

NE Iowa's Experience with Predictive Equation for Alfalfa Quality (PEAQ)

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Background

By 1996 PEAQ was recognized by Midwestern states as a reliable method to predict forage quality of 1st cut alfalfa. The 1st cut alfalfa crop is generally the largest harvest of the season but timing the 1st cut is challenged by weather conditions. In 2000, Larry Tranel, ISU Extension dairy field specialist, initiated a PEAQ program in a 20 county region of NE Iowa. The program purpose is: Promote the PEAQ method amongst dairy producers and other hay producers/consumers, and assist farmers with timing 1st alfalfa harvest based on forage quality goals. Since 2004, Butler County Extension assumed program management.

Collecting and Reporting PEAQ Results

Volunteers, including county extension directors, extension field specialists, farmers, industry representatives and FFA students have collaborated with this PEAQ program in several NE Iowa counties. Fields selected are healthy, 1 to 2 year old (after seeding year) fields with above average growth. Beginning in early May, volunteers and ISU Extension staff evaluate alfalfa fields using PEAQ method every Monday and Thursday morning throughout May or until fields are harvested, whichever comes first.

The information collected includes height, plant maturity stage (vegetative, bud, flower), and estimated Relative Feed Value (RFV) value. These numbers are tabulated by county, inserted in an updated news release by noon of the day it's collected. The information is sent by e-mail to radio stations, local and regional newspapers, farmers, extension offices and industry representatives (In Butler County, the field data is provided immediately to the participating farmer). These reports are available on the state extension and several county extension web sites. The twice-weekly progress reports, when taken into consideration with weather forecasts, help farmers target 1st cut harvest date.

Discussion

In 2005, a late frost set back many alfalfa fields in northern Iowa, making the PEAQ method unreliable because of uneven growth. The Butler County field was not damaged by cold temperatures and weekly evaluation continued with this field. Wet conditions delayed 1st cut harvest. The estimated in-field RFV was 149. Subtract an additional 15 RFV points for harvest loss, the harvested

RFV for this alfalfa crop was 134, approximately 16 points below the suggested 150 RFV for lactating dairy cows.

In 2006, two sites were evaluated in Butler County and the numbers provided are for site one. The estimated harvest RFV for this field was 160 RFV, an excellent goal for dairy forage. Site two was harvested 7 days later. The estimated harvest RFV was 158.

In 2007, the weather forecast predicted a prolonged wet period. The farmer decided to cut early. Estimated harvest RFV was 175. Weather conditions were wet for the next three weeks. This farmer made 5 cuttings from this field.

Three Year Comparison in Butler County

Date	RFV	Maturity Stage	Height (inches)
05/02/05	237	vegetative	19"
05/05/05	237	vegetative	19"
05/09/05	204	vegetative	21"
05/12/05	190	Bud	22"
05/16/05	189	Bud	23"
05/19/05	184	Bud	24"
05/23/05	168	Bud	27"
05/26/05	149	Bud	31"
05/30/05	harvested		
05/04/06	215	vegetative	19"
05/08/06	195	vegetative	23"
05/11/06	185	vegetative	25"
05/15/06	182	vegetative	26"
05/18/06	175	vegetative	27"
<u>(cut same day 5/18/06)</u>			
05/07/07	250	vegetative	14"
05/10/07	224	vegetative	18"
05/14/07	197	vegetative	22"
05/17/07	Harvested		

Summary

RFV values will vary year by year and field to field. Variability is dependant on many factors: alfalfa variety, soil type, fertility, soil moisture, temperature, previous harvest intervals, and fall harvest activities. It is therefore important for producers to measure their own crop.

Growth trends have been consistent in NE Iowa. Fields in the SW part of the region, counties near Highway 20, mature sooner than fields at the Minnesota border. Traditionally, NE Iowa farmers harvested 1st cut alfalfa near the end of May, after planting corn and soybeans. Because each point of RFV is worth approximately \$1 to dairy and livestock rations by way of reducing feed costs and improving intake, prompt cutting is recognized as an important economic practice. We now observe more farmers harvesting the 1st cut alfalfa earlier in May when weather conditions permit.