

**Speaker Bio: Jim Gerrish**

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Jim Gerrish, is an independent grazing lands consultant providing services to farmers and ranchers on both private and public lands across five continents. He currently resides in the Pahsimeroi Valley of Idaho.

Early Years: He received a BS in Agronomy from the University of Illinois and MS in Crop Ecology from University of Kentucky.

From there he went on to serve 22 years of beef-forage systems research and outreach while on the faculty of the University of Missouri. The University of Missouri-Forage Systems Research Center rose to national prominence as a result of his research leadership. His research encompassed many aspects of plant-soil-animal interactions and provided foundation for many of the basic principles of Management-intensive Grazing.

He has written a regular monthly column in *The Stockman Grass-Farmer* magazine for over 12 years. He has authored two books on grazing and ranch management. Management-intensive Grazing: The Grassroots of Grass Farming was published in 2004 and Kick the Hay Habit: A practical guide to year-around grazing was published in 2010.

Jim was co-founder of the very popular 3-day grazing management workshop program at FSRC. These schools were attended by over 3000 producers and educators from 39 states and 4 Canadian provinces from their inception in 1990 through 2003. Fifteen other states have conducted grazing workshops based on the Missouri model and Jim has taught in eleven of these states. He is an instructor in the University of Idaho's Lost River Grazing Academy held twice annually near Salmon ID. He typically speaks at 40 to 50 producer oriented workshops, seminars, and field days around the US and Canada each year.

For 22 of the years he spent in Missouri, he stayed in touch with the real world on a 260- acre commercial cow-calf and contract grazing operation. In this setting, he took a worn out marginal crop farm and converted it to a highly productive grass farm. After the move to Idaho, Jim keeps his day-to-day grazing tools sharp through management of a ranch unit consisting of 450 center pivot irrigated pastures, 90 acres of flood ground, and several hundred acres of rangeland. He was deeply involved in the Green Hills Farm Project, a grassroots producer group centered in north-central Missouri and emphasizing sustainability of family farms. His research and outreach efforts have been recognized with awards from the American Forage and Grassland Council, Missouri Forage and Grassland Council, National Center for Appropriate Technology, USDA-NRCS, the Soil and Water Conservation Society, Progressive Farmer, and American Agricultural Editors Association.

## **Why you should be out of the hay business**

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Winter feeding costs are typically the single greatest line-item cost in most cow-calf budgets. The irony of this is it doesn't seem to matter whether you live in Minnesota, Missouri, or Mississippi, winter feed costs are still the highest cost. If you want to improve profitability in any resource-based production business, your first best strategy is to tackle your biggest cost items. The best way to manage a cost is to eliminate it. Shaving a little here and there does not make a big impact. Think elimination, not reduction.

Here is another important concept, it is more important to eliminate hay making on your farm before hay feeding because making it yourself may actually be more expensive than buying hay. There are a lot more costs to making hay on your property than just the direct production costs. On a recent visit with a ranch client in northeastern Utah, he reported his cost for making a ton of hay was over \$600. While that may seem impossible to comprehend, he was doing full cost accounting and by the time we get to the end of this presentation, you will understand how he came up with those costs.

In most environments where forage production is based on natural rainfall, you can almost always buy hay cheaper than you can produce it. Most farmers and ranchers initially don't believe this. The biggest reason they don't believe it is because they have never actually calculated their true cost of production. When full cost of production is accounted for, hay generally costs between \$70 and \$140/ton to produce. On smaller operations that own a full line of equipment, the cost can easily exceed \$200/ton. In most natural rainfall areas, beef cow-quality hay can be purchased for less than even the cost level. As long as someone else is willing to lose money on their hay production, you should be willing to take advantage of it.

Hay produced in irrigated environments falls in a similar cost range, but the upper end of the cost range may be much higher depending specifically on irrigation costs and length of production season. Purchase price of hay is typically much higher in irrigated environments compared to natural rainfall areas so the advantage of purchasing hay may be less in irrigated country.

The obvious costs of making hay are the seed, fertilizer, equipment, and fuel for which we see an actual invoice. If we're paying hired labor, we see the cost in their paycheck. If we are both management and labor for our farm, we usually don't pay ourselves a decent wage. Most hay producers know there is something called equipment depreciation, but few actually put it into their accounting when figuring the cost of making hay. On smaller operations typical of many parts of the Eastern and Southern US, equipment depreciation may be one of your highest costs. If you let someone else make your hay, you eliminate that cost.

There is another whole set of costs to hay making we ignore. Those are the opportunity costs of land and labor. What else could you be doing with your hay fields if they weren't being made into hay. Hay making basically takes low-cost pasture and turns it into high priced feed. Grazing your

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hay acres and generating a profit will generally make your farm or ranch more money than the hay ever would. At the very least, it gives you cash income to purchase hay that you didn't have to make.

When you buy someone else's hay, you're also buying their fertility. In some parts of the US, hay sells for less than the soil nutrient value it contains. As long as you feed purchased hay in a manner that allows good nutrient redistribution, purchased hay can become an effective fertilization strategy. If you look at the N and mineral content of typical grass-clover hay and assign either the commercial fertilizer price for the macro-nutrients and livestock mineral price of the micro-nutrients, a ton of hay today contains \$60-\$65 of N and minerals.

Besides the nitrogen and the mineral nutrients contained in the hay, you are also importing a significant quantity of organic matter. A ton of hay with 60% digestibility returns nearly 800 lb of organic matter to the soil. If someone else is willing to give you their organic matter, you just as well take it.

How often do you think about the opportunity cost of your labor. What could you and/or your employees be doing if you weren't making hay? Building or moving fence and water systems? Better managing the livestock you have? Handle more livestock? Spend more time on marketing? Making hay on your own land costs you far more than you might imagine. It costs you your time!

What about the opportunity cost of using your land for hay production to support a cow herd rather than grazing a class of livestock that can generate significant cash income. The client in Utah has a grass-fed beef business and an acre of grass grazed to produce finished beef generates several hundred dollars per acre. That becomes the opportunity cost of using land for cow-herd hay instead. Another client in Kansas generates about \$1,200/acre from a combination of dairy and meat products from their 260 acre farm. They make no hay there, because they view hay only as a cost to their business. An acre devoted to hay is a net loss of several hundred dollars.

Eliminating hay feeding all together saves a tremendous cost to your operation. Hay feeding also makes your cows lazy and dependent on you for their care. Lazy cows are unprofitable cows. Get the hay out of their lives and they will spend a lot more time working for you and you will spend a lot less time working for them.

You need to know how much it costs you to produce a ton of hay so you can make an informed decision about whether you should make hay, buy hay, or eliminate it all together. Setting up a spreadsheet is an easy way to calculate cost of making hay as shown in the example below.

The key to the analysis is to make sure you include all costs and to use costs appropriate for today's economy and your location. The costs shown in the example spreadsheet do not necessarily represent today's costs. This is only an example of the process for determining your costs.

As part of my consulting business, I frequently use this spreadsheet for determining cost of hay production for my clients. During the time period 2003 through 2018, I have only found one producer who had a documentable production cost under \$50/ton, but have found many with costs

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over \$100/ton. In one very sad scenario, I worked with an operation having hay production cost over \$260/ton. For that farm, equipment depreciation was over half their cost. For most of the operations I have analyzed, the cost per ton has been in the \$80-\$140/ton range without considering any opportunity costs.

Many farmers and ranchers who have significantly reduced the number of days they feed hay still retain their equipment to make the small amount of hay needed for winter feeding. Using this strategy usually results in even higher cost per ton because the same equipment overhead is being used to harvest fewer tons. If you cut your hay feeding season from 120 to 60 days, it makes even more sense to buy the remaining hay requirement. Analysis by ag economists at University of Missouri has repeatedly shown the most profitable cow-calf scenario is to stock the farm to its grazing capacity and buy any needed hay.

Bottom line is first quit making your own hay, buy or trade for what is needed, and work towards eliminating hay feeding all together in the long run.

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The table below is a printout from my Excel Hay Cost Calculator. It shows typical costs for a medium sized ranch producing 1600 tons of hay each year. This spreadsheet is available upon request.

HAY PRODUCTION COSTS:					
	<b>Acres of hay</b>	400	<b>acres</b>		
	<b>Expected yield:</b>	3	<b>Ton/acre</b>		
	<b>Number of harvests</b>	2			
	<b>Weight of bales:</b>	1200	<b>lb/bale</b>		
	<b>Total hay produced</b>	1200	<b>Tons</b>		
	<b>Bales / acre</b>	5			
					<b>Cost/acre</b>
	<b>Fertilizer</b>	<b>cost/lb</b>	<b>Removal</b>	<b>Apply?</b>	\$65.43
	N	\$0.50	150	0	\$0.00
	P	\$0.45	36	1	\$16.20
	K	\$0.67	135	0.5	\$45.23
	<b>Spreading cost</b>	\$4.00		1	\$4.00
	<b>Swathing</b>		\$18.00	/A	\$36.00
	<b>Raking</b>		\$4.00	/A	\$8.00
	<b>Large round bale</b>		\$10.00	/bale	1 \$50.00
	<b>Large round bale handling</b>		\$3.00	/bale	1 \$15.00
	<b>Equipment depreciation</b>			/acre	\$ 41.61
	<b>Establishment</b>			/acre	\$43.50
	<b>Irrigation cost</b>			/acre	\$ 40.00

You should be able to come up with all the information needed to fill in the necessary spaces to determine your own cost of producing hay from your ranch. The values for harvesting are based on typical custom rates. With fuel price increasing again, custom rates are likely heading upward as will fertilizer, equipment, and another input made from iron or oil.

