



General Maturity Groups for Cotton Varieties

Three maturity groupings are often used to classify cotton varieties, consisting of: 1) short season or more determinate plants, 2) medium season varieties, and 3) long or full season varieties which are more indeterminate in nature. Classification of cotton varieties into one of these three categories is not necessarily straightforward in all cases. In fact, it easily can become a process of “splitting hairs” when making maturity grouping designations for cotton varieties. Nevertheless, maturity designations are commonly assigned to most commercially available varieties, which can effect selection and management.

The attached figure (Figure 1) illustrates my attempt at separating a set of representative varieties among the three maturity groups along a maturity continuum ranging from most determinate (short season) on the left to most indeterminate (full season) varieties on the right. This figure was developed based upon plant growth data collected from our agronomic research program conducted at numerous locations across the state. Maturity classification was based primarily upon crop progression toward cut-out, considering only cases with a strong boll load where no plant stresses had limited growth. It is important to note from Figure 1 that the total range from short to full season varieties only involves a span of about three weeks (600 heat units, HU 86/55° F), considering a common/optimum planting date, adequate boll load, and no growth-limiting stresses. Placement of varieties for this type of comparison are general in nature and not absolute.

Management Implications

There are several implications which one might consider in reviewing this type of information for variety selection and management.

- All varieties can realize strong yield potentials with an early/optimum planting (soil temperatures of 60° F+ for several consecutive days at 8:00 A.M. and a favorable five-day forecast). However, it is very important that full

season varieties be planted early for full yield potential. One of the common characteristics associated with a full season variety is its drop in yield potential with a delay in planting and an increase in its vegetative tendencies. Full season varieties should be planted before 700 HU have been accumulated since January 1 (HU/Jan. 1). Medium maturity varieties generally do best if planted before 800 HU/Jan. 1. Short season varieties have the greatest flexibility in planting and can be planted up to about 1,000 HU/Jan. 1 before suffering losses in yield potentials.

- If one wants to maintain an option of producing a top-crop (development of a second fruiting cycle following cut-out), a full season variety is more appropriate for this type of strategy. With increasing determinance, cotton plants have less of a top-crop potential.
- More determinate varieties are more sensitive to stresses, particularly water stress.

2/2001

AZ1214

THE UNIVERSITY OF ARIZONA
COLLEGE OF AGRICULTURE AND LIFE SCIENCES
TUCSON, ARIZONA 85721

Jeffrey C. Silvertooth
Cotton Extension Agronomist

This information has been reviewed by university faculty.

ag.arizona.edu/pubs/crops/az1214.pdf

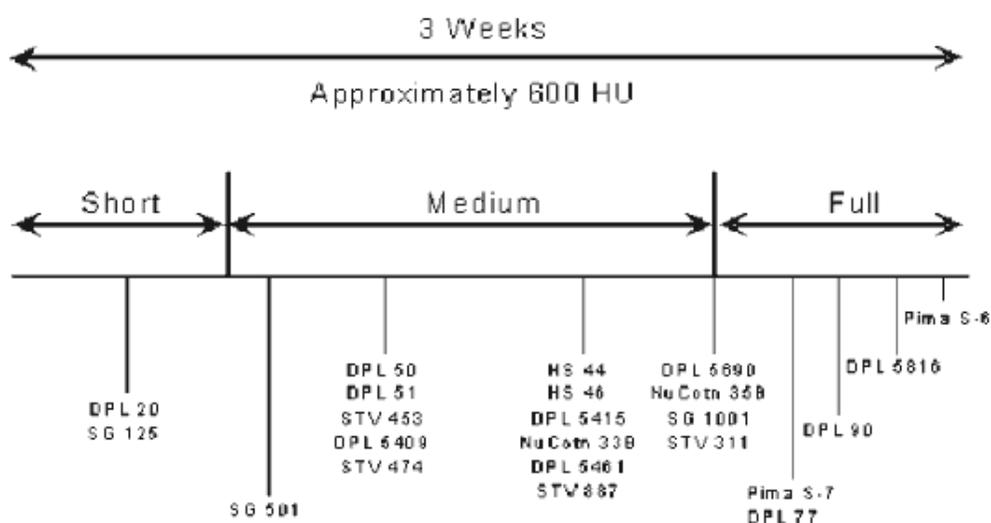


Figure 1. General ranking of a selected/representative set of varieties with regard to maturity group.

Any products, services, or organizations that are mentioned, shown, or indirectly implied in this publication do not imply endorsement by The University of Arizona.