AGRONOMIC Spotlight

Technology Development by MONSANTO

Yield Components of Soybean during Maturity R7-R8

Vegetative growth stages in soybean are numbered according to how many fully-developed trifoliate leaves are present. The reproductive stages begin at flowering (R1-R2) and include pod development (R3-R4), seed development (R5-R6), and plant maturation (R7-R8). Growth stages can overlap. Determine the growth stage of a crop when 50% or more of the plants are in or beyond that growth stage in question. This Agronomic Spotlight is the final part of four in a series that focuses on yield components of soybean during the reproductive growth stages.

◄Figure 1. Soybean plant during the Beginning Maturity (R7) growth stage. Picture courtesy of Palle Pedersen, Iowa State University.

Beginning Maturity (R7)

Beginning maturity (R7) signifies that one pod on the main stem has achieved the brown or tan mature color (Figure 1). Eventually the seed and pods appear yellow and all green color is lost, which denotes the peak of dry matter accumulation in individual seeds. When physical maturity is achieved, seeds contain about 60% moisture. Stress during the beginning and full maturity growth stages does not affect yield potential unless one or more of the following occurs: pods drop to the ground, seeds are shattered from the pods, plants lodge reducing light interception, or losses occur during harvest. Finally, when the soybean plants get to beginning maturity they are also safe from a killing frost.

◄Figure 2. Soybean plant during the Full Maturity (R8) growth stage. Picture courtesy of Palle Pedersen, Iowa State University.

Full Maturity (R8)

The soybean crop can be called fully mature (R8) when 95% of the pods have achieved their mature color. Typically, 5 to 10 days of good drying weather after R8 is all that is needed for the soybeans to reach harvest moisture of less than 15%. This is a guideline; the rate of moisture loss can vary based on conditions. For example, warm, dry weather will lower the soybean moisture faster and wet weather will obviously slow moisture loss down. For long-term storage, soybeans should be stored at 13% moisture or less. Prior to harvest the final plant population should be assessed.

Sources: McWilliams, D.A., et al. 1999. Soybean Growth and Management Quick Guide. North Dakota State University Extension. Publication Number A1174, June 1999. http://www.ag.ndsu.edu (verified 7/14/10); Naeve, S. 2005. Growth and Development (Soybean). University of Minnesota Extension. http://www.soybeans.umn.edu (verified 7/14/10); Pedersen, P. 2007. Soybean Growth and Development. Department of Agronomy. Iowa State University Extension. http://extension.agron.iastate.edu (verified 7/14/10).