1. Outlook for late-planted soybeans

Because of the widespread rains and flooding in May and June, many acres of soybeans were planted later than normal this year, especially in east central, southeast, and southcentral Kansas. What is the outlook for these soybeans? There have been three general areas of concern.

A. Will late-planted soybeans have low yields?

This depends on a lot of factors. In general, the beans at greatest risk of lower-than-normal yields would be late Group IV or Group V varieties planted in late June or July in southeast Kansas, and irrigated beans. Yields of those soybeans will almost surely be limited by the shorter growing season and seed fill period available to them. Unfavorable environmental conditions would drive yields even lower, but even with favorable growing conditions, yields will likely be below normal.

A late Group IV or Group V variety that is planted in July in Kansas will not get as tall as usual. Its maturity will speed up. It will not flower or fill seeds as long as normal, and will have fewer nodes. Seed fill will occur later than normal, in October.

Group III and early Group IV beans that were planted late will also have a somewhat shorter-than-normal growing season and seed fill period, but this is not likely to be the primary factor in yield potential for these beans. Temperatures and rainfall from mid-August through mid-September will be more important. If growing conditions are good, yields may not be much, if any, lower than normal.

B. Will the late-planted soybeans be likely to get hurt by a fall freeze?
Soybeans are photoperiod sensitive, not heat sensitive. Therefore, late planting does not delay maturity of soybeans to the extent that it does with corn, grain sorghum, and other crops. There is basically a 3:1 ratio, so that a three-week delay in planting delays maturity by one week, on the average. It is unlikely that late planting will make soybeans in east central, southeast, and southcentral Kansas so late that they would be susceptible to a fall freeze that occurs at the normal time.

C. Will soybean rust be likely to occur on these beans?

Soybean rust is in Oklahoma now, and if it comes into Kansas in August or September, it is likely to catch late-planted beans in the flowering or early grain fill stage of development. That would reduce yields if the fields are not sprayed with a fungicide. If the weather in Kansas stays hot and dry, that will likely keep soybean rust from becoming a problem on these fields. Of course, the hot and dry weather itself will reduce yield potential.

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2. Injury to glyphosate-tolerant corn from off-label applications of glyphosate

Some areas of Kansas were very wet early in the crop growth cycle of corn, which delayed the intended postemerge application of glyphosate in some cases. The following scenario describes a case in which Roundup Ready corn was sprayed about 7-10 days prior to tasseling, well past the labeled limits. (Sometimes one must choose between being off-label or having nothing to harvest because of weed pressure.) The producer did get good weed control. He called because the ears were not filling well and looked unusual (see photo below).

The following is an excerpt from page 34 of “2007 Chemical Weed Control for Field Crops, Pastures, Rangeland, and Noncropland,” SRP-977: http://www.oznet.ksu.edu/library/crpsl2/srp977.pdf

“Most glyphosate products may be applied postemerge to corn with the Roundup-Ready/GT gene only. However, RT Master II and Touchdown CT are not labeled for in-crop use. Apply from emergence through the V-8 state (eight leaf collars visible) or until corn height reaches 30 inches (freestanding), whichever comes first. For corn with the RR2 event, glyphosate may be applied with drop nozzles to corn 30 to 48 inches tall. Some tank mixtures limit application to corn 5 or 11 inches tall. Single in-crop applications of glyphosate must not exceed 1 qt/A. Sequential in-crop applications of 2 qt/A per growing season”
The field in question had the RR2 event in both hybrids but was sprayed without drop nozzles, and was probably past the 48” tall limit.

As you can see in the photo, the ears from plants that didn’t get sprayed – which were in areas where it was still too wet to drive – look fairly normal. Where the crop was sprayed, you can see that pollination was incomplete. Notice that one row disappears completely. Yield losses will be substantial. Glyphosate is known to cause flower abortion and pollen sterilization in Roundup-Ready soybeans, and will do the same (in addition to causing small boll abortion) in Roundup-Ready cotton that is not a Roundup-Ready “flex” variety. Up to 50% yield reductions have occurred in cotton when glyphosate was applied past label recommendations. The same kind of response can be found in corn that is entering the reproductive stages.

Glyphosate tends to move to the actively growing/developing plant parts, and the flowering plant parts appear to be a strong sink for the chemical. For example, cotton pollen treated too late with glyphosate will be sterile, misshapen and/or will not function properly, and the stigma (female) part of the flower is also affected negatively.

Since this field visit, I’ve seen ears with the same type of symptoms from another field in which part of the corn was planted on one date, and the rest of the field was planted two weeks later. The early-planted corn was showing injury symptoms and the later-planted was not. This makes sense since the later-planted corn was not as far along developmentally as the early half of the field.
3. Volunteer wheat and Hessian fly control

There is likely to be a significant problem with volunteer wheat this year in Kansas, especially where wheat was abandoned or hailed out. If not completely killed in a timely manner within a mile of planted wheat, volunteer wheat can lead to many problems, such as Hessian fly, wheat curl mite (and wheat streak mosaic), greenbugs and bird cherry oat aphids (and barley yellow dwarf), and Russian wheat aphid.

The wheat curl mite, greenbugs, and aphids can all live through the summer on volunteer wheat, using volunteer as a “green bridge” to survive until planted wheat has emerged. Killing volunteer two weeks before planting wheat disrupts the summer survival of these insect pests, thus reducing the potential for a fall infestation on planted wheat.

The Hessian fly life cycle is different. Hessian fly pupae (or “flaxseed”) live through the summer on stubble and lower crowns of the previous year’s crop. They do not need the living, green tissue of volunteer wheat to survive the summer. The Hessian fly adults
emerge from the pupal stage anytime from late-August through mid-October or later, depending on weather conditions. After emerging, the adult flies immediately start searching for living, green wheat plants to lay their eggs on. That’s when it is important to deny them a living host. If volunteer (or planted wheat) is present when the Hessian fly adults emerge, the eggs will be laid and the Hessian fly will be established in that immediate area for the rest of the year.

Volunteer wheat throughout the region must be completely dead before the Hessian fly eggs hatch in order to prevent the population from surviving and spawning a new generation in the fall. If volunteer wheat is sprayed after the Hessian fly larvae have hatched, they may have enough time to develop to the pupal stage before the plants actually die. The only way to keep the pupae from surviving at that point is to work the volunteer at least 3 to 4 inches deep.

Eggs that are laid on volunteer wheat in the fall will often have enough warm weather to complete a generation, and may infest planted wheat later in the fall. It’s not uncommon for the Hessian fly to have multiple generations in the fall in Kansas.

Producers should make every effort to ensure that volunteer wheat is controlled throughout their area as soon as possible. Hessian fly, and the other pests mentioned above, can cause significant yield losses. Repeated herbicide applications may be needed. Burning the previous year’s straw and stubble will provide partial control of Hessian fly, but many flaxseed are present deep in the crown tissue below the soil surface and are not controlled by fire. Tilling the stubble so that all of the previous year’s residue is completely buried at least 3 to 4 inches deep will control the Hessian fly, but this practice is not desirable from the standpoint of soil erosion. If all volunteer is not controlled within a mile of where wheat will be planted, it’s best to plant after the Hessian fly-free date, and as late as feasible.

For more information on volunteer wheat control, see “Be a Good Neighbor: Control Your Volunteer Wheat,” MF-1004: 

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4. Sorghum headworms

“Sorghum headworm” is a generalized term that refers to either corn earworm, fall armyworm, or true armyworm. Any of these species, alone or in combination, can infest the heads of grain sorghum about this time of year. Infestations have already been reported in some areas of Kansas this year.

Sorghum may be vulnerable to infestations from bloom until milk stage. Infestations need to be detected early, while larvae are still small. The best way to detect early infestations
is to vigorously shake the sorghum head into a small white container and count the
dislodged larvae. Small larvae are sometimes difficult to detect even using this method as
there may be florets and pollen also dislodged and the very small larvae may be well
camouflaged in the bottom of the container. Generally, consider a yield loss of 5% per
larva per head.

Insecticides that can be used to control sorghum headworms include Beta-cyfluthrin
(Baythroid XL), Chlorpyrifos (numerous products), Deltamethrin (Delta Gold), Gamma-
cyhalothrin (Proaxis), Lambda-cyhalothrin (numerous products), Methomyl (Lannate),
Spinosad (Tracer), and Zeta-cypermethrin (Mustang MAX). Always read and follow all
label directions when using these or other insecticide products.

For more complete information, see “Sorghum Insect Management 2007,” MF-742:
http://www.oznet.ksu.edu/library/entml2/MF742.PDF

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These e-Updates are a regular weekly item from K-State Extension Agronomy and Steve
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