



## Wyoming ranch uses risk scenario planning tool

By James Sedman and  
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Farm and ranch managers know change is inevitable. There is a good chance a business will need to adjust and make one or more operational changes.

Operational changes can range from being relatively minor in nature, such as deciding whether or not to put a few more pounds on feeder calves before selling them. Major change may come in the form of a question brought on by severe drought – like buy hay or sell cows.

Any change brings uncertainty the manager must account for; this uncertainty is also known as risk.

Addressing risk using partial and enterprise budgets is an excellent way to evaluate whether or not to make important changes. Remember, budget projections are only as good as the data used for

price, yields, and costs.

While a producer may have firm data for some of the inputs (such as an Actual Production History yield for crops), many price and yield values are best guesses. A cow-calf operator, for example, may have a good feel for but not know exactly calf weaning weights for a given year.

### The Risk Scenario Planning Tool

Including this uncertainty rather than making an educated guess using a single value is the best way to evaluate strategies.

Risk can be included by taking a wider set of values such as maximum, minimum, and most likely estimates and use probability analysis to forecast prices, yields, or costs, depending on which values are allowed to vary.

Managers can make much more informed decisions when accounting for known uncertainties.



### For More Information

Visit [RightRisk.org](http://RightRisk.org) for risk management planning tools and tips. The site contains numerous resources, including budgeting tools, crop insurance information, producer profiles, online courses, and other information on important topics. To begin using the Risk Scenario Planning tool, click the “Resources” tab and select Risk Mgmt. tools from the menu. The spreadsheet-based tool includes a user guide and pre-loaded examples to help users understand its application.

The academic professionals at [RightRisk.org](http://RightRisk.org) have developed a spreadsheet-based tool called the Risk Scenario Planning (RSP) tool. Users enter projected results for a proposed operational change along with the option to refine estimated outcomes by including uncertainty: such as commodity prices or yields.

The RSP tool combines a partial budgeting approach and probability analysis for nearly any proposed change. We will look at a southeast Wyoming ranch facing an operational decision to learn more about this tool.

### Southeast Wyoming Ranch Production Decision

Our example ranch manager is considering making a decision many Wyoming cattle producers ponder: selling heifer calves or keeping them longer to sell as bred heifers.

The ranch is considering one of two options: 1. Sell 40 heifer calves now for \$137/cwt, or 2. Keep and breed 34 of them and sell the bottom six.

Bred heifer prices and hay prices are the two main uncertain variables. In the next article, we

will take a closer look at how the ranch uses a partial budget framework and the RSP tool to consider their options in greater detail.

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## Weather conditions conducive for grass tetany problems

By Steve Paisley

Many areas of Wyoming have received much-needed moisture in the form of rain and snow the past month – enough to produce spring growth.

Weather has remained cool and somewhat cloudy with possible afternoon showers every day and providing the ideal recipe for potential grass tetany problems. Lush, green growth, cows anxious to get their first taste of green grass in many months, and the continued cool, cloudy weather all contribute to potential hypomagnesemia.

### Conditions that Contribute to Grass Tetany

Grass tetany goes by several names: grass staggers, wheat pasture poisoning, magnesium tetany, and grass tetany all refer to low blood magnesium (hypomagnesemia). Often, blood calcium levels are also low, contributing to symptoms. Metabolic disorders in cattle grazing winter wheat pasture, known as wheat pasture poisoning, is often a result of low blood calcium as well as magnesium.

The cause of grass tetany is often quite complicated. The simplest is consuming forages low in magnesium resulting in a diet lacking adequate magnesium; however, several factors can increase the chances of tetany. Some of these include:

1. Forage or diet mineral levels. Potassium and nitrogen levels in a pasture are two of the most important factors affecting tetany susceptibility. High levels of potassium negatively affect soil magnesium uptake by the plants, and they also reduce the availability of the forage magnesium to the animal. High nitrogen content of the grass has also been linked to increased susceptibility. Aggressive nitrogen fertilization of improved and/or irrigated meadows may also reduce magnesium availability – especially in soils high in potassium or aluminum.

2. Ration and/or supplement composition. Rations or supplements containing high levels of lipids, such as fats or oils, will increase magnesium requirement of the animal. Lipids reduce magnesium absorption by interacting with some of the magnesium forming magnesium soaps, which reduces availability.



3. Magnesium requirements of the animal. Tetany occurs most frequently in animals with the highest requirement, such as adult cows nursing calves under 2 months of age. Tetany is less often observed in non-lactating cows and stockers.

### Prevention

Most recommendations are that plant levels of .2- to .25-percent magnesium are adequate to prevent tetany. Remember, stage of production, soil potassium and nitrogen levels, and supplemental fat may all negatively affect magnesium absorption and increase requirement. Susceptible forages include spring grazing of winter annual forages such as wheat, rye, and triticale. Succulent crested wheatgrass has been reported to have magnesium levels as low as .08 percent. Also, remember symptoms of tetany are often from magnesium and calcium deficiencies.

### Ways of Preventing Tetany Include:

1. Provide high-magnesium mineral. Providing supplemental magnesium and calcium in mineral will help reduce chances of tetany. However, mineral supplements may not totally eliminate the problem on highly susceptible forages because mineral consumption in the spring is often inconsistent – especially in large pastures. Offering high magnesium and calcium mineral a few weeks prior to grazing lush forages

will also help reduce the incidence of tetany.

2. Graze less-susceptible animals such as steers, heifers, and non-lactating cows on high-risk pastures. Also, cattle that develop tetany are more prone to do so again. Consider sorting off magnesium-prone animals prior to grazing lush pastures.

3. Limit grazing access to lush forages or encourage cattle to consume dry feeds to reduce consumption of tetany-prone lush forages.

4. Feed or graze legumes. Grass tetany seldom occurs when legumes and legume/grass mixtures are consumed. Legumes often contain over twice the concentration of magnesium as grasses grown on the same soil.

5. Delay grazing. If possible, wait to graze new, green grass until it is 4-6 inches tall. The longer grazing is delayed, the less tetany will occur. Granted, this is a very unrealistic option in many cases.

### Treating Animals With Tetany

Many animals with grass tetany often perish before symptoms are seen. The interval between the first signs of tetany and death can be as short as four to eight hours. If tetany symptoms are noticed, such as animals grazing away from the herd, acting irritable, with muscular twitching and incoordination, immediate attention is required. Treatment success is highly variable from immediate recovery to little or no response to treatment. Be sure to consult your veterinarian for treatment protocol and additional management tips.

Typical treatment consists of IV administration of calcium and magnesium gluconate and must be administered carefully to avoid a toxic reaction. Additional treatments include administering 200 ml of a 50-percent magnesium sulfate (epsom salt) solution under the skin resulting in high levels of magnesium in the bloodstream within 15 minutes.

For concerns or questions concerning grass tetany, visit with your veterinarian, nutritionist, or local extension educator.

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