

How much forage is enough?

You've put a lot of effort into making high-quality forage. Now feed it.

By *Larry Chase*

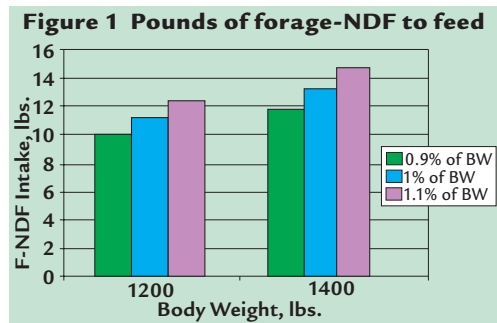
Forages are the foundation for nutritionally sound and economical rations. Forage quality and the quantity fed directly impact dry matter intake, milk production, milk composition and herd health.

No wonder, then, that nutritionists emphasize high-forage feeding programs that take advantage of your farm-produced forages. But how much forage constitutes a high-forage feeding program?

Calculating the percent of the total ration dry matter provided by forage is a common approach to answering that question. Assume that your calculation reveals that 60 percent of the total ration dry matter is from forage. Is this a high level of forage feeding? Your neighbor's calculation found that 40 percent of the total ration dry matter was from forage. Is this a "low" level of forage feeding? There needs to be a better way to quantify forage intake.

Neutral detergent fiber (NDF) content is the best method currently available. A good way to assess forage intake is to express it as forage-NDF (F-NDF) intake as a percent of the cow's bodyweight (BW). A reasonable range for F-NDF intake as a percent of BW is 0.9 to 1.1 percent.

Figure 1 shows the pounds of F-NDF intake needed for Holstein cows using this guideline. F-NDF intake will exceed these



guidelines when high-quality forages are fed. Cows grazing rotational pastures will often have F-NDF intakes greater than 1.1 percent of BW.

On the farm

This example shows the weakness of us-

ing a forage-to-grain ratio to assess whether you're feeding a high or low level of forage:

	Farm A	Farm B
Average weight of cows	1,400 lbs.	1,400 lbs.
Dry matter intake (DMI)	50 lbs.	50 lbs.
Total ration DM as forage	60%	40%
Average NDF content	40%	60%
DM from forage	30 lbs.	20 lbs.
Pounds of F-NDF	12 lbs.	12 lbs.

Due to differences in the NDF content of the forages available, both farms feed 12 pounds of F-NDF. This is 0.85 percent of bodyweight as F-NDF. ■

Practicing F-NDF

Use the following steps to assess forage feeding on your dairy:

1. Determine the bodyweights (BW) and dry matter intakes (DMI) of the various herd groups.
2. Routinely analyze forages for neutral detergent fiber (NDF) and lignin.
3. Develop rations with F-NDF intake 1 percent of BW (range is from 0.9 to 1.1 percent).
4. Select lower NDF forages for use with close-up and lactating cow rations.
5. Examine the lignin as a percent of the total NDF for your forages. You may want to select those with the lowest lignin (as a percent of NDF) for the close-up and early lactation cows. On most dairies, use this criterion if available forages have similar NDF levels.
6. As you feed more forage, small variations in quality will have a larger impact on milk production, making consistency in forage quality and feeding management critical.
7. Monitor silage dry matter and make ration adjustments to maintain a constant number of pounds of forage dry matter intake as you feed higher levels of silage.

FYI

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