There's still time for farmers to ensure optimal soybean yields

Most of the soybean fields have been planted in the area. Planting dates have been more variable this year because of rain events. Parts of the county have been delayed with rain, which delayed planting, and other parts have been dry and need more rain. As a result, some fields were planted at the end of April and others in the past few weeks.

Farmers will check their soybean stands early in the season to make sure they have an adequate stand for optimal yields. They could still replant. However, replanting is costly because of lower yields from later plantings and additional input costs, such as seed.

Soybean stands can be greatly reduced before replanting is necessary. Farmers generally try to get 150,000 plants per acre. However, Ohio State University has shown that soybeans planted in May can still have optimal yields at populations as low as 100,000.

Soybeans have the ability to compensate for low populations by increasing the number of branches, nodes, and pods per plant. However, low population plants may be more difficult to harvest because lower branches will be closer to the ground requiring farmers to set their combine cutting bar lower than normal.

When farmers evaluate their fields, they will identify the cause of stand loss to make management corrections for future plantings. This year, stand losses are generally from diseases, insects, herbicides and flooding. The following is a brief description of these factors that can cause stand loss:

- Diseases. Early diseases are generally caused by watermold fungi. Soybeans are most susceptible when two or more inches of rain falls between the day of planting and seedling emergence, about a 14-day period.
- Watermold fungi can cause severe stand loss by killing germinating seeds, emerging seedlings, and young seedlings. Rotted seed and dark, sunken lesions on stems and cotyledons are symptoms of watermold damage. The use of fungicide seed treatments is the only defense against these early fungi attacks.
- Insects. Early-season pests of soybean can be above or below ground. Below-ground pests include seedcorn maggot, wireworms, and white grubs. These can reduce stand by feeding on seeds and roots; there are no rescue insecticides for these insects. Generally, they are not a problem in this area.
- Aboveground early season pests of soybean include bean leaf beetle, cutworms, and slugs, which feed on stems or foliage. If the main stem is cut or nibbled to nothing above the cotyledons, the plants will usually regrow. If plants are cut off below the cotyledons, they will not recover.

Soybeans are very tolerant to foliar feeding above the cotyledon. Before flowering, soybeans can later compensate for as much as 30 to 40 percent defoliation. In cases where feeding is more extreme, a number of foliar insecticides are labeled for soybean pests. There are fewer, but some, options for controlling slugs.

- Herbicides. A number of residual soybean herbicides can cause minor plant stunting. Plants generally recover from the stunting with no yield reduction. Historically, products that contain chlorimuron are the most likely herbicides to cause stunting, especially under high soil moisture conditions.

Products that contain flumioxazin (Valor etc.) and sulfentrazone (Authority etc.) have the potential to cause severe early injury. Injury may be more common because of widespread use of these products under a broad range of tillage and weather conditions.

Injury symptoms can consist of plant stunting, leaf malformation, and leaf necrosis, but usually not stand reduction. Injury from these products most often occurs in conventional-tilled fields where the herbicide was applied soon after planting.

Injury has been much less frequent under no-till conditions since the products are generally applied a week or more before planting. An herbicide mix with these products and chlorimuron can result in higher risk of injury compared with other combinations.

Even with injury, soybeans generally outgrow the damage. However, canopy closure (term for when plant growth fills in the space between rows) can be delayed compared with uninjured soybeans. Soybeans have a better chance to outcompete weeds and conserve moisture with earlier canopy closure.

- Flooding. Flood injury occurs when plants are submerged for more than 48 hours. Places in the field where ponding occurs can cause carbon dioxide to build up in the soil and kill soybeans. Replant is an option if large areas of a field have been damaged by flooding.

Overall, soybean farmers in the area have got a good start on this year's crop. As long as there is an adequate stand, soybeans can adjust and adapt to many pest and environmental stresses in the first half of the growing season.

August is generally the critical month that will determine whether a farmer has a large or small soybean crop. Any stresses during this time may greatly reduce yields. For most fields, timely August rains will determine the final yield for soybeans.

Lentz is extension educator for agriculture and natural resources for Ohio State University Extension Service in Hancock County. He can be reached at 419-422-3851 or via email at lentz.38@osu.edu.

Lentz can be heard with Vann Wickerham on weekdays at 6:35 a.m. on WPIN, at 5:43 a.m. on WKXX-FM, and at 5:29 a.m. at 106.3 The Fox.