reduce other liquid by 6 Tbsp; 1 cup raw sugar.
Tapioca, quick-cooking	1 1/2-2 Tbsp	4 Tbsp pearl tapioca, soaked.
quick-cooking for thickening	1 Tbsp	1 Tbsp flour.
Tomatoes, fresh	2 cups, chopped	1 16-oz can, drained.
packed	1 cup	1/2 cup tomato sauce plus 1/2 cup water.
canned	1 cup	1 1/3 cups diced tomatoes simmered 10 minutes.
Tomato juice	1 cup	1/2 cup tomato sauce plus 1/2 cup water.
Tomato sauce	2 cups	3/4 cup tomato paste plus 1 cup water.
Tomato soup	1 10 3/4 oz. can	1 cup tomato sauce plus 1/4 cup water.
Vanilla bean	1/2 bean	1 Tbsp vanilla extract.
Worcestershire sauce	1 tsp	1 tsp bottled steak sauce.
Yeast, active dry (1/4 oz)	1 package	2 1/2 tsp dry yeast or 1 compressed yeast cake.
Yogurt	1 cup	1 cup buttermilk; 1 cup cottage cheese, blended until smooth; 1 cup sour cream.

* For conversion to metrics, use the following equivalents:

1 tsp = 5 milliliters	1 lb = .45 kilograms
1 Tbsp = 15 milliliters	1 cup = 240 milliliters
1 oz = 28 grams	

FYI

February 2015

Ranchers...Stop by the Extension Office to pick up your 2015 IRM Redbook. There are only a few left!

Colorado State Forest Service Seedling Tree Applications

Applications to order your seedling trees are available in the Extension Office. The selection of different trees AND a new selection of grasses and flowers have been added to the application form. Stop by today to get your copy or call and we will mail one to you. As always, order early for the best selection.

The CSFS will also be hosting two Seedling Tree Workshops to help learn about the seedling tree selections and how to plant with the greatest survival rate possible. The first will be held at the Fremont County 4-H Building in Canon City on Saturday, Feb. 28th from 10 a.m. to noon.

The second will be held at the Custer County Library Community Room on Main Street in Westcliffe on Saturday, March 7 from 10 a.m. to noon. Admission is FREE but you must RSVP: call 719-275-6865 or email laurenj@colostate.edu with your registration.



A Lasting Legacy

This workshop is being offered on March 10th, 9:30 a.m. to 4:00 p.m. at Cliff Lanes in Westcliffe. Registration costs are \$25 for first family member and \$10 for each additional one. Lunch and materials will be provided. To register, call Robin at 783-2514 or email at robin.young@colostate.edu

This workshop will help you to learn about:

- Sharing your values and life lessons with future generations
- Gifting your personal possessions having emotional value
- Planning for important end-of-life issues
- Transferring your finances and real estate

Call today to register!

Spirit of Colorado Agriculture Showcased in Winning Photos

BROOMFIELD, Colo. – Winning entries in the 17th annual “Colorado...it's Agricultural” Photography Contest showcase the diversity of Colorado’s agricultural landscape. From active sheep and peaceful wheat to a future dairyman and dawn breaking on a combine, this year’s photo contest winners captured the “spirit” of Colorado agriculture.

<https://www.colorado.gov/pacific/agmain/news/242015-spirit-colorado-agriculture-showcased-winning-photos>

Income Tax Help!!

AARP is meeting at the community room of the library every Wednesday from now to the April 15th filing date from 7:30 a.m. to 1 p.m. WALK INS WELCOME!! They are helping with tax forms and filing the returns. Check it out!!

2015

COLORADO ENERGY MASTER

PROGRAM



**Empower Yourself.
Energize Your
Community.**



How does our energy system really work today? What are the costs and benefits of different energy futures? What energy options are right for you and your community?

Colorado State University Extension is offering up to 30 hours of energy education covering our current energy system, energy policy, renewable energy, transportation alternatives, climate change, home efficiency, options, energy innovations, and more. Whether you've always been curious about our energy system or if you've been learning about energy for years, the program has something for you.

- ☑ Flexible participation—take 1 or more courses; Energy Master certification optional
- ☑ High quality instructors—mix of professors, educators, and on-the-ground energy practitioners
- ☑ Applicable information—Colorado hot topics and practical homeowner options covered
- ☑ Convenient yet rich—mix of online and experiential, in-person seminars
- ☑ Low cost—including discounts for students, teachers, and aspiring Energy Masters
- ☑ Professional development —credits offered for teachers and realtors

Join the 130+ participants to date that have participated in our program. Those wishing to become certified Colorado Energy Masters successfully complete all coursework as well as an energy project of their choice. Coursework runs from February 17 – March 28, 2015.

Registration open January 5—February 10

For more information, testimonials, and to register:
www.ext.colostate.edu/energymaster

Colorado State University Extension programs are available to all without discrimination. If you need special accommodations to participate in courses, please contact Cary Weiner at cary.weiner@colostate.edu or (970) 491-3784 during the open registration period.

**Colorado
State
University**

Extension

COLORADO ENERGY MASTER



January 22, 2015

plantclinic.agsci.colostate.edu/

Landscape Health Update: Cold Snap Lingering Effects

The sudden, dramatic temperature drop in early November 2014 will have lingering impacts on trees along the front range of Colorado. Through early and mid-fall, warm temperatures persisted, in some cases setting record highs for that date such as (81-degrees F on October 24). Wild fluctuations preceded the deep freeze in the days leading up to the event, with daytime highs hovering around 60 and nighttime temps in the lower 30's.

In preparation for winter, plants undergo a two-stage process: dormancy and chilling. This cold hardening enables woody plants to withstand winter weather. As day length shortens, deciduous woody plants undergo a process called resorbing, which converts leaf starch, proteins, and other complex molecules into soluble molecules, such as sugars and amino acids, and moves them into storage cells. These storage cells are in the inner bark of twigs, the outer sapwood of the main stem and in root tissues. In spring, the stored nutrients are remobilized and used for the flush of new leaves and burst of growth in other tissues.

Once resorption is complete, woody plants form an abscission layer between the branch and the leaf petiole. This abscission layer closes off pathways into the leaf, protecting the plant from drying out or invading diseases, and allowing the leaf to fall. Gradually freezing temperatures ensure the plant is cold hardy for the remainder of winter.

On November 10, the high was 58F at 8 am, by 11 pm that day the temperatures had dropped to 16F. Due to the warm, lengthy fall, trees and shrubs had not completed hardening off for winter. When our freeze hit, many plants such as elms, callery pears, and oaks had not completed the hardening off process. Many conifers and deciduous trees and shrubs showed freeze damage immediately with straw-colored needles or flash-frozen leaves. Buds and shoots suffered freeze injury that in some cases resulted in death of buds or the entire plant, however, long-term impact on these buds won't be seen until spring.

Leaves left on trees from the rapid temperature change are known as a "marcescent" fall, defined as "to wither without falling off". There are two types of marcescence, one type occurs naturally on trees such as English Oak, hazelnuts and beech. The other type, which is what happened to some of the Front Range trees, occurs when temperatures plummet before the abscission layer has formed, killing the leaves but leaving them attached to the tree. Marcescence does not directly harm the tree, but if there is a snowfall while the leaves still cling to the tree, marcescence creates a high risk of limb breakage from snow being held by the leaves. Winds eventually will remove the leaves.

Conifers showed damage immediately. While yellow or brown needles with some green where the needles attach to the branch, are a hallmark of winter damage to pines, symptoms from the intense cold are needle scorching, with tips turning white, gray, silver or straw-colored leaving green fascicles near the branch. Twig dieback can also occur. The freeze burned needles will not green up, but new needles will mask the damaged ones. If you are concerned about the evergreen's health, gently press a bud, found on the tips of the twigs and branches, between your thumb and first couple fingers. If the bud feels soft, it is alive and will produce new growth the following spring. If the bud is dry and brittle, it is dead. Check in several places around the plant as not all buds may have been killed.

Monitor your trees this winter and next spring for sign of damage. Look for black, shriveled shoots or buds. Winter watering may help, but care of the trees in the spring will depend on how much freeze damage the trees have sustained. Additional fertilizer in the spring is not recommended. Conifers may grow out of the damage with new growth masking the frozen needles. Deciduous trees may need judicious pruning to remove the dead twigs and branches.