# *Estimating Alfalfa RFV in the Field Using PEAQ*

**I**ncreasing alfalfa **R**elative **F**eed **V**alue (**RFV**) can add tremendous value to the farm enterprise through reductions in purchased feed and increased dry matter intake. Determining when to cut first crop alfalfa is often difficult due to variation of quality relative to flowering stage. University of Wisconsin agronomists developed the PEAQ method for a valid indication of RFV for first cutting.

Each point of RFV is worth about $1 per point typically on the alfalfa market and in dairy and livestock rations. It's important to realize as first crop alfalfa can rapidly drop 3-5 points of RFV per day. Alfalfa quality should be 150 RFV for milking dairy herds; 120-130 RFV for heifers, stocker cattle and lactating beef cattle.

The PEAQ procedure estimates the RFV of the standing crop. Under the best conditions, 15% of the forage dry matter will be lost at harvest (typically 15-25 RFV units). Therefore, it is necessary to cut at 165 to 170 RFV to end up with harvested forage at 150 RFV. If it takes a week to harvest, consider starting even earlier. Also note that grassy fields will reach the stated forage quality earlier than pure alfalfa. Alfalfa on lighter soils and southern slopes will also reach maturity faster. This procedure is most accurate for good stands of pure alfalfa with healthy growth.

## *How to PEAQ Your Alfalfa Harvest*

**P**redictive **E**quations for **A**lfalfa **Q**uality (**PEAQ**) is a method to predict the forage quality of standing alfalfa. The two equations predict ADF and NDF when the height of the tallest stem is measured and the maturity of the most advanced plant is determined. The equations have been validated in the Midwest and also in other environments from California to New York. It is a reliable indicator to predict the optimum harvest time for alfalfa. This has proved to be especially valuable for first-cutting.

**Step 1:** Choose a representative 2-square-foot area in the field.

**Step 2:** Determine the most mature stem in the 2-square foot sampling area using the criteria shown in the table at the right.

**Step 3:** Measure the most mature stem in the 2-square-foot area. Measure it from the soil surface (next to plant crown) to the tip of the stem (NOT to the tip of the highest leaf blade). Straighten the stem for an accurate measure of its length. The tallest stem may not be the most mature stem.

**Step 4:** Based on the most mature stem and length of the tallest stem, use the chart at the right to determine estimated RFV content of the standing forage.

**Step 5:** Repeat steps 1 to 4 in five representative areas across the field. Sample more times for fields larger than 30 acres.

| | --- Stage of Most Mature Stem----- | | |
|---|---|---|---|
| **Height of Tallest Stem (from soil surface to stem tip)** | **Late Vegetative** ( >12" ) No buds visible | **Bud Stage** 1 or more nodes with visible buds. No flowers visible. | **Flower Stage** 1 or more nodes with open flower(s) |
| **- Inches -** | **RFV** | **RFV** | **RFV** |
| 16 | 237 | 225 | 210 |
| 17 | 230 | 218 | 204 |
| 18 | 224 | 212 | 198 |
| 19 | 217 | 207 | 193 |
| 20 | 211 | 201 | 188 |
| 21 | 205 | 196 | 183 |
| 22 | 200 | 190 | 178 |
| 23 | 195 | 185 | 174 |
| 24 | 190 | 181 | 170 |
| 25 | 185 | 176 | 166 |
| 26 | 180 | 172 | 162 |
| 27 | 175 | 168 | 158 |
| 28 | 171 | 164 | 154 |
| 29 | 167 | 160 | 151 |
| 30 | 163 | 156 | 147 |
| 31 | 159 | 152 | 144 |
| 32 | 155 | 149 | 140 |
| 33 | 152 | 145 | 137 |
| 34 | 148 | 142 | 136 |
| 35 | 145 | 139 | 131 |
| 36 | 142 | 136 | 128 |
| 37 | 138 | 133 | 126 |
| 38 | 135 | 130 | 123 |
| 39 | 132 | 127 | 121 |
| 40 | 129 | 124 | 118 |
| 41 | 127 | 122 | 115 |
| 42 | 124 | 119 | 113 |

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