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## PASTURE MANAGEMENT — JUST THE FACTS

Photosynthesis is the process by which plants combine solar energy, atmospheric CO<sub>2</sub>, and water, within green leaf tissue (chlorophyll) to produce carbohydrates. Plants use these carbohydrates as a source of energy to carry on basic metabolic processes. In short, while overly simplistic, plants can create their own food using the simple ingredients of sunlight, water, and CO<sub>2</sub>.

Plants do require, however, adequate green leaf (photosynthetic tissue) in order to carry out photosynthesis. Without these four main ingredients plants cannot survive. As managers there is not a lot we can

over the amount of sunlight plants receive. The truth is we have a substantial influence on the amount of sunlight reaching the plant leaves. If we do not control weeds or if we do not appropriately manage winter pasture as warm-season grasses are breaking dormancy, a canopy (think umbrella) of weeds or winter annuals results and intercepts/uses most of the sunlight with very little reaching the forage plant below. Since sunlight is a crucial component of photosynthesis, the forage below the canopy suffers.

Without adequate sunlight, photosynthesis is reduced, root growth and development is decreased, and overall vigor and production of the forage plant declines. As managers we have direct control over the amount of sunlight reaching the desired forage by either removing weeds with the appropriate herbicide at the appropriate time or by removing winter annuals prior to the time warm-season grasses begin to make active growth. When night time temperatures consistently reach 60°F, warm-season grasses begin making active growth and cool-season annuals should be removed prior to this time.

The same argument could be made regarding precipitation; obviously, managers



do regarding CO<sub>2</sub>; there is adequate quantities in the atmosphere. We can, however, have an impact on water, sunlight, and the amount of green leaf involved in the photosynthesis process. Let's take a look at what impacts we can have on the important aspect of plant production.

Some might argue we have little control

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**PASTURE - CONTINUED FROM Pg. 2**

## Multiple-Sire Breeding Groups – What Happens?

Data were analyzed from three ranches, with fall and spring breeding seasons, and involving a total of approximately 2100 predominantly Angus females. Bulls were mostly Angus. Breeding seasons ranged from 70 to 120 days.

Number of bulls per breeding group ranged from 2 to 9 with a ratio of 25 cows:1bull. All bulls passed Breeding Soundness Exams and young bulls were grouped. Bulls averaged 4.6 years of age, ranging from 1.3 to 11.6. Bulls determined to be injured or in poor condition were removed. Cows were

assigned randomly to breeding groups. Paternity of calves was determined by DNA analysis.

Average number of calves per bull ranged little between ranches, years, or breeding seasons. Average number of calves in a breeding season was 18.9, but ranged from 0 to 64 for individual bulls. In 40% of the calf crops a bull produced only one calf. In 40% of the calf crops a sire produced 50 or more calves, and this advantage was concentrated in the first month of breeding.

No calves were produced by 4% of the bulls. Scrotal Circumference EPD

was positively related to calves per bull, but there was no significant relationship with 24 other EPD traits. Prolificacy of young bulls in their first year was positively related to subsequent years, but many bulls changed in prolificacy rank over breeding seasons. The authors recommended consideration of SC EPD in selecting yearling bulls, but acknowledged that prediction of prolificacy is problematic.

[Proceedings of Conference on Applied Reproductive Strategies, Staunton, Va., Oct. 2013; Univ. of California-Davis]

### PASTURE - CONTINUED FROM PG. 1

have no control over the amount of precipitation occurring during the year. Managers do, however, can control how much of the precipitation remains on their property. When pastures are routinely grazed short, overland flow of runoff during precipitation events is increased and more water runs off the pasture rather than into the soil (infiltration).

Consider making your property a “sponge” to capture and keep as much moisture as possible. This concept of slowing down runoff velocity and increasing infiltration also protects the soil from loss (erosion), keeps expensive fertilizer nutrients, pesticides, and bacteria in the pasture, and protects soil organic matter from being lost as a result of soil erosion. Water + topsoil + nutrients + organic matter = a much healthier pasture environment and will pay dividends for years to come. Conversely, loss of water, topsoil, organic matter, etc., results in a pasture system that is low in productivity.

Finally, as managers we have a direct

control over how much green leaf remains in the pasture. Research data indicates up to 50% of the forage leaf may be removed without deleterious effects on the root system. Once >50% of the leaf is removed root growth and development is reduced significantly. As root growth and development is reduced there is a negative feedback to the top growth; this further exacerbates an already bad situation. As managers we primarily control the amount of green leaf taken by using the appropriate stocking rate and possibly some type of grazing method. However, other “grazers” such as grasshoppers, fall armyworms, and the new bermudagrass stem maggot can also remove large amounts of green leaf, thus depriving the plant of the ability to produce roots. The ability for good root growth and development is always important, but critically so during drought.

The bottom line? Maintain an adequate amount of forage residue in the pasture at all times. Different species have different thresholds. Bermudagrass and bahiagrass, for example,

may be grazed repeatedly to a height of 4” with little detrimental effect. Kleingrass, Old World bluestems, intermediate native species should not be grazed below 6”-8”. Our native tallgrasses such as little bluestem, big bluestem, indiagrass and others should not be grazed below 12”-14”.

Keeping some of these thresholds in mind, scouting the field to check on the key species and for potential weed and insect problems, and sometimes making the hard decisions regarding stocking rate will help maintain plant vigor and production by allowing optimum photosynthesis to take place. These same actions will also enhance animal performance, protect the environment, and increase profit potential for your operation.

Forage Fax  
12 June 2014

<http://foragefax.tamu.edu/2014/06/12/pasture-management-just-the-facts/>

## EFFECT OF SIZE ON HEIFER GROWTH AND REPRODUCTION

Size can be stated as either body weight or skeletal dimension. A commonly used system of skeletal dimension is frame score, determined by height at the hooks. Two spring-calving cow herds were available for study. One herd historically averaged 1220 lb. mature weight; the other averaged 1470 lb. mature weight. Heifers in this study from those herds averaged frame score 3.50 and 5.56 respectively. [Based on the historical mature weights, a frame score equaled about 120 lb. per frame score, similar to that found in other research.]

Heifers were grazed on dormant range from mid-October to mid-May, on growing pasture to early July, and placed in drylot to late September. Heifers were bred during the last 50 days of the drylot period.

Small-frame heifers gained more during the first period, and large-frame gained more during the second and third periods. Overall, large-frame gained 40 lb. more (18%). At the start of breeding, small-frame averaged 705 lb. [58% of mature weight] and large-frame 841 lb. [57% of mature weight].

Overall conception rate was 86% for small-frame and 84% for large frame, not statistically different. In drylot, small-frame consumed 20% less feed and development cost was 16% lower. Feed efficiency and cost/lb. gain did not differ. Large-frame cost a total of \$21.94 more feed in drylot [16% more].

The authors noted that, as in some previous research, acceptable breeding performance can be realized by developing heifers to 55-60% of

projected mature weight, as opposed to 60-65% previously recommended, with accompanying reduced cost.

**N O T E :** Based on projected mature weights in this study, for every 100 small-frame cows, only 87 large-frame cows could be maintained on the same nutritional resource.



[2012 N. Dakota St. Univ. Beef Report, p.9]

<http://animalscience.tamu.edu/2014/04/20/beef-cattle-browsing-april-2014/>

## Increasing Consumption of Beef

A survey, funded by Beef Checkoff of over 3,000 consumers, examined possible ways to increase beef consumption. For all of the following, 23% to 31% of consumers indicated they would “definitely increase” buying and 34% to 45% would “probably increase” buying if they knew:

- 4 oz. of beef has the same cholesterol as 4 oz. of skinned chicken breast
- beef is an excellent or good source of 10 essential nutrients
- lean beef helps maintain healthy weight, builds muscle and fuels physical activity
- lean beef fits as well as chicken or fish for heart health
- most popular steaks have <10% fat after being cooked and trimmed

- U. S. testing prevents beef being sold that has added hormones remaining
- most beef cattle spend most of their life grazing on pastures on farms and ranches

And, if they saw:

- greater availability of large-quantity packs with lower price per pound
- greater availability of trimmed 4-5 oz. steaks with <200 calories in large packs
- greater availability of trimmed, economically priced 4-5 oz. steaks in restaurants

[National Cattlemen’s Beef Association]

<http://animalscience.tamu.edu/2014/04/20/beef-cattle-browsing-april-2014/>

### What is Important to Consumers?

A survey was conducted of a sample of 1,950 consumers representative of the U.S. population. Respondents were asked to indicate relative value of 11 attributes of ground beef, beef steak, milk, and chicken breast.

Freshness and safety ranked highest. Health, price, taste, and nutrition were in a medium grouping. Lowest in importance were environmental impact, hormone free/antibiotic free, animal welfare, origin/traceability, and convenience. There was generally little difference in results across the four food products.

[Proceedings of Conference on Applied Reproductive Strategies, Staunton, Va., Oct. 2013; Univ. of California-Davis]



## WHAT IS THE OPTIMAL YIELD GRADE ?

Carcasses with superior [numerically lower] Yield Grade have higher value when sold on a carcass value grid. But Yield Grade is only one of the factors determining carcass value.

A recent report analyzed carcass data collected in calendar year 2013 by a major high-quality beef company. Carcasses from a natural program or that had received zilpaterol were excluded.

Averages were calculated for the five Yield Grades:

- carcass weight increased from 830 lb. for YG1 to 935 lb. for YG2
- fat cover increased from 0.26 inch for YG1 to 0.98 inch for YG5

- ribeye area decreased from 16.2 square inch for YG1 to 11.8 square inch for YG5
- carcasses discounted for excess weight increased from 3% for YG1 to 23% for YG5
- Quality Grade increased from high Select for YG1 to mid-Choice for YG5
- Choice-Prime combined increased from 34% for YG1 to 95% for YG5
- Prime increased from 0.2% for YG1 to 15% for YG5

Carcass price/cwt and total \$/carcass were:

YG1 \$193.75 and \$1,609

YG2 \$197.94 and \$1,684

YG3 \$201.04 and \$1,762

YG4 \$196.98 and \$1,783

YG5 \$189.45 and \$1,770

The report concluded that YG3 was optimum.

NOTE: While YG4 and YG5 had slightly higher total \$ return, these cattle were fatter so they would probably have been less feed efficient late in the finishing period and/or fed longer, thus increasing cost and reducing their net return.

[U. S. Premium Beef, LLC; from USPB News 16:1, 1/17/14]

<http://animalscience.tamu.edu/2014/04/20/beef-cattle-browsing-april-2014/>

## BROADLEAF MARSHEDLER

Broadleaf Marshelder (*Iva annua* L.) is a warm season annual in the Sunflower family. Also called broadleaf sump weed. The leaves are situated in pairs across from each other on the stem. Marshelder grows in wet, moist areas, disturbed areas, and roadsides. This plant germinates in the early spring in February or March. The flowers, which resemble those of the ragweed group, are inconspicuous. It flowers in later summer and fall.

Select Herbicide Options:

Weedmaster

2, 4-D

GrazonNext HL

Grazon P+D

Milestone

PastureGard

Chaparral (for bermudagrass pastures,

will destroy bahiagrass)

Cimarron Max (for bermudagrass pastures, will destroy bahiagrass)

**REMEMBER: THE LABEL IS THE LAW!** Always read the pesticide label before using.

Forage Fax  
11 June 2014

<http://foragefax.tamu.edu/2014/06/11/weed-of-the-week-broadleaf-marshelder/>



Mature Marshelder



Young Marshelder Plants

## COCONUT CRAZE

Walk into a local health store, or even your local grocery store, and you are likely to see coconut oil. Coconut oil is one of the latest health trends. However, do you have all of the facts on coconut oil?

Coconut oil is a tropical oil made from the coconut fruit. Examples of other tropical oils include palm oil and palm kernel oil. There are many health claims about coconut oil ranging from the treatment of lice to treatment of Alzheimer’s disease. However, not all claims related to coconut oil have been substantiated by research.

There are two main types of coconut oil used in cooking: virgin and refined. The first type is “virgin” coconut oil. Virgin coconut oil is extracted from the fruit of fresh mature coconuts without using chemicals or high temperatures. This type of coconut is considered “unrefined” and has a light, sweet, nutty flavor and aroma. It is often used for baking or sautéing at lower temperatures less than 350°.

“Refined” coconut oil is made from

dried coconut meat. It is often chemically bleached and deodorized. It lacks the sweet-nutty flavor of virgin coconut oil. Refined coconut is often used for baking or stir frying, or cooking at temperatures up to 425°.



Sometimes food manufacturers use a version of coconut oil that has been processed further to produce partially hydrogenated coconut oil. Partially hydrogenated coconut oil contains trans fat. We should limit our consumption of trans fats. Check the nutrition facts panel for trans fats.

In regard to nutritional composition, coconut oil is considered a solid fat. It is 92% saturated fat, which is higher than butter. In fact, with the exception of palm kernel oil, all other common

culinary oils, including canola, corn, safflower, soybean, flaxseed, and olive oil contain significantly less saturated fat than coconut oil. Coconut oil is a plant based food and therefore does not contain cholesterol.

Many people believe that coconut oil may have positive health benefits even though it is high in saturated fat. There is some evidence that coconut oil may have a neutral, or perhaps beneficial effect on cholesterol levels. However, while there is much “hype” around coconut oil, there is not adequate research regarding beneficial health benefits.

For now, it’s best for individuals to follow recommendations from the 2010 Dietary Guidelines for Americans regarding intakes of saturated and trans fats. The current recommendations state that Americans should consume less than 10% of calories from saturated fatty acids by replacing them with monounsaturated and polyunsaturated fatty acids. In addition, individuals should keep trans fatty acid consumption as low as possible, especially by limiting foods that contain synthetic sources of trans fat, such as partially hydrogenated oils, and by limiting other solid fats.

The bottom line on coconut oil is that we should continue to limit intakes of saturated fat. There is not yet enough scientific evidence to indicate that coconut oil is “healthier” than other saturated fats. Individuals should avoid foods containing partially hydrogenated coconut oil. If you choose to cook with coconut oil, use virgin coconut oil, and use it sparingly.

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## BANANA NUT SMOOTHIE

- 2 bananas, ripe
- 2 cups pineapple juice
- 2 tablespoons creamy peanut butter
- 2 tablespoons fat-free plain yogurt
- 1 ½ teaspoons vanilla extract
- 6 ice cubes
- Nutmeg to taste

Combine all ingredients, except nutmeg, in blender. Cover and run on high until smooth and well-blended.

Sprinkle with nutmeg.

Calories .....	170
Total Fat .....	4.5 g
Saturated fat 1 g	
Trans fat 0 g	
Cholesterol .....	0 mg
Sodium .....	45 mg
Total Carbohydrate .....	32 g
Dietary fiber 2g	
Sugars 24 g	
Protein .....	3 g

MyPyramid:

1 cup fruit; 1/2 oz. meat & beans



## COOKING CONVENIENCE FOODS

Summer just has a different demand on your time. Many of us will take advantage of taking short-cuts with convenience foods. The last time you popped a frozen pot pie in the microwave, did you read the cooking/reheating instructions? It is very easy to just throw convenience meals in the microwave without taking the time to read how to properly cook them. Convenience foods can be purchased frozen, refrigerated or right off-the-shelf. Because each food has different cooking requirements, it is imperative to read and follow the manufacturer's cooking instructions. The majority of these foods are not ready to eat straight out of the package, and typically, some further cooking is required.

Not following label directions can lead to undercooked food, thus leading to foodborne illness. Follow the basic steps provided while cooking convenience foods to help reduce your risk of getting a foodborne illness. You might

find that proper cooking requires a conventional, convection or toaster oven and not a microwave. Instructions are specific to that product and may not be applicable to all ovens. Remember to stir, cover and rotate foods to allow for even cooking.

Another important consideration in convenience foods is the microwave wattage. Do you know the wattage of your microwave? Wattage is found on the inside of the door or on the back side of the appliance. If your microwave's wattage is lower than what is recommended on the instructions, it will more than likely take longer for your food to be cooked and reach its proper internal temperature. Typically, the higher wattage of a microwave you have, the less time it will take that food to reach its proper temperature.

Lastly, remember to use a food thermometer. After you have cooked the food, be sure to allow the food to "stand" for the allotted amount of time

specified in the instructions. Stand time is important to allow the food to finish cooking or heating through. One cannot tell if a food is properly cooked based on color or texture alone. Using your food thermometer is the only sure way to tell if a food has reached its proper internal temperature. Most convenience foods need to reach an internal temperature of 165°F. Remember to always read and follow the manufacturers' guidelines when cooking or reheating convenience foods.

For more information on food safety, visit this website:

[http://fightbac.org/storage/documents/Cook\\_It\\_Safe/CookItSafeBrochure.pdf](http://fightbac.org/storage/documents/Cook_It_Safe/CookItSafeBrochure.pdf)

## LAUNDRY AND MILDEW

Laundry—nobody's favorite task. However, it's even more difficult when stains won't come out in the wash. What should you do? You should start by making sure damp or wet clothes are not placed in the laundry basket and left for several days.

Warm summer temperatures, high humidity and any remaining food on clothing creates the perfect conditions for the growth of mildew. Mildew is a fungus and appears as dark-colored spots and splotches on textile items. When the textile is left in a warm, humid location with little or no light or air circulation, you have created the perfect condition for very difficult to remove mildew.

Prevention is the key. Experts at the International Fabricare Institute sug-

gest drying any wet textiles before placing them in the laundry and certainly not storing them dirty. Some typical items might include sports wear, t-shirts, towels and other common items. Avoid tossing damp clothing in a dark laundry hamper. If you can't get to the laundry immediately, hang items in an area with good air circulation until dry. Or wash the item as soon as possible, treating the soiled area with a pre-wash enzyme product.

What removes mildew? Actually, only chlorine bleach removes and kills mildew growth and stains. Since not all fabrics are safely treated with bleach, preventing mildew growth may be a better solution than trying to remove it later and possibly ruining the item.

### SMALL LEAKS ADD UP

Faucet leaks are obvious. The cause of leaking faucets is usually due to a worn out washer that can be easily replaced. Replacement washers can be purchased from hardware or home-improvement centers for only a few cents.

But as the chart below shows, this investment can payoff big in monthly water savings.

Type of Leak	gallons wasted per month
a slow steady drip	350
a fast drip	600
a small stream	2,000 to 2,700
a large stream	4,600

Remember to check not only the faucets used daily but also those not used as much such as faucets at the barn or outside.



