

Twin Falls County

University of Idaho, U.S. Department of Agriculture, and Idaho counties cooperating.

January 2010, Volume 1, Issue 1



What's on your plate today?

Rhea Lanting, Extension Educator

It is estimated that 23.6 million Americans or 7.8% of the population have diabetes (CDC, 2007). In Idaho, the incidence is 7.9% of the population (BRFSS, 2007).

Researchers predict that the incidence of diabetes will double by 2034.

Making lifestyle changes, such as changing diet and being physically active can reduce the risk of developing type 2 diabetes by up to 60%. Unfortunately, many individuals find diabetes meal planning to be confusing.

As a result of stakeholder input, I have been offering the Healthy Diabetes Plate curriculum for several years. Just recently, Martha Raidl, Extension Nutrition Specialist with the University of Idaho developed a Healthy Diabetes Website, www.extension.uidaho.edu/diabetesplate. The Healthy Diabetes website provides an overview of diabetes meal planning and is being used as a teaching tool at our diabetes classes in Twin Falls.

The website shows participants how to select foods to help them keep their blood sugar in line. At lunch and dinner, and if you'd like, even at breakfast, fill half of your 9-inch plate

with non-starchy vegetables, such as spinach, broccoli, greens, carrots, peppers, and tomatoes; $\frac{1}{4}$ of your plate with a grain, beans or starchy vegetable, and the other $\frac{1}{4}$ of your plate with a meat or meat substitutes. Be sure to add a fruit and milk to your meal. The website provides colorful clues to visualize portion sizes – 2 cups of vegetables equals two closed women's fists, a $\frac{1}{2}$ cup of vegetables equals half a closed fist; a 3-ounce serving of beef equals a deck of cards, and a $\frac{1}{2}$ cup of fruit equals five large strawberries, 1 large plum or $\frac{1}{2}$ medium grapefruit.

Snacks are important for the individual with diabetes. Remember, to eat them at the same time each day. At snack time, choose non-starchy vegetables, a small fruit, low-fat yogurt, a few nuts, or lower-fat whole grain crackers.

The website also offers tips and tricks. When flavoring your foods, instead of fat and salt, a healthier way to give your foods (Continued on page 2)

Twin Falls County Extension Calendar

February 1-2 and 4, 2010 -
Pesticide Applicator Pre-License Training

February 4, 11, 16, 25 and
March 4, 2010 -
Married and Loving It

February 16-17, 2010
Idaho Hay and Forage Conference

February 19, 2010
Magic Valley Bean School

February 16-18, 23-25, March 9
-11, 16-18, 23-24, 20-31
(6 week program)
Strong Women Stay Young

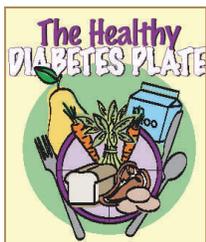
For more information or pre-registration call: 208-734-9590

What's on your plate today?

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an added zing is to flavor them with fresh or dried herbs and with spices – from allspice to turmeric. When buying seasoning packets or a blend of herbs and spices, check the ingredient list to make sure that no salt has been added. Fat is a concentrated source of calories, there are 9 calories in a single gram of fat, compared with 4 calories in a gram of protein or carbohydrate. Try to limit yourself to 1-2 tablespoons of healthy fats per day such as monounsaturated (olive, peanut and canola oils) and polyunsaturated fats (corn, sunflower, safflower, soy and cottonseed oils). Use small amounts of these oils when cooking, and look for them in the ingredient list when buying high-fat foods like margarine and salad dressings.

For more information on Diabetes, contact me at 208-734-9590 or email me at rhlantin@uidaho.edu Watch for Healthy Diabetes Plates classes at our office this summer.



Nutrition Tip— Why Breakfast?

Cammie Jayo,
ENP Program Coordinator

Why is breakfast so important? **Breakfast means you are 'breaking' your overnight 'fast'.** It is time to replenish your glucose levels which supply the body with energy. So a good breakfast fuels you up and gets you ready for the day. Eating a well balanced meal at breakfast time will increase physical activity during the day. Breakfast also reduces your hunger later in the day, making it easier to avoid overeating. A healthy breakfast should have foods from at least three different food groups and contain some protein and fiber. Protein can come from low fat meats, eggs, beans or dairy. Fiber can be found in whole grains, vegetables and fruits. A good example of a healthy breakfast might be something simple like a hardboiled egg, an orange, and a bowl of whole grain cereal with low fat milk or toasted whole grain bread, peanut butter and a yogurt. Stay away from the sugary cereals, syrups, pastries, and white breads because they are digested quickly and will leave you hungry and tired in a couple of hours. Protein and fiber satisfy your hunger and will keep you feeling full until lunch time.

Whether you are an adult or a child, when you eat a healthy breakfast you are fueling your brain and muscles so you have energy to learn, think and do. So be good to yourself and don't skip the most important meal of the day – BREAKFAST!



Preventative Pesticide Applications: Yes or No?

Steve Hines,
Extension Educator

I was asked by a producer the other day about applying a fungicide as a preventative treatment in an effort to improve overall crop health and ultimately yield in cereals and corn. Since then I have heard this come up a few more times. My recommendation for him was to avoid application of a fungicide as a preventative treatment. It isn't that I have any problem with fungicides, chemical applications, or the companies that provide these tools for producers. In the Midwest this type of application is just a routine part of the farm operation but here in southern Idaho we have drier conditions with nice hot summers and although we do have fungal diseases in cereal and corn, the situations are usually not very severe or they come so late in the season that any control would be useless, past where it can affect yield. If you do have a fungal disease, by all means get it identified and if necessary, treat for it. That is only smart management. My concern comes from a couple of different angles. First, if we treat our crops preventatively, eventually we are going to see resistant strains of

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UNIVERSITY OF IDAHO EXTENSION UPDATE

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Published monthly by University of Idaho Extension, Twin Falls County.

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Preventative pesticide applications (Continued from Page 2)

fungi. This is well documented with herbicide resistance in weeds and the University of Idaho pathologists I talk to indicate it can and will happen with fungal disease also. So if we want to keep the fungicide chemistries currently available doing the job they were designed to do, then judicious and necessary applications only make the most sense. Another thing to think about is how the perception of preventative application is going to be perceived by the public. The January 8, 2010 edition of the *Capital Press* contained an article about animal activists wanting to ban the use of some antibiotics in livestock production. The use of antibiotics in animal feed as a preventative measure has been an approved practice for years. While the animal activist folks are concerned with human health and food chain issues, the basic premise is the same. They are not in favor of using antibiotics as a preventative measure. This same idea will surely come around to crop production. Finally, any money spent on inputs must be carefully considered. There are many things out there that *could* improve yield, but none more so than following sound best management practices all season long.



Matching Winter Feed to Cow Requirements

Tianna Fife, Extension Educator

It's that time of year when calving season is about to begin for many operations across southern Idaho. This means the nutritional requirements of the cows will be higher once the calves are on the ground compared to a few months ago when the cows were carrying their calves. The way nutrient use is prioritized (partitioned) is first to maintenance and second to production; whether that's growth, pregnancy, or lactation. In the winter, the cow's nutrient requirements for maintenance can increase due to cold, wet, and windy

conditions. Lactating cows have the greatest nutrient requirements of all, especially if they are young and still growing. The table below provides nutrient requirements for heifers and mature cows depending on their stage of production (last third of pregnancy versus just after calving). Keep in mind that these are just examples and the cows in your herd can vary in weight, age, growth potential, milk production levels, etc., which will change the requirements for your herd.

Nutritional Requirements of Beef Cattle Depending on Stage of Production

	Feed/day (lbs dry matter)	TDN ^a (lbs/day)	TDN ^a (%)	CP ^b (lbs/day)	CP ^b (%)	Ca ^c (g)	Ca ^c (%)	P ^d (g)	P ^d (%)
*Heifer – last third of pregnancy	19.8	11.7	58.9	1.7	8.4	26	0.29	19	0.21
**Heifer – post-partum	20.8	12.9	61.9	2.1	10.0	29	0.31	22	0.23
‡Cow – last third of pregnancy	22.3	11.8	52.9	1.7	7.8	26	0.26	21	0.21
‡‡Cow - postpartum	23.0	12.8	55.5	2.1	9.3	28	0.27	23	0.22

^atotal digestible nutrients (energy), ^bcrude protein, ^ccalcium, and ^dphosphorous

*heifer at 950 lbs gaining 1.4 lbs/day, **heifer at 1,000 lbs gaining .5 lb/day at 10 lbs of milk/day, ‡cow at 1,200 lbs gaining .9 lbs/day, ‡‡cow at 1,200 lbs at 10 lbs milk/day

-Adapted from NRC Nutritional Requirements of Beef Cattle, 6th Revised Edition, 1984

Matching Winter Feed to Cow Requirements

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How does all of this work into feeding and supplementation during winter months? It is important to have hay and feedstuffs tested for their nutrient content. Once tested, the feedstuffs and the amounts can be matched to the appropriate groups of cattle. In addition, it is important to know the cost of each nutrient. All feeds should be compared on a dry matter basis (DMB). For example, If we have fair quality alfalfa (58% TDN and 17% CP, which would meet the CP requirements of the animals listed in the table, but only the requirements for mature cows for TDN) that we bought at \$80/ton we need to calculate the cost of the CP and TDN. If the alfalfa has 10% moisture, the cost on a DMB is about \$89/ton. To figure the nutrient costs see below:

Cost per lb TDN:

$$2,000 \text{ lbs DMB} \times .58 = 1,160 \text{ lbs TDN}$$

$$\$89/\text{ton DMB} \div 1,160 \text{ lbs TDN} = \text{about } \$0.08/\text{lb TDN}$$

Cost per lb CP:

$$2,000 \text{ lbs DMB} \times .17 = 340 \text{ lbs CP}$$

$$\$89/\text{ton DMB} \div 340 \text{ lbs CP} = \text{about } \$0.26/\text{lb CP}$$

When considering the cost of supplementing cows in the winter, follow these calculations for all feeds (hay, tubs, by-products, etc.) that may be used for your cows, and determine which feeds will provide the required nutrients as economically as possible. In addition, you may also want to consider factors such as convenience of feeding, supply, facilities, mineral content (e.g. calcium (Ca), phosphorous (P), salt levels), etc. when selecting a winter supplement. Hopefully these are some helpful tips, and everyone stays warm this winter! Please feel free to contact me with any questions at 208-734-9590, ext. 26 or email me at tiannaf@uidaho.edu.



TESTING AND FEEDING TOBACCO-BROWN HAY

Dr. Bruce Anderson, Extension Forage Specialist
University of Nebraska

Hay baled too wet or silage chopped to dry can get excessively hot and cause certain chemical reactions to occur. These chemical reactions and the heat that produces them will darken your forage and make it smell sweet like caramel.

Livestock often find such hay or silage very palatable. But, the chemical reaction that caused this heat-damaged forage also makes some of the protein become indigestible. Unfortunately, tests for crude protein cannot distinguish between regular crude protein and this heat-damaged protein. As a result, your forage test can mislead you into thinking you have more usable protein in your forage than actually is there.

If your forage test is done using NIR, heat-damaged protein is one of the analyses reported. If the heat-damaged protein is high enough, the test also will report an adjusted crude protein that is lower than the regular crude protein. However, I've found that the NIR test for heat-damage may not be accurate enough for you if your ration contains a lot of this forage and your ration has little or no extra protein in it for your cattle.

What you need to do when heat-damaged protein is suspected is request from your lab a chemical analysis for heat-damage. Then have them use this test to correctly adjust the amount of crude protein your forage will actually provide to your animals.

Forage tests can tell us a lot about the nutrient supplying ability of our forages. But we need to make sure we conduct the right tests and then use the results wisely.



Thermal-unit Growth Coefficient - A Better Predictor of Fish Growth?

Gary Fornshell, Extension Educator

As accurate a prediction as possible of fish growth is required to estimate feed requirement and for production planning. One common formula used is the specific growth rate (SGR) that is based on the natural logarithm of body weight:

$$\text{SGR} = (\ln \text{FBW (final body weight)} - \ln \text{IBW (initial body weight)}) / D \text{ (number of days)}$$

The SGR is limited in that it does not account for environmental variances, such as temperature. Because growth rates can differ at different sizes of fish the SGR may not be accurate over long periods of time. It is also limited in making comparisons between different groups of fish.

An alternative formula for fish growth predication is the thermal-unit growth coefficient (TGC), which is based on the exponent 1/3 power of body weight and takes water temperature into consideration:

$$\text{TGC} = (W_F^{1/3}) - (W_I^{1/3}) / \sum [(T)(\text{days})] \times 100; \text{ where } W_F \text{ and } W_I \text{ are final and initial weights in grams, } T \text{ is water temperature in } ^\circ\text{C}, \text{ and days represents the number of days between initial and final weight.}$$

One TGC is determined, to predict final body weight over a specific period use the following:

$$[W_I^{1/3} + \sum (\text{TGC}/100 \times T \times D)]^3$$

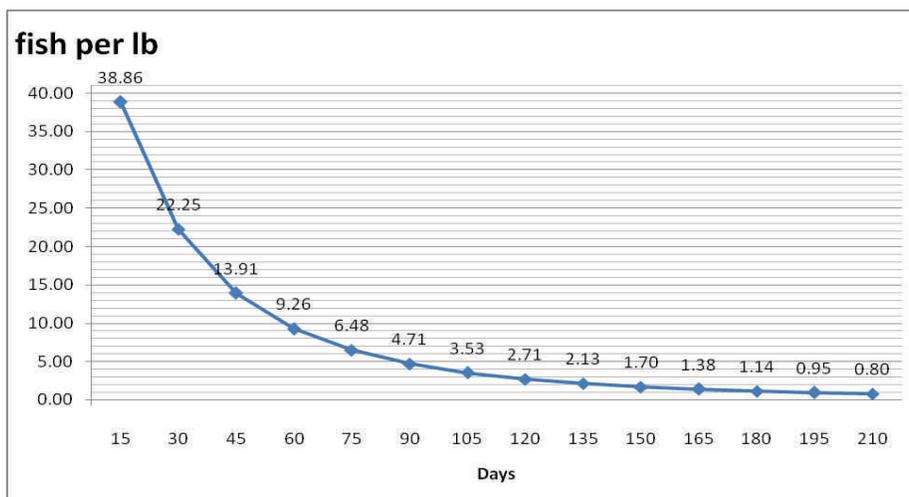
As an example, using production records from "Big Trout" farm, where beginning weight was 36.4 g, ending weight was 445.5 g, water temperature was 14.8 °C, and the growth interval was 140 days:

$$\text{TGC} = (445.5)^{1/3} - (36.4)^{1/3} \div (14.8 \times 140) \times 100 = 0.2087$$

To predict growth, let's say we begin with fish at 5.88 g each or 77.16 fish/pound and grow them for 180 days. What will be the predicated final weight?

$$\text{Final weight} = [5.88^{1/3} + (0.2087/100) \times 14.8 \times 180]^3 = 399.5 \text{ g or } 1.14 \text{ fish/\#.}$$

Using TGC allows comparison between facilities operating at different temperatures, when other factors are the same. TGC is also sensitive to strain, nutrition, and other factors. Once TGC is determined for a hatchery based on previous production records growth can be predicted using the formula above for any time period. The metric units can easily be converted to fish/pound and plotted on a graph, such as the one below.



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