LIVESTOCK AND NATURAL RESOURCES

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WHAT BUSINESS ARE YOU REALLY IN?

If I asked that questions, how would you respond? Some possible answers might include: rancher, farmer, grower, cow-calf, stocker, feeder, and many other labels.

If you take a deep breath and consider the above answers — do they really get at the questions, or do they merely describe the type of business you are in?

My Two Cents

In my humble opinion, the answer to the question asked above in the title is that livestock raisers are really in the **ENERGY BUSINESS**. We need to optimize energy capture from the sun by the grass to maintain a viable food resource. The land and the sun together combine to make up the most economical energy source around.

Allan Nation, published of the ***Stockman Grass Farmer*** grazing newspaper put it best at the 1987 Pacific Northwest Conference: *"We've got a crop that God will grow for free. We've got a harvesting machine that runs on sunlight and water, but we've had one key element missing. That element was the ability to efficiently control and steer our harvesting combine. And, it was this one missing element that allowed row crop farming to be more profitable than grazing.*

Consider, for example, the economics of growing a crop, but having a combine aimlessly churning through the field the entire growing season. It would be bad enough if this combine were only loose to do damage when the crop is ready to harvest, but I am talking about a combine that wanders aimlessly over the crop from the day the first seed is planted. Picture that, please. Can you imagine how much of the crop would be crushed by the wheels of the combine compared to how much would wind up in the hopper?

While this sounds totally ridiculous in the context of a soybean or corn crop, it is precisely how we have been attempting to harvest our grass crop."

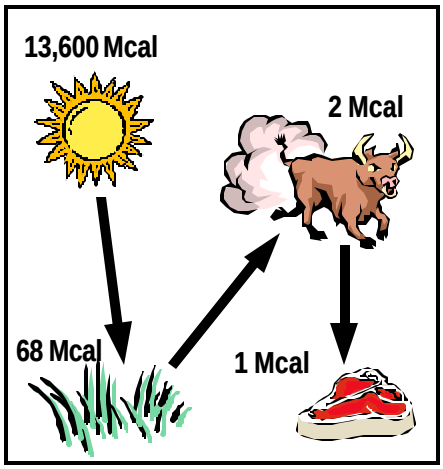
What Causes Grass Growth?

Grass growth requires the sun in order to grow. Solar energy captured by leaves of the grass plant allows photosynthesis to occur.

Photosynthesis is important because it is how the palnt produces food for maintenance and growth, with excess production being stored in the roots. If there's bare ground or rocks, we fail to capture sunlight energy. We need plant cover to capture the sun's energy.

We need to keep leaves out there because there is a lot of inefficiency in capturing solar energy *(see below)*. Over 13,600 megacalories *(Mcal)* of the sun's energy strikes each acre every day. Plants are only able to capture 0.5% of that total or 68 Mcal per day. Of that 68 Mcal energy captured by the plant, only 2 Mcal is captured by the animal when it harvests the forage. Out of that, 1 Mcal of energy is used to create a saleable product.

Just think how inefficient things become when we do



not keep up the leaf area out there to harvest the sun's energy.

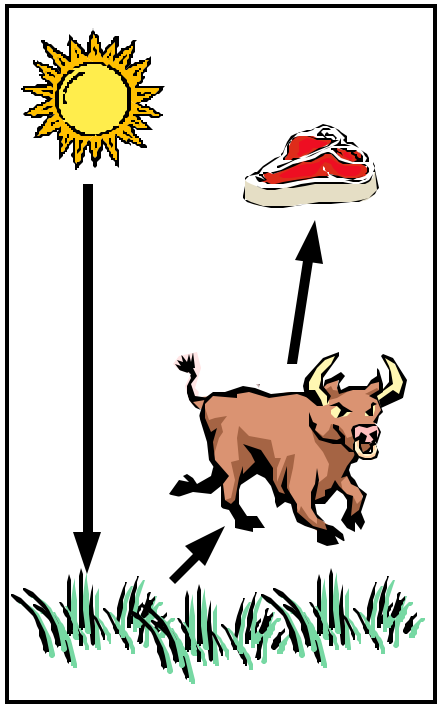
Ranchers or Grass Farmers?

Grass that captures sunlight energy can grow more grass which can then be harvested by livestock. Our four-legged critters take that harvested solar energy and convert it into a saleable product.

More grass = more production = more sales = more income ($$)

The key is keeping plenty of the feed resource — grass — to feed our livestock. We can keep costs down the more we utilize. Supplemental *(or more accurately, substitution)* feed costs are the number one operational costs in producing a saleable product.

Types of Energy



There are two ways to utilize energy — as Internal resources or as External inputs.

An example of internal resources would be using grass plants to capture energy from the sun. An example of an external input would be synthetic fertilizer.

In order to manufacture the fertilizer, we still use sunlight energy — it's just that it comes from fossil fuels that took thousands of years to create.

In an article in the January 1986 ***New Farm*** magazine, Robert Rodaler observed that agriculture has been known to have been practiced for around 10,000 years. For around 9,900 years, farms were self-reliant as they functioned on their internal resources.

Internal resources include: sun, air, rain, plants, land, humans, and other resources within the immediate environment of every farm. Almost everything needed came from within the borders of the farm.

Over the last 100 years or so, agriculture has evolved from relying on internal resources to maximizing the use of external inputs.

Examples of external inputs would include: synthetic fertilizers, irrigation, and pest control chemicals. Concerns over being ablve to produce enough food to feed an ever expanding population and scientific advancements in food production led to the change.

Rodale noted that increased reliance on external inputs enabled farms in the United States and other developing countries to produce more food. This was helpful, but over time we tilted toward increased reliance on external inputs. Greater reliance began to cloud our knowledge of the value of internal resources.

The Energy Survey

Enough of my words! it's time for you to participate in the great energy survey.

On the following page is a table with some typical farm and ranch practices listed in one column. There are also two other columns — one for internal resources and the other for external inputs. Put a check mark in either the internal or external column for each practice listed.

For example, the first one listed is planting. More than likely, you will use a tractor to do the seeding, which requires gasoline or diesel to run. As a result, I would put a check mark in the external column. You can do the rest.

I took the survey and, before continuing, look on page 4 to see how I filled it out.

Based on my survey results, that's a lot of energy! Rather than try and internally capture sunlight energy, we have come to rely on a finite supply of fossil fuels to power the machinery, make the vaccines, transport the animals, and so on. You may think of burning as an internal source of energy, BUT you probably need fuel to start the

The Energy Survey		
AG PRACTICE	**INTERNAL RESOURCE**	**EXTERNAL INPUTS**
Plowing		
Seeding		
Irrigation		
Fertilize		
Spray for weeds and insects		
Burn		
Mow		
Windrow		
Bale		
Pick up bales and transport to barn		
Take bales from barn to feed site(s)		
Livestock transportation		
Supplemental feed		
Marketing		
Graze		
Vaccinate		

fire, CDF crews will be on hand if it is a controlled burn, etc.

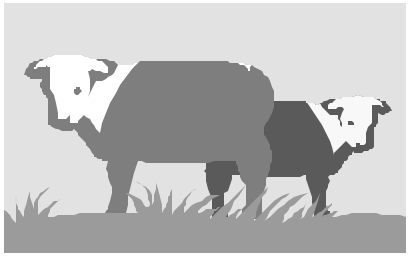
Farms and ranches have evolved from self-reliance on existing resources to importing energy to maximize production. Given the low margins that exist in agriculture *(have you checked the latest cattle prices — **OUCH!**)*, it seemed like the only solution. Technology Cannot Bail You Out

This is not to imply that the use of external inputs is bad. According to the 1992 Ag Census, less than two percent of our population is involved in ag production.

Judicious use of external inputs can be necessary in some situations. **HOWEVER**, too many of us have gotten in the habit of running to the next quick fix to bale us out of a problem. It helped temporarily but the underlying problems remained.

An example follows that might help illustrate what I am talking about. Let's say someone was rhythmically pounding a hammer on the side of your head every second. Someone comes along and offers some aspirin. You take it and temporarily your headache stops. Unfortunately, your head is still getting pounded with the hammer. Until you deal with the hammer, nothing will truly change.

My point of all this is simply to look at your place and try and maximize the use of internal resources. Doing so will enhance the sustainability of your operation from an economic, environmental, and family standpoint.



Roger's Energy Survey		
AG PRACTICE	**INTERNAL RESOURCE**	**EXTERNAL INPUTS**
Plowing		**X**
Seeding		**X**
Irrigation		**X**
Fertilize		**X**
Spray for weeds and insects		**X**
Burn		**X**
Mow		**X**
Windrow		**X**
Bale		**X**
Pick up bales and transport to barn		**X**
Take bales from barn to feed site(s)		**X**
Livestock transportation		**X**
Supplemental feed		**X**
Marketing		**X**
Graze	**X**	
Vaccinate		**X**

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