

Part 1

Have you ever wondered what happens if you planted different soybean varieties of different maturity groups (MG) on the same planting date?

Results from a study at the North Central Kansas Experiment Field at Belleville provide answers to that question. The study site was a Crete silt loam soil. Eighteen soybean varieties representing late MG I, early MG II, late MG II, early MG III, mid MG III, and early MG IV were planted in mid-May over three years. (Remember, the lower the MG number the earlier the maturity.) All varieties were no-till planted at 10 seeds/ft into grain sorghum stubble.

Interestingly, the MG I, early MG II, and early MG IV varieties yielded well below the late MG II, early MG III, and mid MG III varieties. The average yield for the late MG II, early MG III and mid MG III varieties was about 44 bushels per acre, while the average yield for the late MG I, early MG II, and early MG IV varieties was about 35 bushels per acre.

There was a 34 day difference in maturity between the MG I varieties and the early MG IVs. The late MG I matured in 106 days, while the early MG IV matured in 140 days. The early MG II matured in 114 days, the late MG II in 122 days, the early MG III in 128 days, and the mid MG IIIs matured in 132 days.

With the maturity differences among the maturity groups there were differences in total seasonal water use. The early maturity groups used less total seasonal water and water use increased with later maturity groups. For example, the late MG I used 13.5 inches, early MG II used 14.0 inches, late MG II used 14.8 inches, early MG III used 15.3 inches, mid MG III used 15.6 inches, and the early MG IV used 16.2 inches during the growing season.

What's the bottom line?

It is important that producers use varieties from the appropriate maturity group for their area, otherwise the environment is not fully utilized and yields are reduced. Based on this research for north central Kansas and a mid May planting date, soybean varieties ranging from late MG II to mid MG III (a 10 day maturity difference) are best adapted. Varieties of early maturity groups are generally shorter, producing fewer nodes where pods are attached, and they don't use as much water, but they have lower yields. Conversely, varieties of late maturity groups are generally taller and use more water, but that doesn't necessarily result in higher yields because they are filling-grain when it is cooler and there is an increased chance of frost.

For details about this research see:

Field Research 2002. P 83-86. K-State Research & Extension Report of Progress 893.

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