Growing Crops and Feeding Cows with Less Water… *utilizing sorghum silage*

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SORGHUM: the SMART CHOICE for FORAGES

Sorghum and Dairy… Arid Companions

1. Sorghum hybrids are suited for arid climates
   - Western dairy migration
   - Sorghum more suited than corn if arid
   - Capable of ***roughage*** & ***starch*** production

2. Sorghum hybrids offer flexibility
   - Multiple cuttings possible
   - Flexible planting and harvest dates

One plant many feedstuffs!

- Silage
- Dry Milo Grain
- High Moisture Milo Grain
- Dry Hay
- Balage
- Dry Milo Stalks
- Stalklage
- Graze Fresh or Graze Stubble
- Milo Distillers Byproducts

Carbon and Nitrogen

For a dairy farm, carbon and nitrogen = $$$$$$

Milk Protein and Milk Fat lbs sold = dairy income

*In arid climates, should more of the C and N come from **SORGHUM** species?*

Carbons in Sorghum Crops

Fiber in sorghum stalks and leaves is abundant!

- This fiber is needed for rumen health
- End products of fiber digestion make butterfat

Starch level in sorghum grain almost equal to corn!

- Recent analysis indicate approx 70% starch
- Starch digestion drives milk protein production
- Discussion needed on processing hurdles

Sugars in sorghum stalks act similar to starch

Nitrogen a lesser player

Crude protein content important, but in 2nd place

- Depends on price of alfalfa
- Is SBM $500/t or $350/t

Why does protein vary in the plant?

- Level of nitrogen fertilization
- Stage of maturity at harvest
- Variety

Range in forage = 9-18% (remember nitrates!)

Is all fiber equal? BMR…

Fiber digestibility is key in the diet

-There is a limit to ***undigested fiber*** in the diet

- Bulk fill limits intake and thus milk

-Stage of maturity at harvest… young is better

-BMR genetics increase digestibility for sure

- Some interest but slow to catch on in dairy industry
- Agronomic considerations (yield, water, lodging)
- Definite value to the dairy producer

"This BMR sorghum will replace corn silage!"

Really?

BMR genetics *improve* ***fiber digestibility*** *which is good but comparing BMR sorghum silage to corn silage is like comparing pickups to tractors…*

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Corn silage *is fed primarily for* ***starch*** *from the high grain content. Correctly fed* ***BMR sorghum*** *silage is fed primarily for the quality* ***fiber****.*

But isn't there lots of grain in my silage?

Yes, but we have a serious digestion problem!

The problem is with the BB's

Variety trials with lab results from finely ground samples may not relate well to the true digested nutrients in an actual feeding situation.

DNMC Research- CSU

Determining starch availability in Sorghum Silage

-Use commercial dairies with high sorg sil diets

-Feed, forage, TMR, manure analyzed for starch

-Utilize literature accepted corn starch dig value

-Lignin as a marker allows for dig calculations

-Find out if the visual BBs in manure are significant

-Develop a model for various pricing situations

-Look for trends of better dig sorg sil starch

- Ration roughage levels or plant maturity

Possible to process the BB's?

The milo kernels are ***too small*** for normal kernel processing rolls in silage choppers

There has been some discussion about a solution to this problem… will wait and see

So, a 20% starch content from the lab may go in my computer at only 10%

In summary, forage is the focus

Until there is progress on a KP solution

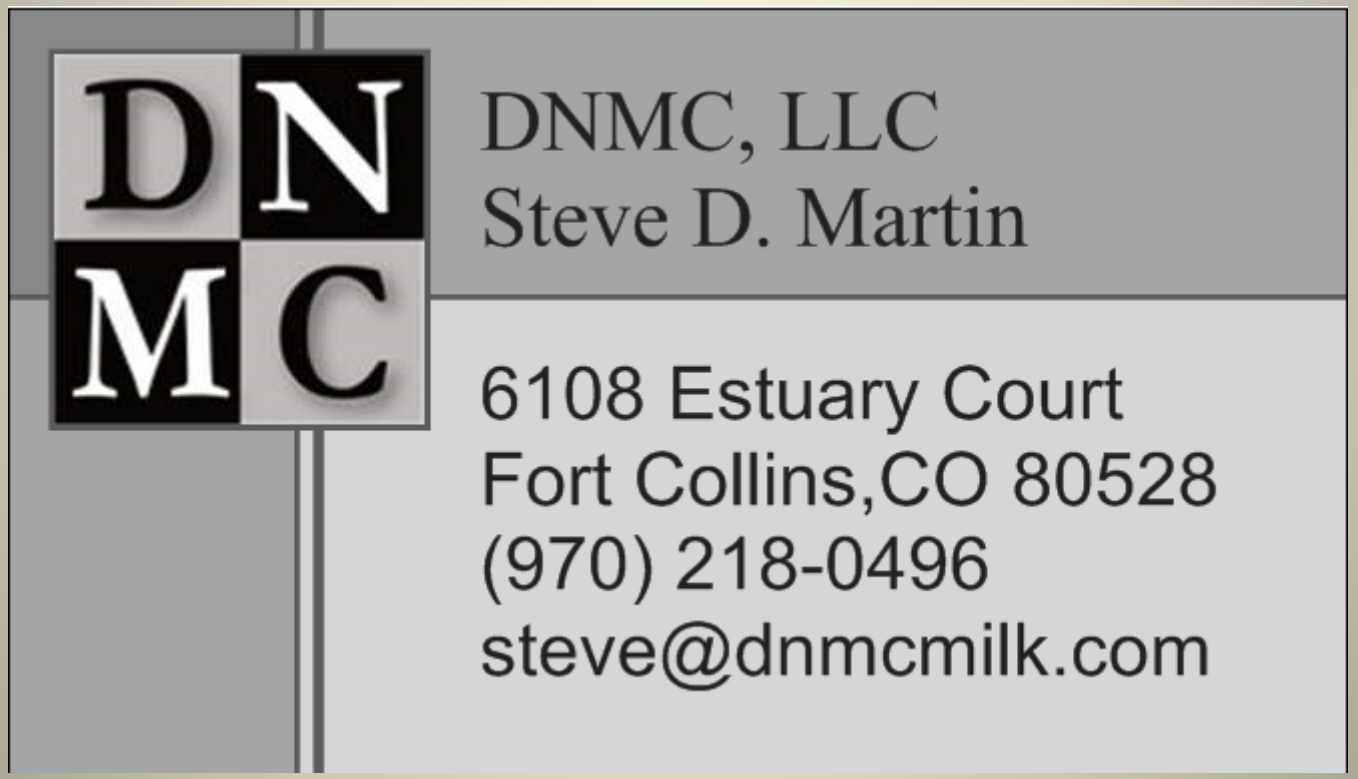
-Focus on forage and fiber from sorg silage

-Interest in BMR for sure… help needed

-Perhaps male sterile or photoperiod

-Complete needed research on kernel dign

Questions?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