

Managing Grass Forages

The panel discussion on managing grass forage was led by Ed Henderson from Shenandoah Dairy near Live Oak and Sutton Rucks from Dry Lake Dairy near Okeechobee. Sutton Rucks comments are summarized through printing of some of the slides that he used during his presentation.

Forage Program at Shenandoah Dairy

Ed Henderson

Shenandoah Dairy utilizes a forage program to offset purchased feeds. Forages grown are ryegrass and sorghum. The ryegrass is planted in September. Harvesting begins around Thanksgiving using a flail chopper to cut the ryegrass as green chop. Green chopping will continue through certainly the end of April. If weather permits (cooler spring temperatures), then green chopping will continue into May. A very cool spring allowed the harvest into June one-year, but that is very unusual.

After the ryegrass is completed, sorghum is planted and harvest target dates are in late August. Sorghum is harvested as silage. Corn is not an option for a rotation with ryegrass because planting is delayed until May or early June. Corn typically cannot tolerate the heat and insects in summer like sorghum. Further, sorghum compliments the ryegrass in the ration very well because the ryegrass is very soluble and the fiber is highly digestible.

We will also harvest ryegrass as silage. This is very vital to a successful green chop program. The ryegrass will out grow our ability to harvest the premium, tender forage. When the growth typically exceeds our ability to green chop, we will pass over fields beginning in late February and March. We will harvest grass as silage that was not cut for green chop in March and the again at the end of the season. Ryegrass is harvested three to four times per year using green chop, silage, or both. Summer time rations use rye grass silage along with sorghum silage and some corn silage (corn silage is continually phased out as more acres of ryegrass are planted).

Green chopping is the most cost effective method to mechanically harvest forage (grazing is least cost). With green chopping, there is no cost of storage and shrink is minimal. The real advantage is the ability to feed large amounts of forage. Generally speaking with ensiled forages, the percent moisture in the feed limits you. Green chopping will allow a much lower percent dry matter for a TMR. Typically dry matters for our TMR utilizing green chop will be in the low to mid 30's. I have included some analysis of ryegrass that have been harvested at Shenandoah. Also included is a typical ration that is fed utilizing green chop and sorghum silage.

The objective of our feeding program is to maximize homegrown forage intake. The goal is to feed the milking herd fifty percent of the dry matter from forages.

Analysis of ryegrass illustrates a protein concentration usually from the low twenties to thirty percent or more. This is the highest quality feed available to Florida. In order to offset feed purchases, high quality forages are a must. Marginal cost of harvesting additional forages are minimal compared to the offset in purchased commodities. Once the equipment, labor and management are in place, there is little additional cost to harvesting more tons. As long as the forage is high quality, more pounds are fed which is truly the benefit to a successful forage program.

There is a down side to green chopping. It is a daily chore just like milking. There are also extreme variations in quality and dry matter of green chop from day to day and field to field. These variations lead to swings in production. However, the advantage is reduced feed cost. We also feed high concentration of forages to our young stock and dry cows. Forages fed are generally 75% of the ration or more in these mixes.

The learning curve has been steep. We would be happy to share our learning experiences with any dairyman. We have made tremendous strides in our forage program. Feed costs have been greatly reduced and herd health has improved. We look forward to continued improvements in this enterprise.

Data follow that show a TMR that we have fed utilizing 15 lb dry matter per cow daily from ryegrass. Additionally, three laboratory analyses of ryegrass are shown as examples. Note the range in crude protein (dry matter basis) from 22.7 to 31.1% and the phosphorus from .32 to .44% of dry matter. We are starting to keep records of phosphorus removals with ryegrass harvests for possible use in future discussions if phosphorus applications to cropland must be limited to somewhere close to removal amounts.

SPARTAN DAIRY RATION EVALUATOR
 MICHIGAN STATE UNIVERSITY
 COOPERATIVE EXTENSION SERVICE
 DEPARTMENT OF ANIMAL SCIENCE
 ed henderson
 Page 1

Lactating HOLSTEIN cow
 Age: 42 months Lactation #: 2
 Body wt: 1350 lbs Avg gain: 1.0 lbs/day
 Milk prod: 80 lbs/day DIM: 120 days
 Milk Fat: 3.5% Milk Protein: 3.3%
 Condition Score: 2.6 Temperature:

O F F I C E S H E E T

Shenandoah Dairy
 File: C:\PROGRA~1\SPARTD2\DRT\HH011300.DRT 4/18/00

Mix	Feed	AsFed	LbsDM	DM	NE1	CP	UndegP	NDF	EfNDF	ADF
		--lbs--	---lbs---	%---	Mcal/lb-	%DM--	%CP--	%DM--	%DM--	%DM--
	Sorghum Silage	36.54	11.00	30.1	0.62	9.0	25.0	57.7	57.7	36.8
	Ryegrass Greencho	75.00	15.00	20.0	0.75	23.0	30.0	42.4	42.4	24.9
	Hominy feed	10.00	9.00	90.0	0.91	11.5	35.0	18.0	0.0	13.0
	Citrus	5.56	5.00	90.0	0.80	6.9	30.0	40.0	20.0	22.0
	Molasses	2.05	1.60	78.0	0.75	9.0	10.0	0.0	0.0	0.0
	Soybean meal 48	4.44	4.00	90.0	0.91	55.0	30.0	10.0	0.0	6.0
	Concentrate	7.88	7.40	93.9	0.80	16.4	54.0	30.6	7.1	12.1
Totals by weight		141.48	53.00	37.5	41.00	9.4	3.1	19.0	14.2	11.2
Requirements			53.00	0.0	37.03	8.4	2.4	15.4	12.3	10.1
--differences--		141.48	0.00	37.5	3.97	1.0	0.7	3.6	1.9	1.1

DIET SUMMARY

Nutrient (unit)	Total	Reqt	Nutrient (unit)	Total	Reqt
CP(%DM)	17.69	15.80*	K(%DM)	1.64	0.95*
UndegP(%CP)	32.82	25.37	Na(%DM)	0.42	0.17*
DegP(%CP)	67.18	57.04	Cl(%DM)	0.26	0.24*
AbsP(%DM)	11.98	10.93*	S(%DM)	0.22	0.19*
SolP(%CP)	29.73	28.52	Co(ppm)	0.32	0.09*
BndP(%CP)	3.34		Cu(ppm)	24.05	9.46*
NE1(Mcal/lb)	0.77	0.70*	Fe(ppm)	141.78	47.32*
NEm(Mcal/lb)	0.78		I(ppm)	0.91	0.57*
NEg(Mcal/lb)	0.51		Mn(ppm)	82.45	37.86*
TDN(%DM)	72.29	0.00	Se(ppm)	0.25	0.28*
ADF(%DM)	21.11	19.00*	Zn(ppm)	75.24	37.86*
NDF(%DM)	35.83	29.00	VitA(KIU/lb)	3.12	1.72*
EfNDF(%NDF)	74.95	80.00	VitD(KIU/lb)	0.78	0.43*
NFC(%DM)	32.53	0.00	VitE(IU/lb)	9.37	6.44*
Starch(%DM)	6.89	0.00	Cost(\$/lb)	0.02	
FermSt(%Starch)	50.00	0.00	Cost(\$/day)	2.62	
Lipid(%DM)	3.19	0.00	Cost(\$/lbDM)	0.05	
Animal(%Lipid)	25.93	0.00	AbsP(lb/d)	6.35	5.79*
Veg(%Lipid)	74.07	0.00	Se(mg/d)	5.92	6.83*
Inert(%Lipid)	0.00	0.00	VitA(KIU/d)	165.51	91.01*
Ash(%DM)	10.38	0.00	VitD(KIU/d)	41.38	22.75*
Ca(%DM)	1.05	0.61*	VitE(IU/d)	496.53	341.28*
P(%DM)	0.46	0.38*			
Mg(%DM)	0.30	0.24*			

RATIOS & RELATIONSHIPS

% Forage in diet DM	: 49.1%	DMI / Body Weight	: 3.9%
Intake NDF / Body Weight	: 1.4%	Forage NDF / Required NDF	: 82.7%
Cation-Anion (meq/100g DM)	: 53.1	Ca / P	: 2.27
\$Feed / 100lb Milk (Target)	:\$ 3.27	\$Feed / 100lb Milk (Actual)	:\$ 3.80
Actual Milk Prod (lbs/d)	: 63	Actual DMI (lbs/d)	: 48.5

DAIRY ONE



DHI Forage Testing Laboratory
730 Warren Road, Ithaca, NY 14850
800 496-3344 Fax: 607 257-1350

DATE SAMPLED	LAB RECEIVED	DATE PRINTED	STATE	CO	FARM
	03/08/00	03/09/00			

SHENANDOAH DAIRY
16560 68TH PL
LIVE OAK, FL 32060

COMMENTS:

1. NEW ENERGY EQUATIONS AS OF 3/18/99, FORAGE NEL IS BY VAN SOEST VARIABLE DISCOUNT METHOD.
2. HORSE ENERGIES CONFORM TO THE 1989 NRC NUTRIENT REQUIREMENTS OF HORSES.
3. PLEASE CHECK OUR CURRENT PRICE LIST AND ENCLOSE \$1.00 WITH YOUR NEXT SAMPLE TO COVER UNPAID CHARGES ON THIS SAMPLE.

SAMPLE DESCRIPTION	FARM	CODE	LAB SAMPLE
FR RYE FORAGE		268	2370230
ANALYSIS RESULTS			
COMPONENTS	AS SAMPLED BASIS	DRY MATTER BASIS	
% Moisture	81.4	*****	
% Dry Matter	18.6	*****	
% Crude Protein	4.2	22.7	
% Adjusted Crude Protein	4.2	22.7	
% Soluble Protein		46	
% Degradable Protein		70	
% Acid Detergent Fiber	5.8	31.3	
% Neutral Detergent Fiber	9.8	52.6	
% Lignin	.7	3.5	
% NSC	1.4	7.7	
% Starch	.4	2.1	
% Crude Fat	1.0	5.1	
% Ash	2.21	11.88	
% TDN	12	63	
NEL. (Mcal/LB)	.12	.63	
NEM. (Mcal/LB)	.12	.63	
NEG. (Mcal/LB)	.07	.36	
Relative Feed Value		114	
% Calcium	.07	.37	
% Phosphorus	.08	.44	
% Magnesium	.04	.21	
% Potassium	.54	2.91	
% Sulfur	.06	.34	
HTDN, %	11	59	
HDE, Mcal/lb	.22	1.19	

DAIRY ONE



DHI Forage Testing Laboratory
730 Warren Road, Ithaca, NY 14850
800 496-3344 Fax: 607 257-1350

DATE SAMPLED	LAB RECEIVED	DATE PRINTED	STATE	CO	FARM
/ /	03/05/99	03/08/99	58	00	0000

SHENANDOAH DAIRY
16560 68TH PLACE

LIVE OAKS
FLORIDA

32060

COMMENTS:

1. TDN DETERMINED BY OSU EQUATION. NET ENERGIES DETERMINED USING 1988 NRC DAIRY EQUATIONS.
2. HORSE ENERGIES CONFORM TO THE 1989 NRC NUTRIENT REQUIREMENTS OF HORSES.

SAMPLE DESCRIPTION	FARM CODE	LAB SAMPLE
FR RYE FORAGE	268	118305
ANALYSIS RESULTS		
COMPONENTS	AS SAMPLED BASIS	DRY MATTER BASIS
% MOISTURE	78.2	*****
% DRY MATTER	21.8	*****
% CRUDE PROTEIN	5.0	22.8
% ADJUSTED CRUDE PROTEIN	5.0	22.8
% SOLUBLE PROTEIN		41
% ACID DETERGENT FIBER	5.4	24.9
% NEUTRAL DETERGENT FIBER	9.2	42.4
% NSC	4.9	22.6
% TDN	15	70
NEL, (MCAL/LB)	0.16	0.75
NEM, (MCAL/LB)	0.17	0.77
NEG, (MCAL/LB)	0.11	0.49
% CALCIUM	0.14	0.62
% PHOSPHORUS	0.09	0.39
% MAGNESIUM	0.05	0.24
% POTASSIUM	0.61	2.79
% SODIUM	0.019	0.085
PPM IRON	20	91
PPM ZINC	7	31
PPM COPPER	1	6
PPM MANGANESE	8	35
PPM MOLYBDENUM	0.3	1.3
% SULFUR	0.06	0.27
RELATIVE FEED VALUE		152
HORSE DE (MCAL/LB)	0.29	1.33
HORSE TDN (%)	15	67