

Northeast Extension Connection

January—March

2011

Volume 8

Issue One

MAKE YOUR MOVE...

by

Bill Taylor, Northeast Area Community Development Educator



Qualifying for a home loan is like building a house – you have start with a strong foundation and the size of that foundation is related to the size of your income. Low income means the house will need to be small.

Credit history is part of the framework that rests on your income foundation. How have you been at paying your bills? What is your credit rating? Do you pay your bills on time and in full? Do you keep up with installment payments? How much debt do you have? Will your debt load change in the future?

Another factor that influences your ability to purchase a home is your employment history. you change jobs every year or two? Have you been fired recently? How stable is your employer and the position you hold? How many people work in your household? If you fall behind, can someone else in the household take on a job to help make payments?

A third factor which will help you purchase a home is a savings account. You will be required to have some savings if you wish to buy a home. There are costs involved in

purchasing a home and you will, in most cases, be expected to pay some, if not all, these costs.

Figuring out what loans you will qualify for is like putting together a giant jigsaw puzzle, the kind of puzzle that could have several solutions. The Loan Officer will ask you questions and each answer is a part of your jigsaw puzzle. Hundreds of loans exist, but each one has slightly different guidelines, or rules. There may be several loan types that you qualify for, or there may be only one. You may be able to purchase right away, or you may need to reduce debt, wait for more time on a job, increase income, or save some money first.

Your Loan Officer should tell you what you need to do to qualify for a home, how much you can qualify for, and approximately how much cash you will need to cover your application fee, down payment, and closing costs.

One very important thing to keep in mind is that a Lender is going to tell you how much loan payment you can *qualify* for, not how much loan payment you can *afford*. Many people can qualify for a higher payment than they can afford. *You* must determine how much you can afford for a house payment, in *your* monthly spending plan, with *your* life-style.

(Continued on page 2)

(Continued from
page 1)



Many things affect how much money you have available for a house payment that the Lender does not take into account in the qualifying process – your lifestyle, a medical condition, whether you like to travel or eat out often. Do you have children? Do you have pets and vet bills? How far do you drive to work and how much does gas cost you? How much is your car insurance? All of these things will vary greatly from person to person. You must take all of these things into account for your monthly spending plan. Since they are discretionary or flexible expenditures, the Lender does not use them in your debt consideration, so you must determine how much you can af-

ford to spend each month. Regardless of your income, you need to look at your current spending plan, also known as your budget. If you spend too much on a house payment, you won't have any money left over for any of the day-to-day extras, and you may not even have enough for necessities if conditions change slightly or there are unexpected expenses.

So, how do you determine whether you can budget enough for home ownership? First, realize that every family's budget is different, because lifestyles and conditions are different. Consequently, you can't use someone else's budget for your own – you need to develop your own. If you already have a spending plan, you will need to update it before you decide whether you can afford to purchase a home. There are two ways you can determine your current spending needs and patterns. One is to keep receipts for everything you purchase for at least one full month, and it is better to collect them for two to three months. Once a week, enter the receipt amounts into a notebook or spreadsheet, according to categories such as food, auto, household, medical, housing, etc. If you don't get a receipt for an expenditure, be sure to write it on a piece of paper and include it with your receipts. At the end of the month, add up each category to find out your total expense in that category.

Another method of determining spending patterns is to collect all your bills for the past month. Add in every check from your register, all money orders, debit card or credit card purchases, etc. for the period to capture expenses such as groceries, eating out, movies, gas, etc.

In addition to a record of all your expenses for at least a month (two or three is more accurate), you will need a listing of all your income or a collection of your pay check stubs for the same time period. Be sure to use your spendable net income by subtracting your taxes, insurances, allotments, etc. from your gross paycheck. This is the amount you have to use for a spending plan.

Now, divide your expenses into three categories. Fixed expenses are those that are the same every month, such as car payment, rent, insurance, loan payments, credit card minimum payments, etc. Average periodic expenses, such as utilities, over twelve months and include those amounts also. Then, determine your monthly costs for variable or flexible expenses, which are the ones that vary from month to month. These would be expenses like food, gas, clothes, medicine, household items, entertainment, etc.

Finally, add your fixed, periodic, and variable expenses together for a month and subtract that amount from your net income for a month. If the amount left over is zero or a negative amount, you are already in financial difficulty and should not be considering home ownership at this point. However, just because you have extra income left at the end of the month, doesn't mean you will have enough to cover the extra expenses of owning your own home. Home ownership means things like buying a lawn mower, garden hose, fencing, and paint. It means paying for electricity, water, sewer and garbage. Since things continually need repair, will you be able to afford the plumber to repair the toilet or the hot water heater, or the electrician to repair light fixtures, switches, and outlets? What about a contractor if the roof leaks or the basement wall cracks? Will you need to buy curtains, furniture, or appliances? Will your commute to work be longer and take more gas? How are you going to cover the property taxes and homeowner's insurance?

The recent housing crisis was caused by the attitude of perspective buyers wanting more than they could afford and lending institutions encouraging them to do so. Carefully consider your financial picture before moving forward with a home purchase.

What's new for 2011 by Scott Hininger- Sheridan County

A new theme or at least one that is gaining more popularity is vertical gardening. Many people do not have the space or want to take up a lot of space or they want to dress up a wall. This type of planting can use many types of plants such as the traditional use of vines. However, many plants that can be grown on a wall are edible and can add color and texture. This can be done on the main level or on different levels such as balconies or decks.

Instead of thinking about using just vines such as pole beans or peas, a bracket system set against a wall can hold treys of vegetables or herbs. A wall on a deck could support many treys and the floor space is minimal compared to what the space would be if all the treys were laid out on the deck or the amount of pots that would be needed. This system is much more efficient use of space and can really dress up an area.

What about adding some color to or at least some different colors to our vegetables this year. Such as 'Watermelon' heirloom radishes, these radishes look just like baby watermelons. How about the deep purple 'Amethyst' dwarf strangles beans. If you have had

problems with tomato diseases try, a disease resistant variety such as 'Defiant PhR' this tomato is medium sized and resistant to late blight and to early blight. Another tomato to look for is the 'Orange Wellington' which has 12 oz fruit and is a mid season variety that is nearly seedless. Then there is the red colored 'Kalibos' cabbage.

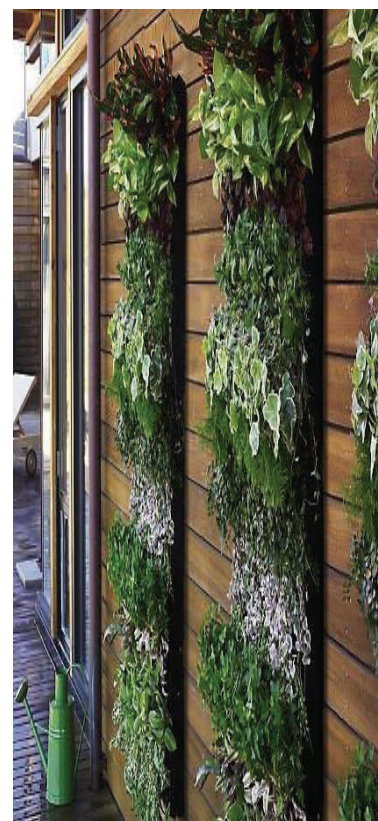
There are many new varieties of landscaping plants coming out this year. A lime green hydrangea 'Jane' which is zone rated three and grows three to five feet high, with lime-green blooms which turn to a pink color. Another hydrangea variety is 'Bella Anna' with a zone rating of four, growing three to five feet high and having magenta-pink blooms from midsummer to fall, so a longer flowering season. The individuals looking for vines and who like wisteria a new variety called 'Blue Moon' which is zone rated three not too aggressive of a grower but still reaching around 25 feet long, with fragrant lavender-blue flowers, would do well on most arbors.

For the evergreen market is a couple of low growing ones which should have some real uses in our area, since I really like ground

covers. 'Niagara Falls' is a very low growing weeping white pine that is zoned three and makes quite a nice flowing look. The next one is 'Gold Strike' a low growing juniper zone rated three with a spreading form and brilliant chartreuse needles in the spring which turn to a coral tone in the fall.

I am a big fan of cone-flowers and a new variety called 'Flame Thrower' zone rated four, and has very bright orange flowers, which would make quite the presentation if planted in a mass. I also really like blue grama grass as a warm season ornamental grass. The new variety is called 'Blonde Ambition' is zone rated four and has a chartreuse flower head and this plant will be taller than most blue grama grass at two feet tall. This plant also made it into the 2011 plant select release, meaning it has been recommended by the Denver Botanical garden, Colorado State University, and the horticulture trade (Plant Select Committee) making it a best selection for Wyoming.

I will be describing more plant selections in upcoming articles to wet everyone's appetite for this spring planting season.



The University of Wyoming and the United States Department of Agriculture, Sheridan county Office cooperate. The University is an equal opportunity/affirmative action institution.



Beans

Beans and other legumes have long been a dietary staple for many cultures—dating as far back as 20,000 years! These ancient cultures knew that beans were easily cultivated and sustained life. In today's terminology this translates to cheap, good food. So for those of you trying to stretch your food dollar, make sure not to overlook the value and versatility of the bean.

All beans can be considered relatively inexpensive sources of nutrients. However, when cost is a primary concern, dry beans are unquestionably the way to go. At ~25 cents/cup (cooked and drained), they are less than half the price of their canned counterparts. In addition, dry beans do not have the added salt and preservatives necessary to maintain freshness and quality of canned beans.

Unfortunately, what you gain in price, you lose in convenience. Most dry beans must be soaked for 6-8 hours or overnight to 'rehydrate' before cooking. In addition, cooking can take 30 minutes to two hours. However, this time can be shortened by quickly boiling the beans first (before soaking) or by cooking with a pressure cooker. To avoid soaking altogether simply choose lentils, split peas, or black-eyed peas as they do not require a soak before cooking. And remember that dry beans may triple in size during the soaking process, so measure carefully!

Whether canned or dry, beans are nutritional gold. They are good sources of carbohydrates, fiber, and protein and low in fat and sodium. In addition, beans contain a multitude of vitamins and minerals, including calcium, potassium, iron, and many of the B-vitamins. The Dietary Guidelines for Americans recommends eating about 3 cups of legumes per week for health. As with any fiber-rich food, beans should be slowly introduced in the diet, and accompanied by increased fluid intake. This will help to limit potential gastrointestinal side effects.

A few bean tips:

Dry beans should be rinsed and inspected before cooking—damaged beans should be removed

Drain the soak-water and rinse beans before cooking to minimize intestinal side effects

Wait until beans are tender to add salt or acidic ingredients like vinegar or tomato products

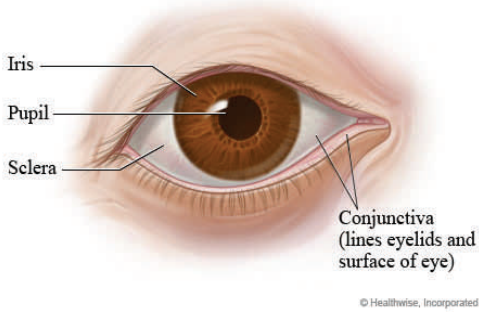
Soaking and cooking times may vary based on elevation, as well as the bean type and age

Dry beans may be stored in sealed container for at least 12 months. Slightly longer storage should not affect quality, but may lengthen cooking time.

Beans are great for the winter season as they lend themselves well towards soups, stews and many other hot dishes. Put them in the crock pot before you head to work and dinner will be waiting when you get home! Kentz Willis, M.S., is the University Extension Educator in Nutrition and Food Safety for Northeast Wyoming. He can be reached via email at kwillis3@uwyo.edu.

THE “EYES” HAVE IT!

By Vicki Hayman: University Extension Educator - Nutrition and Food Safety



We've all heard that carrots play a huge role in overall eye health but what else can you eat to improve the health of your eyes and reduce the risk of disease?

To keep your eyes in top shape, follow many of the same guidelines suggested for maintaining a healthy heart like keeping your blood pressure and cholesterol in check, reducing saturated fat from the diet, taking control of your weight, and

increasing your antioxidant intake. The risk for eye diseases, such as age-related macular degeneration (AMD) can be lessened by taking basic steps to ensure overall health. Start now by eating nutritious and vitamin-rich foods to reduce the risk eye disease, improve sight, and maintain good eye health.

Eating meals filled with green leafy vegetables rich in lutein and eating foods high in zinc, vitamins C and E, and beta carotene are recommended by the National Eye Institute. Eating nuts or fish may also help reduce the risk of eye disease. In depth description of excellent foods includes:

Kale: The carotenoids lutein and zeaxanthin found in green vegetables like spinach, Brussels sprouts, turnip greens, green peas, zucchini, broccoli, Swiss chard, collards, and kale help to improve vision and reduce the risk of age-related macular degeneration. The antioxidants in these foods act as natural sunglasses to defend the eyes from ultraviolet radiation as well as protect cells from being damaged. Carotenoids are best absorbed when eaten with dietary fats. If you're eating a salad with carrots, spinach, and radishes for example, have it with a dressing containing oil, like olive oil.

Berries: Among the top sources of antioxidants, berries play an important role in decreasing cancer risks, cardiovascular disease, and Alzheimer's disease. Studies have also found the antioxidants in berries reduce the risk of macular degeneration, cataracts, and other eyes diseases. Choose fresh strawberries, blueberries, or raspberries for a sweet snack, simple dessert, or salad topper.

Carrots: Probably the best-known food for healthy eyes, carrots top the charts with disease-fighting vitamin A. Vitamin A helps to prevent night blindness and is essential for retinal health. It also reduces the risk of cataracts and macular degeneration. Like carrots, other orange foods such as sweet potatoes, mangos, cantaloupe, and apricots provide healthy doses of vitamin A.

Milk: Milk is a good source of riboflavin and can help to reduce your risk of cataracts. It is also fortified with vitamin A, a leading performer among eye health vitamins. Choose low-fat milk over whole milk to keep the saturated fat low and prevent plaque buildup in the eyes' blood vessels. Cheese, eggs, and liver are other good animal sources of vitamin A.

Good sources for vitamin E are almonds, sunflower seeds, safflower oil, peanuts, peanut butter, corn oil, mango, and eggs.

These food give us vitamin A, C, and E which are the primary contributors for healthy eyes. All assist in preventing cataracts from forming and play a part in the prevention of macular degeneration.

Selenium and zinc are also known to aid in prevention of eye disease. Zinc is found in a number of tissues with the eye, where it is thought to play a protective role against wear and tear. Oysters contain both selenium and zinc. Additional sources include Brazil nuts, yeast, eggs, and other seafood. A few sources of zinc include beef, chickpeas, pumpkin seeds, red kidney beans, wheat, and nuts.

Also, certain foods should be avoided, including foods and processed baked goods with high-fat content. A high-fat, high-cholesterol diet can lead to fatty plaque deposits in the macular vessels, which can hamper blood flow. The risk of vision loss can be lowered in adults: control blood pressure and cholesterol; stay active and exercise regularly; get complete eye exams from a professional.

We all know that vision tends to decline a little with age in everyone, usually because of changes that occur to aging eye structures. A healthy diet and lifestyle might help minimize those changes and help reduce the risk of serious conditions, like cataracts, glaucoma, and AMD. So keep your eyes “peeled” for more healthy foods, don’t focus on a single one. Eat a wide variety of fruits and vegetables, chose healthy fats, high-fiber carbs, and reduce your intake of sugars, and refined flours. (Sources: allaboutvision.com; aoa.org; eyecaresource.com; virtualmedicalcentre.com)

EXTENSION COMMUNITY CLASSES

Experience ‘Hands-on” cooking classes from 30 Minute Meals and Easter cooking to Pressure Canning.

Participants will prepare and sample recipes, so bring your appetites!

CAMPBELL COUNTY EXTENSION OFFICE	CROOK COUNTY EXTENSION OFFICE	WESTON COUNTY EXTENSION OFFICE
412 S. GILLETTE AVE.	309 CLEVELAND	1225 WASHINGTON BLVD.
<i>SEMI-HOMEMADE MEALS:</i>	<i>SEMI-HOMEMADE MEALS:</i>	<i>SEMI-HOMEMADE MEALS:</i>
5:30-8:30 pm	5:30-8:30 pm,	5:30-8:30 pm
THURSDAY, MARCH 24	TUESDAY, MARCH 29	TUESDAY, MARCH 8
COST: \$20	COST: \$20	COST: \$20
<i>COOKING AN EASTER MEAL:</i>	<i>COOKING AN EASTER MEAL:</i>	<i>COOKING AN EASTER MEAL:</i>
5:30-8:30 pm	5:30-8:30 pm,	5:30-8:30 pm
WEDNESDAY, APRIL 13	THURSDAY, APRIL 4	WEDNESDAY, APRIL 6
COST: \$20	COST: \$20	COST: \$20
<i>PRESSURE CANING:</i>	<i>PRESSURE CANING:</i>	<i>PRESSURE CANING:</i>
9:30 am-12:30 pm	9:30 am-12:30 pm	5:30-8:30 pm
SATURDAY, MAY 7	SATURDAY, MAY 14	TUESDAY, MAY 10
COST: \$12	COST: \$12	COST: \$12
<i>WATER BATH CANNING:</i>	<i>WATER BATH CANNING:</i>	<i>WATER BATH CANNING:</i>
1:30 - 4:30 pm	1:30 - 4:30 pm	5:30-8:30 pm
SATURDAY, MAY	SATURDAY, MAY 14	THURSDAY, MAY 12
COST: \$12	COST: \$12	COST: \$12



**CALL AND ENROLL IN THE CLASS OR CLASSES
OF YOUR CHOICE TODAY!**

Cent\$ible Nutrition Program

Helping Families Eat Better for Less



It was another successful year for the *Cent\$ible Nutrition Program*. These are some of our impacts for 2010.

1,133 adults graduated from the program(8.5 average lessons)

Mean daily cups of fruits increased from 0.9 to 1.2 or .30 cup increase

Families reported saving an average of \$53.82 per month on food

2,574 youth participated in a series of 5 lessons in school classrooms, afterschool programs and camps

About 50% improved their knowledge of MyPyramid food groups

30% now eat a variety of foods

4,634 adults and 4,735 youth participated in one-time educational lessons

83.6% of adults reported intent to change behavior

29% of enrolled adults are minority status with 14% Hispanic/Latino and 13% American Indian or Alaska Native. 17% of enrolled youth are minority status with 14% Hispanic/Latino, and 8% American Indian or Alaska Native.

Other important nutrition information that just came out on January 31, 2001 was the New Dietary Guidelines. More than 1/3 of children and more than 2/3 of adults in the United States are overweight or obese, the Guidelines puts emphasis on reducing calorie intake and increasing physical activity. It encourages Americans to eat more vegetables, fruits, whole grains, fat-free and low-fat dairy products, and seafood, and consume less sodium, saturated and trans fats, added sugars, and refined grains. Here are some tips to meet the New Dietary Guidelines:

Enjoy your food, but eat less.

Avoid oversized portions.

Make half your plate fruits and vegetables.

Switch to fat-free or low-fat (1%) milk.

Compare sodium in foods like soup, bread, and frozen meals.

Drink water instead of sugary drinks.

Poor food choices and lack of physical activity are the most important factors that lead to being overweight and obese in America. If we could try to follow these guidelines and reduce calorie intake and increase physical activity it would be a start in confronting the obesity epidemic in America.

The *Cent\$ible Nutrition Program* offers lessons on healthy eating, meal planning, and money saving tips for individuals with limited income. Please feel free to contact Karen Kimutis, *Cent\$ible Nutrition Program* Assistant, at the Johnson County Extension Office at 684-7522.

Trish Pena, Cent\$ible Nutrition Educator Weston & Crook County

When the days get chilly, everyone has a stronger urge to snack. To help us eat healthy this winter, keep these snacking tips in mind and check out a couple recipe ideas.

Strive for Five: Government and health agencies encourage all Americans (of every age) to eat five to nine servings of fruits and vegetables each day. To reach this goal, keep a variety of fruits on hand (fresh or canned in juice or light syrup) and combine vegetables with a food or flavor you like: celery and peanut butter, low-fat cheese melted on broccoli, carrots grated into oatmeal cookies.

Break Out the Baking Pan: Making cookies, muffins, and other treats from scratch is worth the extra effort. You control the amount of sweetener; you can reduce the sugar in most standard recipes by 25% without sacrificing flavor. Also, try substituting applesauce for oil or low-fat yogurt for sour cream.

Prep for After Work or School: When you and the children come home, have "fast" food ready for that quick snack:

- English muffin pizzas with a dollop of sauce and a slice of mozzarella cheese
- chilled hardboiled eggs
- whole-grain cereal
- sweet potato chips
- non-buttered popcorn sprinkled lightly with Parmesan cheese



Make Calcium Fun: Build healthy bones with string cheese, yogurt, and chocolate milk.

Offer Finger-friendly Food: Veggies with honey-mustard dipping sauce; fruit cut into chunks with a cup of vanilla yogurt; leftover chicken/turkey cut into strips with a light teriyaki sauce.

Recipes: Families cooking together have more fun and learn together. It is also a great time to have your children practice following directions, counting, measuring, reading and cleaning up! Here is a recipe you can make.

Pumpkin Bran Muffins (from the Cent\$ible Nutrition Cookbook): Packed with flavor and vitamins, these muffins are delicious with hot apple cider or hot chocolate after an afternoon playing in the snow or a busy day at work or school.

1 cup all-purpose flour	¼ teaspoon ground nutmeg
1 cup brown sugar	¼ teaspoon ground cloves
½ cup whole-wheat flour	¼ teaspoon salt
¼ cup wheat bran	1 16 oz. can solid pack pumpkin
¾ teaspoon baking soda	3 eggs
½ teaspoon ground cinnamon	2 tablespoons molasses
¼ teaspoon allspice	

Grease muffin tins or line cups with muffin papers. Mix flour and brown sugar. Stir in whole-wheat flour, bran, baking soda and seasonings. In a separate bowl, combine remaining ingredients. Stir into flour mixture. Pour into 12 muffin cups, no more than $\frac{2}{3}$ full. Bake at 375°F for 20-25 minutes. Makes 12 servings.



PAGE 9

Northeast Extension Connection

Forage Kochia

by

Blaine Horn, NE Area Extension Range & Forage Educator

Forage kochia (*Kochia prostata*) is an introduced, semi-evergreen, perennial half-shrub that is readily consumed by livestock and wildlife. It is not to be confused with the weedy kochia (*Kochia scoparia*) which is an annual herb that primarily invades disturbed lands, especially cultivated fields. Besides its high palatability Forage kochia unlike annual kochia does not accumulate nitrates, thus nitrate poisoning of livestock is not an issue with it.

Forage kochia will grow 1 to 3 feet tall. It has a deep tap root along with an extensive fibrous root system. This root system allows it to grow and survive in arid to semi-arid regions (6 to 16 inches annual precipitation). Although it is considered to be only a medium-lived species (10 to 15 years) it readily re-establishes from seed. Forage kochia can grow in a wide range of soils although it does best on medium-textured soils, and it is very tolerant of saline and sodic conditions. In addition, it will grow at elevations between 1600 and 7300 feet.

Forage kochia was originally brought to the western U.S. from Eurasia to compete with halogeton but has been found to compete well with cheatgrass, Russian thistle, and medusahead grass. In some regions of Wyoming including the Northeast Area cheatgrass has become a concern and forage kochia could possibly help in reducing its stands without also displacing perennial grasses and forbs as this has not been found to be the case where it has been established.

Besides its potential to reduce cheatgrass stands why would a Wyoming rancher be interested in seeding forage kochia? As a winter protein supplement! Forage kochia on average has a higher protein content compared to grasses, especially during the dormant season (Oct-Apr). The protein content of forage kochia generally peaks in August at nearly 15% when that of cool-season range grasses is declining. And though the protein content of forage kochia also declines during the fall months David

Koch, UW Extension Forage Specialist (Retired), found that it is better than 7% in late winter and early spring in studies conducted in SE and SW Wyoming. Other studies in Utah and Nevada have found the same thing. A dry, pregnant beef cow requires about 7% crude protein in her diet and a sheep ewe around 8.5%. Thus if forage kochia is in the pasture a beef cow's protein requirement could possibly be met without supplementation though a sheep ewe would probably need some.

In addition, to its relatively high crude protein content, forage kochia will produce up to twice as much palatable forage compared to rangeland grasses, including introduced species, in normal and dry years. A study in Tooele County, Utah in 2007 compared rangeland forage production with and without forage kochia in the pasture and found that fall dry matter yields averaged 440 and 3000 lb/ac, respectively. A study in Nevada looking at winter diets of sheep grazing forage kochia with crested wheatgrass, and winter fat, a native palatable half-shrub, with crested wheatgrass, found that forage kochia amounted to 48% of the diet whereas winter fat only 23% of the diet. The higher consumption of forage kochia was due in part to its greater production compared to winter fat but also its higher palatability.

Based on the above it would appear that forage kochia might have a place in winter rangeland pastures of this region. The above mentioned Tooele County, Utah study was conducted with the purpose of demonstrating to ranchers the potential of forage kochia to increase carrying capacity of winter rangeland and to show that it could possibly reduce protein supplementation costs. If you would like more information on forage kochia including establishment methods contact your local University of Wyoming Cooperative Extension Service Office.

Since experiences tend to shape the way we look at things its valuable knowing where someone comes from is valuable to better predict where they may be headed. As the newest livestock extension educator in northeast Wyoming I thought I should take this first opportunity to write in the *Northeast Extension Connection* to introduce myself and give some background information.

I was born and raised in a small town in western New York, being the first generation in our family raised back East. My family purchased a 550 acre farm where I was involved in raising sheep and beef cattle to support a freezer trade business in Buffalo. Most of my time growing up was on a tractor putting up hay or delivering meat in Buffalo. Similar to

most family operations we found that two revenue streams were better than one so we decided to become northeast distributors for Powder River Livestock Handling Equipment. I also spent many weekends selling, delivering, and setting up equipment throughout the New England area.

After high school I moved to South Carolina for an education in the "calf ranch" business which involved buying baby Holstein bull calves throughout the Southeast, starting them on milk and growing them to 300 to 500 pounds. This was by far the most challenging experience I have ever had in the livestock business from an animal health standpoint. With 500 head of fragile newborn calves on milk at one time I learned how to identify and doctor "at risk" calves in a hurry. I continued to be involved with the calf ranch after a two year missionary service to Ecuador, and during off semesters while attending Brigham Young University-Idaho. A combination of high commodity feed prices and obligations finishing my degree in Idaho ended my involvement with

raising calves in South Carolina.

My formal educational training began at BYU-Idaho where I obtained my bachelors degree in agricultural education. While in Idaho I worked for a local rancher and as a research assistant at the campus livestock center. After teaching agriculture for a short time in West Jordan, Utah I was given the opportunity to pursue a master's degree in animal science at Oregon State University. Most of the research I was involved with centered around the trace mineral selenium and its effects on animal health and performance. My master's thesis was titled "*Effect of selenium source and supplementation rate in ewes on selenium status, passive immunity and growth performance of their lambs.*"

Last, but not least I would be remiss if I didn't mention my wife Lindsay, and 6 month old son, Grant. I'm excited to once again be in a rural area, and look forward to making NE Wyoming home. I have had the opportunity to get out and visit with area ranchers and have generated some great ideas in the process. I look forward to meeting more of you folks and will jump at the opportunity to come out to the ranch. Feel free to contact me at (307) 682-7281 or wstewar2@uwyo.edu



Whit Stewart
Profitable & Sustainable
Livestock Educator

Colostrum: Immunity, Warmth and Nutrition

By Whit Stewart

Profitable and Sustainable Livestock Educator–NE AREA

With calving and lambing seasons soon upon us, I thought it worthwhile to mention some information related to newborn health and performance. Nothing is as relevant to our bottom line as ensuring that newborn calves and or lambs get off to a good start. With that in mind there is no better natural mechanism in place than the maternal “health insurance” provided by the dam than colostrum. It is free from good mothering dams and can have a lasting impact on the growth and development of the calf and lamb. The importance of colostrum for the newborn ruminant can be broken down into three principal benefits: 1) Immune Protection; 2) Thermometabolism; 3) Vitamin and Mineral Content.

Passive Immunity: Primarily let us address the immune protection colostrum can offer. During roughly the last week of pregnancy these maternal antibodies are transferred from the dam’s serum to the mammary tissue where they begin to accumulate. Cattle and sheep are unique in that during pregnancy maternal antibodies or immunoglobulins (Ig) cannot cross the placenta to the developing fetus thus any protection against harmful microorganisms during the first 6-10 weeks must come from ingested colostrum. This process referred to as “Passive Transfer” is the first line of defense for the maturing newborn’s immune system. A study by McGuire et al. (1983) found that failure of passive transfer in lambs resulted in 45% dying before 3 weeks of age, whereas only 5% of the lambs with adequate passive transfer died. Failure of passive transfer can generally be attributed to poor colostrum quality, inadequate colostrum ingestion, or intestinal

absorption failure in the newborn. Luckily for us in most instances the dam can produce quality colostrum and in most cases is pretty good at ensuring her offspring gets an adequate amount. However all of us have seen those exceptions where for various reasons the offspring didn’t consume adequate amounts.

Antibody Absorption is Time Dependent:

It is important to keep in mind that optimal absorption of maternal antibodies is restricted to the first 6 to 12 hours after birth. The low level of protease activity in the digestive tract of newborn ruminants allows colostral antibodies to reach the small intestine intact. In the small intestine, colostral antibodies bind to specialized receptors on intestinal epithelial cells. They are subsequently endocytosed by intestinal epithelial cells and eventually reach the blood stream (Tizard, 2009). In general after 24 hours these epithelial cells of the newborn are sloughed off and thereby the ability to absorb intact maternal antibodies is diminished. Thus, it is important that lambs consume adequate amounts of colostrum in a timely manner to receive the transfusion of maternal antibodies. For newborn calves the traditional recommendation is to feed 2-4 quarts initially and another 2 quarts 8 to 12 hours later. It is estimated that 180 to 290 mL/kg of body weight are required by the lamb in the first 18 hours after birth (Nowak and Poindron, 2006). A quick figure for newborn lambs would be 10% of their body weight should be consumed in

(Continued on page 12)

(Continued from page 11)

colostrum by 24 hours of age.

Thermometabolism: Another important function of colostrum is its function to maintain the newborn's body temperature. This is especially important for new born lambs. During the first 15 min after birth, the internal temperature of a lamb decreases quickly below the intra-uterine environment of 102.2 °F. Lambs must increase their heat production by up to 15 times the prenatal level to compensate for this heat loss. The cooler the external environment, the faster this metabolism must be to maintain body temperature and the rate of heat loss is quickened by wind velocity, humidity and the amniotic fluids evaporating from the birth coat. To maintain body temperature before any colostrum is ingested, the newborn must metabolize its brown fat energy reserves and increase muscular activity by shivering. Brown fat provides the major source of energy but constitutes only 2–4.5% of the body weight of the lamb. Large newborns have more available fat energy reserves per kilogram of body weight than small ones. Fat reserves are disproportionately low in small lambs and in lambs being born from ewes that had been undernourished during pregnancy, hence giving them even less chance to survive. Colostrum provides that essential energy source at the critical moment when other energy sources have been depleted. It contains approximately 7% fat, 4% casein, 5% lactose, and 82% water. It provides approximately 2 Kcal of energy per mL.

Mineral Nutrition: Another important role of colostrum is its rich concentration of vitamins and minerals. The dam will prioritize the partitioning of trace minerals such as selenium into colostrum even at the risk of depleting her own body's reserves (Stewart, 2010). Calves and lambs are born with low vitamin A. Colostrum is usually rich in vitamin A and helps to build stores in the newborn. Colostrum is also the first source of Vitamin E for the newborn. Further-

more the iron content of colostrum is 10 to 17 times higher in colostrum than normal milk. In short, adequate colostrum consumption will effectively quench the trace mineral requirements of the newborn during the early periods of growth, thereby decreasing reliance on sometimes ineffective mineral supplementation strategies.

Considerations: If there is any opportunity to collect and freeze extra colostrum for later use it is worth the extra effort. Of course I can say this now, but as the inexpensive labor my siblings and I provided growing up, Dad made us milk out the cows and ewes that lost their offspring. Ewes that carry twins or triplets that have only 1 lamb survive may also have excess. Frozen colostrum can be stored up to 12-18 months before quality begins to decline. Frozen colostrum should always be thawed slowly in a warm water bath. Direct heat will denature the proteins and destroy the antibodies. An esophageal or "tube" feeder is also a valuable tool to have handy for weaker newborns that cannot suckle vigorously. I've heard colostrum referred to as "liquid gold" and given the many effects on newborn growth and development I consider its value to be worth its weight in gold.

References

- McGuire T. C., J. Regnier, T. Kellom, N. L. Gates. 1983. Failure in passive transfer of immunoglobulin G1 to lambs: Measurement of immunoglobulin G1 in ewe colostrums. Am. J. Vet. Res. 44:1064-1070.
- Nowak, R., P. Poindron. 2006. From birth to colostrum: early steps leading to lamb survival Reprod. Nutr. Dev. 46:431-446
- Schoenian, S. 2011. Colostrum: Liquid Gold. Small Ruminant Info Sheet. Retrieved from <http://www.sheepandgoat.com/articles/colostrum.html>

Sheridan Research & Extension Center – Research Survey!!!

Whitney Benefits Foundation of Sheridan has offered the University of Wyoming a long-term lease for use of their Adams Ranch property just south of Sheridan College to serve as a new site for the Sheridan Research and Extension Center (SREC). The Adams Ranch property will provide an excellent opportunity for the SREC to meet its mission of serving Wyoming's applied research and extension needs in horticulture, range and water reclamation, and forage management. The Adams Ranch has an abundance of high quality water for irrigation which will allow for a broader research program, especially in the areas of horticulture and forage crops. To help facilitate development of the applied agricultural research program at the Adams Ranch Agricultural Experiment Station Director Dr. Bret Hess would like your input on the following.

Forage Crops (Check all that you have an interest in):

- Alfalfa _____
- Other perennial legumes (Birdsfoot trefoil, Cicer milkvetch, Sainfoin, etc.) _____
- Perennial grasses (Bromes, tall fescue, orchard, wheatgrasses, etc.) _____
- Annual legumes (lentils, chickpeas, various beans, etc.) _____
- Annual brassicas (beets, turnips, etc.) _____
- Annual grasses (millets, sorghums, cereals) _____

Management Practices of forage crops (Check all you are interested in):

- Irrigation management _____
- Fertilizer management _____
- Legume/grass mixtures _____
- Hay harvest management (e.g. timing of & resultant forage quality) _____
- Grazing management _____
- Biomass for cellulosic ethanol production _____

Other Crops (Check all of interest):

- Oilseed crops for biodiesel (camelina, canola, safflower, sunflowers) _____
- Resultant meal following crushing as a livestock feed/supplement _____
- Cereal crops for grain production (barley, oats, rye, wheat) _____
- Other (Please indicate here)

Survey continued on other side. Also please provide your thoughts below or on a separate piece of paper as to what you would like to see the University of Wyoming work on at the SREC Adams Ranch.

Horticulture

What issues in edible horticulture (vegetables, small fruits, and fruit trees) would you like to see addressed?

What issues in ornamental horticulture (flowers, ornamental trees) would you like to see addressed?

What new horticultural crops would you like to see tested in Wyoming?

What do you currently grow?

Would you be interested in learning more about (Check all that apply):

Growing fruit trees _____

Growing nut trees _____

Grapes _____

Gardening _____

Growing produce organically and/or becoming organic _____

Extending the growing season via high tunnels, row covers, or cold frames _____

Low-water use lawns _____

Xeriscape landscaping _____

Weed management _____

Perennials: Flowers _____; Vegetables _____

Other (Please indicate here)

Livestock:

Poultry (chickens, turkeys), goats or other animals on small acreages _____

Please return by April 1, 2011 to:

Attn: Blaine Horn, Johnson County Extension Office, 762 W. Fetterman, Buffalo, WY 82834

2011 Northeastern Wyoming Extension Seminar Series

Livestock Marketing and Price Outlook

Bridger Fuez, Extension Marketing Specialist

Gillette—Tues. March 22nd, 6:00 p.m., Campbell County Extension Office, GAMB Building, (North of Courthouse), 412 S. Gillette Ave.

Kaycee —Mon. March 28th, 6:00 p.m., Harold Jarrard Park Bldg.

High Tunnel Greenhouse

Jeff Edwards, Extension Crops Specialist

Sheridan—Tues. March 29th, 6:00 p.m., Sheridan College Ag Center

Gillette—Wed. March 30th, 6:00 p.m., Campbell County Extension Office, GAMB Building, (North of Courthouse), 412 S. Gillette Ave.

Newcastle—Thurs. March 31st (time and location TBD)

Forages Workshops

Alternatives for both dryland and irrigated production

Sundance—Tues., April 5, 6:00-8:00 p.m., Courthouse Community Room (basement)

Wright—Wed. April 6, 10:00am-Noon, Multipurpose Facility, 201 Wright Blvd.

Recluse—Wed. April 6, 6:00-8:00 p.m., Elementary School Gymnasium

Sheridan—Thurs. April 7, (time and location TBD)

Buffalo—Thurs. April 7, 6:00-8:00 p.m., Hampton Inn

Speakers: Roger Hybner (USDA ARS—Bridger MT Plant Materials Center;

Blaine Horn and/or others

Northeast Extension Connection

***A quarterly newsletter from Campbell, Crook, Johnson, Sheridan and
Weston County UW Extension Offices***

*Campbell County, 307-682-7281: Jessica Gladson, Family & Consumer Sciences 4-H/Youth; Lori Bates, Horticulture Program
Coordinator; Lori Jones, Cent\$ible Nutrition; Erin Curtis, 4-H/Youth*

*Crook County, 307-283-1192: Gene Gade - Range; Janet Lake—4-H/Youth; Peggy Symonds - 4-H/Youth;
Trish Peña, Cent\$ible Nutrition*

Johnson County, 307-283-684-7522: Blaine Horn—Range; Rachel Vardiman, -4-H/Youth; Karen Kimutis-Cent\$ible Nutrition

*Sheridan County, 307-674-2980 Scott Hininger— Horticulture; Kentz Willis-Nutrition & Food Safety; Jerrica Lind-4-H/Youth;
Sandra Koltiska— Cent\$ible Nutrition*

*Weston County, 307-746-3531: Bill Taylor, CDE; Vicki Hayman, Nutrition & Food Safety, 4-H/Youth, Trish Peña, Cent\$ible
Nutrition*

UNIVERSITY
OF WYOMING

Johnson County Cooperative Extension

762 W. Fetterman Ave.

Buffalo, WY 82834