

# RFV GETS AN OVERHAUL

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It looks like an improved relative feed value (RFV) will soon be available to hay buyers and sellers.

University of Wisconsin scientists want to change the way RFV is calculated so it more accurately reflects how forages will perform in livestock rations. They're proposing to add measurements of fiber digestibility, the lack of which is widely recognized as a shortcoming of the current RFV index.

The proposed new index, tentatively called digestible relative feed value (dRFV), was developed by Dan Undersander, extension forage specialist at the university, along with dairy scientists Dave Combs and Randy Shaver. If approved by testing labs, dairy nutritionists, growers and others in the forage industry dRFV across the country.

"Everything looks positive so far," says Undersander. "If people accept it, we'll likely go full steam ahead with it this spring."

The current RFV, implemented in 1978, is widely used for pricing hay and silage. But dairy producers know that hay lots with identical RFV scores don't always make the same amount of milk. And the index has come under increasing scrutiny as scientists have learned more about fiber digestibility.

A forage's energy content has a lot to do with the digestibility of its fiber, and forages similar in most other quality parameters can vary widely in fiber digestibility. The current RFV formula uses ADF to estimate energy content.

"But ADF only explains about 55% of the variation in the digestibility of a forage," says Undersander. "While that's good, and that was a big step forward for a lot of years, that's not good enough anymore."

Increasingly, NDF digestibility—rather than ADF—is being used to estimate energy. Some testing labs include NDF digestibility in their analyses when it's requested, and dairy nutritionists are using it when balancing rations.

NDF digestibility has been added to the University of Wisconsin's Milk

2000 spreadsheet for estimation the amount of milk produced per ton of forage. And it was used to calculate total digestible nutrients (TDN) in the new National Research council (NRC) feeding recommendations.

Adding NDF digestibility to RFV calculations was a logical step, according to Undersander. In developing dRFV, he and his colleagues did that.

"We just took the formulas from NRC and used them for this purpose," he says. "We wanted to use the concept of fiber digestibility to develop a better relative feed value estimate."

**The proposed dRFV** will predict both the energy content and potential intake of forages, just as RFV does. The difference: With dRFV, NDF digestibility will be included in both calculations. That's because digestibility impacts the energy content of a forage as well as the amount of it that animals will eat.

"We're keeping the same basic structure," says Undersander. "But instead of using formulas based in ADF and NDF, we're using newer formulas based on digestible fiber."

To avoid confusion and ensure broad acceptance of the switch to dRFV, the scientists kept the numbers and scale the same as with RFV. Dairy-quality hay will still score above 150, for example.

On average, alfalfa will get the same scores as it does now. Individual

samples, though, may differ by up to 50 points when evaluated by dRFV instead of RFV. But the results will more accurately reflect the forage's true value, says Undersander.

In general, he adds, grasses will likely get higher scores under dRFV. They tend to be high in NDF, so they score too low when all fiber is assumed to be equally digestible.

"When you actually measure the digestibility, some of the grasses are as good as some of the alfalfas," he reports.

Another plus: Changing RFV likely will broaden its applicability. Presently, RFV is appropriate only for alfalfa and cool-season grasses, though it often is used more widely. The new index probably can be used on corn silage and perhaps other types of forage, too.

**If the favorable** response continues this winter, the switch from RFV to dRFV will begin on a predetermined date. The needed NIR equations have already been released to forage testing labs.

Undersander thinks dRFV will become widely used within a short amount of time.

"I think people will start using it very quickly, and I think we'll see it used nationally," he says. "Traditionally, some nutritionists have been opposed to RFV. We're hoping that, if we're using these NRC equations, they'll accept the concept."



Proposed dRFV Index  
**dRFV = (TDN x Intake ÷ 16.8) + 39.2**

- ★ Where:
- ★ TDN 1x = dNFC + dCP + (dFA x 2.25) + dNDF - 7
- ★ = [(NFC x .98) + (CP x .93) + (FA x .97 x 2.25) + NDF x NDFD ÷ 100] - 7
- ★ CP = crude protein
- ★ NDF = neutral detergent fiber
- ★ NDFCP = crude protein remaining in NDF residue (average 3.8 for alfalfa/grasses)
- ★ FA = ether extract - 1
- ★ NFC = 100 - (CP + NDF + ether extract + ash - NDFCP)
- ★ NDFD = neutral detergent fiber digestibility = grams NDF digested in 48 hrs per gram NDF
- ★ Intake = [(NDFD - lab average NDFD) x 0.374] + base intake
- ★ Base intake = (0.0086 x 1,350) ÷ (NDF ÷ 100)

