OMAFRA Virtual Beef

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A TMR Mixer for Every Beef Farm?

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A good starting point for the discussion of the value of a TMR (total mixed ration) mixer is to accept that this is a very defendable nutritional paradigm. The idea that we can create a ration where we can combine very different feedstuffs, with every mouthful being the same, combined with acidosis prevention seems to make this one a no-brainer. But is it? This article will make cases both for and against this very important nutritional tool.

The Case For TMRs On All farms

With the advent of the 'kitchen blender' style of mixer (vertical auger), TMRs have accessed a whole new audience of farmers. The typical mixers of a decade ago were the horizontal augers, which served the feedlot and dairy sectors well. However, their major weakness was the inability to use large amounts of hay. They were inflexible in forage harvest method and could not realistically use large bale hay or baleage. The newer breed of mixers allows maximum flexibility with ingredients, permitting use of various commodities, forage types and

Figure 1: TMRs require fence line feeders

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storage methods. The manufacturers of these mixers have also recently begun to validate their mixing performance, which is especially important for rations which include urea or medications. Initially, many of the 'kitchen blender', vertical-auger style units did not have mixing efficacy data… a fact which may still persist in some brands. They were designed primarily for convenience, without regard to mixing precision beyond visual checks.

Currently, I primarily recommend these vertical-auger style mixers (provided the manufacturer has mixing verification data), specifically because of their flexibility. So today, even a cow-calf operator who feed mostly round bales can participate in the TMR advantage. But why would they? Numerous articles have been written about using commodities to stretch hay inventories. The TMR mixer becomes the perfect tool to use with wet or pre-processed commodities (distillers, screenings, pellets) in forage based rations. It is also the perfect tool to facilitate the use of poor feeds such as straws, stovers and overly mature hay with fermented feeds. Furthermore, the machine allows the addition of urea as a 'protein' source, and becomes a means to include ionophores to boost feed efficiency in cow rations without using a pelleted supplement. In summary, the benefits of vertical-auger TMR mixers are:

Flexibility

- **Inclusion of any type of forage/storage method, at high levels**
- **Utilization of low quality forages**
- **Inclusion of commodities**
- **Ration homogeneity – acidosis control**
- **Mixing precision**
- **Ability to use urea (NPN) in rations**
- **Ability to add medications - including ionophores to boost cow efficiency**
- **Potential for improved feed efficiency from properly balanced rations**

So the reasons are clear why a TMR mixer could be useful on every beef farm, including cow operations in addition to the entire cattle feeding sector. The advantages in the cow ration may be a little different than in the feedlot, but it's the same tool, so of definite advantage in cow/calf to finish operations!

The Case Against TMRs

This technology comes with both capital costs (starting at $25K) and operating costs (tractor, fuel, labour). The feeding infrastructure almost certainly needs to be fence-line feeding or some approximation.

Also, the forage in TMRs needs to be processed at harvest or at mixing… so the savings of not chopping in the field are lost when processing happens in the mixer. Based on field evaluations, I suspect baleage shredded in the mixer is the most inefficient (energy, cost perspective) way to get haylage into a TMR.

So the downside of TMRs is:

- **Price**
- **Operational costs (fuel, wear, labour)**
- **Feeding infrastructure**

These machines do have a downside…and it largely relates to the economics, especially if the feeding opportunities don't match the machinery cost.

And The Verdict Is…

The bottom line on this newer breed of TMR mixers is that they give extreme flexibility to ration formulation and feeding. They provide a great opportunity to mix and match all forage types, commodities and feed additives. Capital and operating costs and labour makes them more viable in large herds with full time managers. Likely the price tag will be a disincentive to average and even above average sized herds, so I'd expect this only to take off in cow herds of 100 or 150 plus. In these larger herds, potential feed cost reductions can quickly pay for the machine, so that's the group where they will likely be most heavily adopted.

An Alternative To TMRs

Alternate day feeding is one way of using two different feeds. For example, in a cow herd that is using NPN-treated corn silage and a poor quality hay to balance a third trimester ration, feed corn silage the first day, hay the next, and repeat. This will work as long as the feeds are not too different, assuming there is enough bunk space (that fence-line feeder again). If a farm can do a <u>really</u> good job of alternate day feeding or grazing, the mixer may not provide an advantage. For the grazier who only needs 120 days winter feed, anything more than a dry hay system may be a waste because the daily feed savings don't have enough days to offset the capital costs. But if a cow operation can't and wants to compete in the cow business, the vertical-auger TMR mixer may be tough to beat.

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Corn Energy Value - A Comparison of Harvesting Corn as Shelled Dried Corn, High Moisture Corn, High Moisture Cob Corn (cob meal) and Corn Silage

Ron Lackey - Feed Ingredients and By-products Feeding Specialist, OMAFRA

The higher corn prices we have been experiencing have had many beef producers re-evaluating their feeding programs and considering their feed ingredient options to potentially reduce feed costs. These corn prices, coupled with projected higher drying charges or costs, prompted me to compare the cost of energy from a home grown corn crop, looking at different harvesting options. The calculations were based on the assumption of a 160 bushel per acre crop of corn and an opportunity cost or replacement cost value of $5.50 per bushel. Costs for harvest, trucking, drying and for putting the corn into storage were included. I did not factor in the capital or operating costs of storage, so the numbers do not capture all the costs that could be included, but they hopefully are "food for thought" as we look for ways to reduce feed costs.

Based on my calculations, the cost of energy from corn silage is approximately 33% less than that of dry shelled corn, and the energy from high moisture cob corn is approximately 17.5% less than the energy cost of dry corn. If someone approached you with a product that could potentially reduce your feed costs by 33% or 17.5%, I think they would have your attention. Some producers like dry corn because it gives them some marketing options, and they are right! However as with many options, there can be a cost.

Production - per acre, assuming a 160 bu per acre corn crop.

	Total Weight	Protein	Energy(TDN)
Scenario #1			
Shelled Corn (15.5%D.M.)	8,960 lbs	(8%) 717 lbs	(80%) 7168 lbs
Scenario #2			
High Moisture Corn (75% D.M.)	10,095 lbs	(7.1%) 717 lbs	(71%) 7168 lbs
Scenario #3			
High Moisture Cob (72%D.M.)	12,618 lbs	(6.5%) 828 lbs	(65%) 8164 lbs
Scenario #4			
Corn Silage (35%D.M.)	45,820 lbs	(2.8%) 1283 lbs	(24.5%) 11,226 lbs

Both corn prices and energy costs are softening at the present time and I won't speculate on where either is going in the future. However, during times of high corn prices and energy costs there are some feed cost savings to be had by including more corn silage in rations and using high moisture grains such as high moisture corn or high moisture cob corn.

Costs – per acre-assuming an opportunity price value or a replacement cost of $5.50/bu

Scenario #1

Shelled Corn 160 bu/acre @ $5.50	=	$ 880.00
Drying Costs @ $24 /t (25% moisture)	=	$ 97.50
Combining @ $40 /acre	=	$ 40.00
Trucking @ $8 /t	=	$ 4.06
Total Cost		**$1021.56**

Scenario #2

H.M.C. (based on 160 bu/acre)	=	$ 880.00
Combining @ $40 /acre	=	$ 40.00
Placing in Storage @ $8 /t	=	$ 36.62
Total Cost		**$ 956.62**

Scenario #3

High moisture cob corn (based on 160 bu./acre)	=	$ 880.00
Harvesting $215 /hour @ 2.5 ac/hr (includes picking, processing, hauling and blowing)	=	$ 86.00
Total Cost		**$ 966.00**

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Scenario #4

Corn Silage (based on an equivalent 160 bu/acre)	=	$ 880.00
Harvesting $215 /hr @ 2.5 ac/hr	=	$ 86.00
P&K removed in stover (~$5.25 /t)	=	$ 109.10
Total Cost		**$1075.10**

Cost of Energy - ¢/lb of TDN

Scenario #1- dried shelled corn
Total costs ÷ energy yield = $1021.56 ÷ 7168 lbs. = **14.3 ¢/lb**

Scenario #2- high moisture corn
Total costs ÷ energy yield = $956.62 ÷ 7168 lbs. = **13.3 ¢/lb**

Scenario #3- high moisture cob corn (cob meal)
Total costs ÷ energy yield = $966.00 ÷ 8164 lbs. = **11.8 ¢/lb**

Scenario #4- corn silage
Total costs ÷ energy yield = $1075.10 ÷ 11,226 lbs.= **9.6 ¢/lb**

ASSUMPTIONS

- No costs are included for storage.
- No allowance for potential differences in field loses based on harvest moisture.
- The cob portion in high moisture cob corn adds approximately 20% more in weight than a similar yield of high moisture corn.
- The energy and the protein are calculated on an "as fed" basis.
- The value of the protein yields have not been calculated, but should also be considered.
- Differences in feeding value or potential gain have not been calculated.
- A "thumb rule" yield of 1 tonne of 35% dry matter corn silage per 7.7 bushels of shelled corn.
- The small case letter "t" is the abbreviation used for metric tonne.

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Developing A Competitive Edge

John Bancroft
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Today's competitive and volatile agricultural marketplace challenges producers to find a balance for their business's production, finances, and marketing. Prioritizing business management activities and exploring marketplace opportunities are two key elements that contribute to finding a competitive edge. To address these two key elements there are two workshops, "Growing Your Farm Profits: Planning for Business Success" and "Growing Your Opportunities – Value Plus".

Last winter pilot workshops, called "Grow Your Farm Profits: Planning for Business Success" were delivered in a partnership between the Ontario Soil and Crop Improvement Association and OMAFRA. These workshops are designed to challenge producers to examine and prioritize their business activities. This is achieved by using a process of self-assessment similar to that which is utilized in the Environmental Farm Plan program. Answering assessment questions in eight areas of farm business management allows producers to prioritize their strengths and weaknesses. The areas of focus are business strategy, marketing, production, human resources, financial, social responsibility, succession planning and business structure. From here direct action can be taken to address areas of concern to improve farm management skills and knowledge.

The Growing Your Opportunities workshops, which began in 2005, have evolved into a two day training program to explore new marketplace opportunities. Through real life examples, interactive case studies, and participant discussions the Growing Your Opportunities – Value Plus workshop addresses the following items:

Understanding the value-added process
Developing and evaluating new product or business ideas
Market research and developing a market strategy including collaborative options
Product and service development
Building a Value Added Business – SWOT analysis
Skills assessment for value-added and creating a mentoring team
Risks when Value Adding
Planning – The business plan
Financing, profit margins or funding the new idea development

The training and tools are targeted to guide producers through the business planning steps needed to make new business ventures a success.

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If these are areas of interest, stayed tuned as further information and details on these workshops will be available in the near future through the Agricultural Contact Centre at 1-877-424-1300 (email at ag.info.omafra@ontario.ca).

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Do You Have A Crop In Storage For Later Sale?

John Bancroft, Market Strategies Program Lead, OMAFRA

If you have an eligible crop(s) in storage (e.g. corn, soybeans, wheat, and canola) that you are planning to sell in the future, the Advance Payments Program for Crop Storage is a cash flow tool that you may benefit from.

This Agriculture and Agri-Food Canada program is designed to assist producers with their crop marketing program. An advance (loan) can be obtained based on eligible crops in storage and is repaid as the crops are sold. The advance rates for each eligible crop are predetermined and are outlined on the application form.

For example as of October 1, 2008, the advance rates for the following eligible crops were:

Corn - $2.79 per bushel
Soybeans - $6.31 per bushel
Winter Wheat - $3.11 per bushel
Canola - $4.62 per bushel
White Beans - $10.00 per cwt
Spring Wheat - $3.55 per bushel

On the ACC Farmers' Financial website (www.accfarmersfinancial.ca), an interactive spreadsheet program allows you to calculate how much you may borrow. A total of 37 crops are covered by the program. Farm-fed crops do not qualify for this program. The maximum advance is $400,000 with the first $100,000 interest free and the remaining amount up to $300,000 at prime minus ¼%. All advances must be repaid in full by September 15, 2009.

The program is administrated by ACC Farmers' Financial in Guelph. The application deadline is February 28, 2009. An administration fee of $400 and a holdback of 2% will be deducted from the advance. An "Advance Payments Program Priority Agreement with a Secured Creditor" (part of the application) must be completed and signed.

For complete information and application forms for the Advance Payments Program for Crop Storage, contact ACC Farmers' Financial in Guelph.

Telephone: 519-766-0544
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