

Grassroots of Grazing— Can Pasture Really Compete with Row Crops?

BY JIM GERRISH

Earlier this year I had a ranch client in the Sand Hills region of Nebraska who was contemplating buying a couple of pivots for pasture-finishing his cattle and was wondering if grazing could be competitive with growing crops on irrigated land. That actually put two questions on the table: 1) Can pasture compete with crops on high value land? and, 2) What is the land-based cost per animal unit day (AUD) in different environments and production scenarios?

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Both of these are questions I have dealt with many times in the past in both general and specific terms. Here are some considerations on the first question concerning pasture competing with row crops on high value land. There are going to be three factors determining relative profitability: 1) pasture yield/acre, 2) value of the product being produced, and 3) cost of production.

Let's start with pasture yield. Most pastures in the US are producing less than 1/3rd to 1/2 of their potential. In many cases it may be only 20%. Comparing highly managed cropping systems to poorly managed pasture will always lead farmers to the conclusion that they should be farming everything they can. However, if we make the comparison between well-managed row crops and pasture, it is no longer a foregone conclusion that the land should be cropped.

Using yield estimates for pasture and crops from the USDA Web Soil Survey and my observations of yields around the US, I have found that in general for each 30 bushels of corn production potential the same acre of ground should be able to produce at least one ton of harvested perennial forage. For example, land producing 180 bushels of corn should be able to produce a harvested yield of at least 6 tons/acre of grass-legume pasture.

What we most often find is that acre is

producing only 2-3 tons of forage because of ineffective grazing management. Hence the conclusion that crops are more profitable than pasture. However, there are people out there who are raising and harvesting 6 tons per acre on that land because they manage their land with the same focus as a crop farmer trying to optimize yield per acre. The next question is how does that forage yield convert to animal yield?

Let's start with something with a good feed conversion opportunity. Taking a 500 lb weanling to an 800 lb feeder with an ADG throughout the period of 2 lbs/day has a feed conversion rate of about 7 lbs forage/lb of gain in the 5-6 cwt range and 11 lbs forage/lb gain in the 7-8 cwt range. If we call the average 9 lbs, then that six tons of forage has the potential for producing about 1200 lbs of gain per acre. Current value of gain for this weight change in stockers is running about \$1.40/lb. A 1200 lbs/acre beef yield with a value of \$1.40/lb is a gross income/acre of \$1680. Not too shabby.

Our 180 bu/acre corn yield would need to be worth \$9.33/bu to earn the same gross income. Even at its peak, corn was not that high. At today's \$3.40/bu, the corn crop has a gross value of \$612/acre. At this point the corn farmer is going to say, 'Yeah, but I'm growing 300 bu/acre!'. Okay, 300 bu/acre at \$3.40 is \$1020/acre. Let's make corn be \$7/bushel again and the gross income jumps up to a very impressive \$2100/acre.

But if the land can produce 300 bushels of corn, it should be producing 10 tons of pasture and so the competing pasture yield should also be going up. We could continue to chase the relative yield conversation around and around in circles, but we're going to come to the same conclusion: pasture managed as effectively as row crop operations has very competitive yield potential.

We just used commodity stockers as our example of a pasture product. What if the product is premium priced pasture-finished beef or lamb? Or value-added dairy products? With high value products, the advantages of pasture on premium priced land increases even more.

When I first came to the University of Missouri-Forage Systems Research Center in 1981, my basic assignment was to make beef cattle competitive with soybeans on marginal North Missouri farmland. After being there and working with managed grazing for just a few years, my conclusion was why on earth would

anyone want to grow row crops on any of this land when pasture could be so much more profitable.

Here I am 33 years later asking the same question because the basic relationships have never changed over that time period. Effectively managed pasture is more profitable on just about any class of land compared to commodity row crops. Vegetable production and premium priced row crops will beat pasture in some cases, but commodity grain virtually never will. The one downside of prime farmland is grazing doesn't work that well on some of the very heavy soils, so farming those might be a better idea.

Why isn't this apparent to most farmers? I think there are two big reasons. First is they simply don't understand how to manage pasture effectively and second is they still think about gross income and not net margin most of the time. The third piece of the profit equation is cost of production and that is where net margin really favors pasture over row crops on most land.

Last summer when I was doing a pasture walk series in Iowa, there was always the corn conversation running in the background. Corn was worth \$3.40/bu and the breakeven cost of production was \$4.20/bu. Taking our 180 bu crop, the cost per acre would be about \$756/acre. I cannot even begin to comprehend how I could begin to spend that much in any sort of a perennial pasture setting.

A 1,200 lbs/acre beef yield with a value of \$1.40/lb is a gross income/acre of \$1,680. Not too shabby.

What's the difference? Row crop production is built on iron and oil. Pasture production is built on capturing solar energy, an effective water cycle, dynamic mineral cycling, and biodiversity. There is far more net margin potential managing things you can control compared to relying on purchased inputs over which you have no control. 🌱

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