

UC Intermountain Alfalfa Quality Prediction Stick

Introduction

The University of California Intermountain Alfalfa Quality Prediction Stick was developed to make it possible for growers to evaluate the forage quality of a standing alfalfa crop. This stick is a rapid, reliable, and reasonably accurate method to predict alfalfa forage quality prior to harvest in the Intermountain West. This easy-to-use management tool can be stored in the back of a pickup and doubles as a sturdy walking stick.

This prediction stick is based upon the PEAQ method (Prediction Equations for Alfalfa Quality), which uses plant height and stage of development to predict forage quality. This method has been validated by research in several Midwest states and in California. More than 350 individual samples collected from growers' fields in California and Idaho were used to develop this stick. This research showed that of all the alfalfa plant characteristics which may be observed in the field, plant height and stage of maturity were the most powerful predictors of forage quality.

Purpose of The Stick

The quality of alfalfa hay has a large effect on economic return and is affected greatly by cutting date (plant maturity and growth at harvest). This stick will enable growers to judge the quality of a

standing crop before harvest, aiding in the economic analysis of cutting schedules.

4 Easy Steps

The quality prediction stick is very easy to use and provides a rapid prediction of the forage quality of standing alfalfa. Steps are given in the box below. In most cases, a grower can predict forage quality

Steps for using the UC Intermountain Quality Prediction Stick:

- STEP 1. Select an average 2 foot square area to sample. The area should be representative of the field.**
- STEP 2. Determine the growth stage of the most mature stem (Vegetative, Bud, or Bloom).**
- STEP 3. Find The single tallest stem. Use the correct side of the stick (Vegetative, Bud, or Bloom).**
- STEP 4. Repeat steps 1-3 in at least 5 representative areas and average the results.**

in a field in 5 minutes or less with just the stick and a calculator. It is important to adhere to these steps carefully, since these are part of the scientific protocol. The resulting value is Acid Detergent Fiber (ADF), which can be used to calculate TDN values, commonly used to market alfalfa hay in

Western States. A laminated conversion chart is conveniently attached to the stick, for conversion to TDN.

Accuracy and Limitations

The Quality Prediction Stick is **NOT** intended to replace standard laboratory analysis for marketing or feeding purposes. It is not as accurate as standard lab analyses, but is more accurate than visual field estimations. The stick estimates the forage quality of the standing crop and does not account for harvest losses which occur during raking and baling.

Where and When can the Stick be used?

This stick was designed to predict the forage quality in alfalfa growing regions of the Intermountain West. In these areas, 2-4 cuttings are common. It is not likely that this stick will perform well in the Central Valley or Low Desert of California, or in areas that differ significantly from the Intermountain areas. The stick was developed for use in the spring and midseason (first and second cuts), since these are the cuttings of greatest interest for harvest management.

A Decision Tool

The UC Alfalfa Quality Prediction Stick is intended to be a tool to assist growers with harvest decisions. It can help growers determine when to harvest specific fields. The quality demands of the market may change from year to year and from location to location, but growers usually know the quality demands of their market. When alfalfa hay is predicted to be 'dairy quality' hay, growers may want to cut as soon as possible. If predicted to be significantly better than 'dairy quality', growers may

choose to wait a few days and harvest another field. If the hay is below dairy-quality hay, growers can postpone harvest to maximize yield and target another market where quality is not as important (e.g. horse, dry-cow or beef). However, quality is not the only factor: quality should be considered along with the potential yield, and stand persistence when choosing a cutting schedule.

Costs

This stick is made available at minimal cost as a contribution of UC Cooperative Extension. For orders up to 10, the price is only \$10.00 plus \$2.00 shipping and handling. For orders over 10, the price is only \$7.00 plus actual shipping charges.

Instructions

Simply send a check ('Regents, University of California') for the exact amount. Please indicate the number of sticks desired, and where the sticks should be mailed. We'll send them to you as soon as possible after receiving the check. For stick orders or for further information, please contact:

Steve Orloff, UC Farm Advisor,
1655 S. Main Street, Yreka, CA 96097
Phone: 530-842-2711.
Email: sborloff@ucdavis.edu



The UC Alfalfa Quality Prediction Stick reads in ADF, providing a rapid method of predicting forage quality in the field.

Using 'The Stick' as a Decision-Making Tool

Growers may use this stick in a variety of ways. For example, if the stick predicts the crop to be:

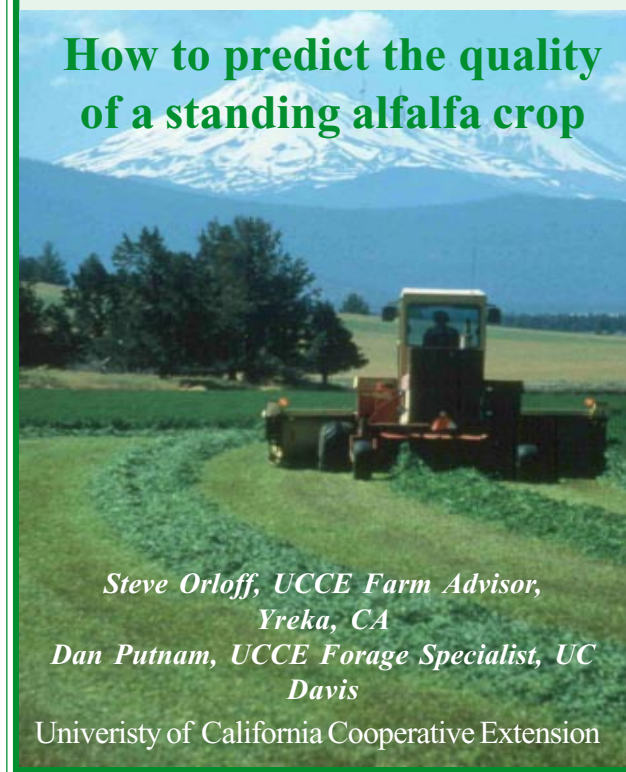
'Dairy quality' hay-- The grower may want to harvest as soon as possible to meet that market demand.

Much superior to 'dairy quality' hay-- The grower can delay harvest a few days to improve yields.

Below Dairy Quality Hay-- The grower could postpone harvest to maximize yield and target another market, e.g. horse, dry cow or stock-hay market.

UC Intermountain Alfalfa Quality Prediction Stick

**How to predict the quality
of a standing alfalfa crop**



*Steve Orloff, UCCE Farm Advisor,
Yreka, CA*

*Dan Putnam, UCCE Forage Specialist, UC
Davis*

University of California Cooperative Extension