

Slug damage to 2021 soybeans with early, mid and late terminated cover crops

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Methods

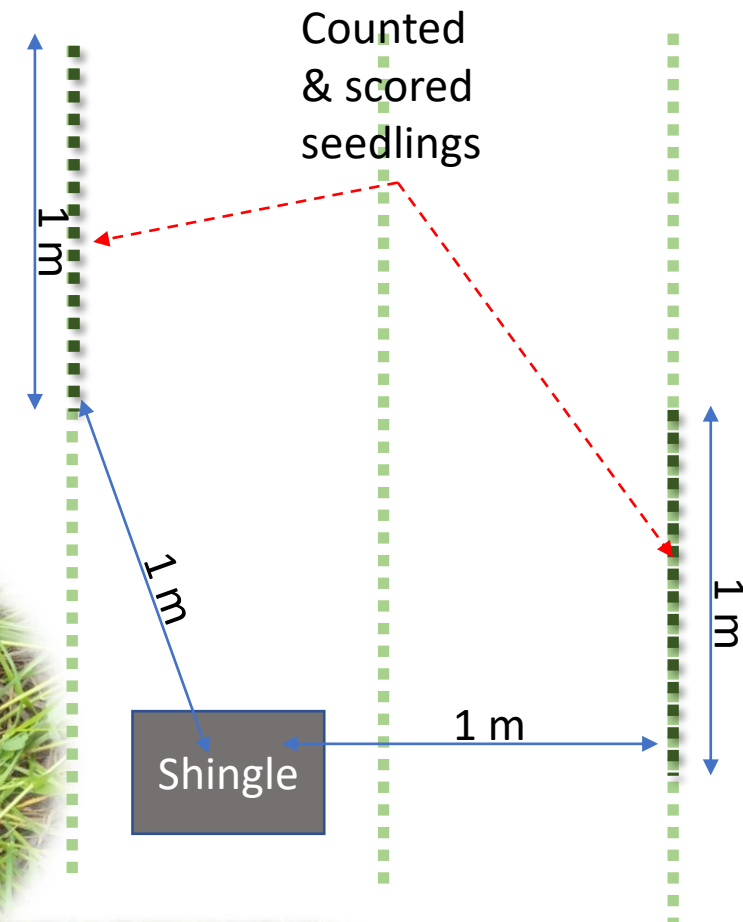
- Silt loam over silty clay loam, 2 to 5% slope, slowly drained soil.
- Previous crops (2020) were corn or soybean.
- Cover crop subplots were no cover, ryegrass or ryegrass-radish-cr. clover mix drilled into V5 corn or air-seeded into senescing soybean.
- Cover crops sprayed with Glyphosate on April 7 (early), April 26 (mid) and May 13 (late)
- On May 6 soybeans planted in all corn stubble plots and corn planted in soybean stubble plots.
- Starting 10 days before soybean planting, 28 cm x 30 cm shingles were pinned down in each plot and slugs counted underneath every few days.
- Emerging soybean and corn seedlings in two 1-m sections of row adjacent to shingle were scored for slug damage on 5 dates.
- Soybean stand counts were done on June 3.

Methods

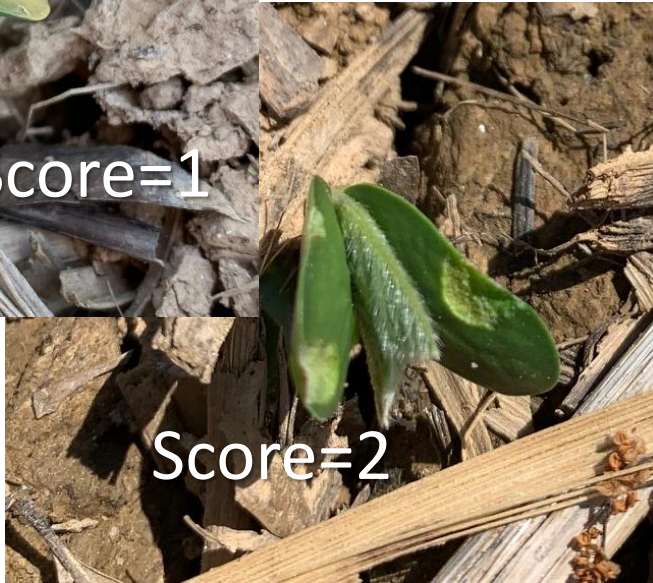
1. Count slugs under shingles midday approximately -10, -5, -1, +1, +3, +5, +7, +9, +12, +15 days relative to soybean planting (06 May)
2. After plants emerge, also count and score damage on soybean seedlings in 2 m sections of row at 1 m away from the shingle. See diagram at right.
3. Take soil temperature (IR of soil surface) and soil moisture (capacitance) readings at time of counting.

Damage scores for all visible and counted seedlings:

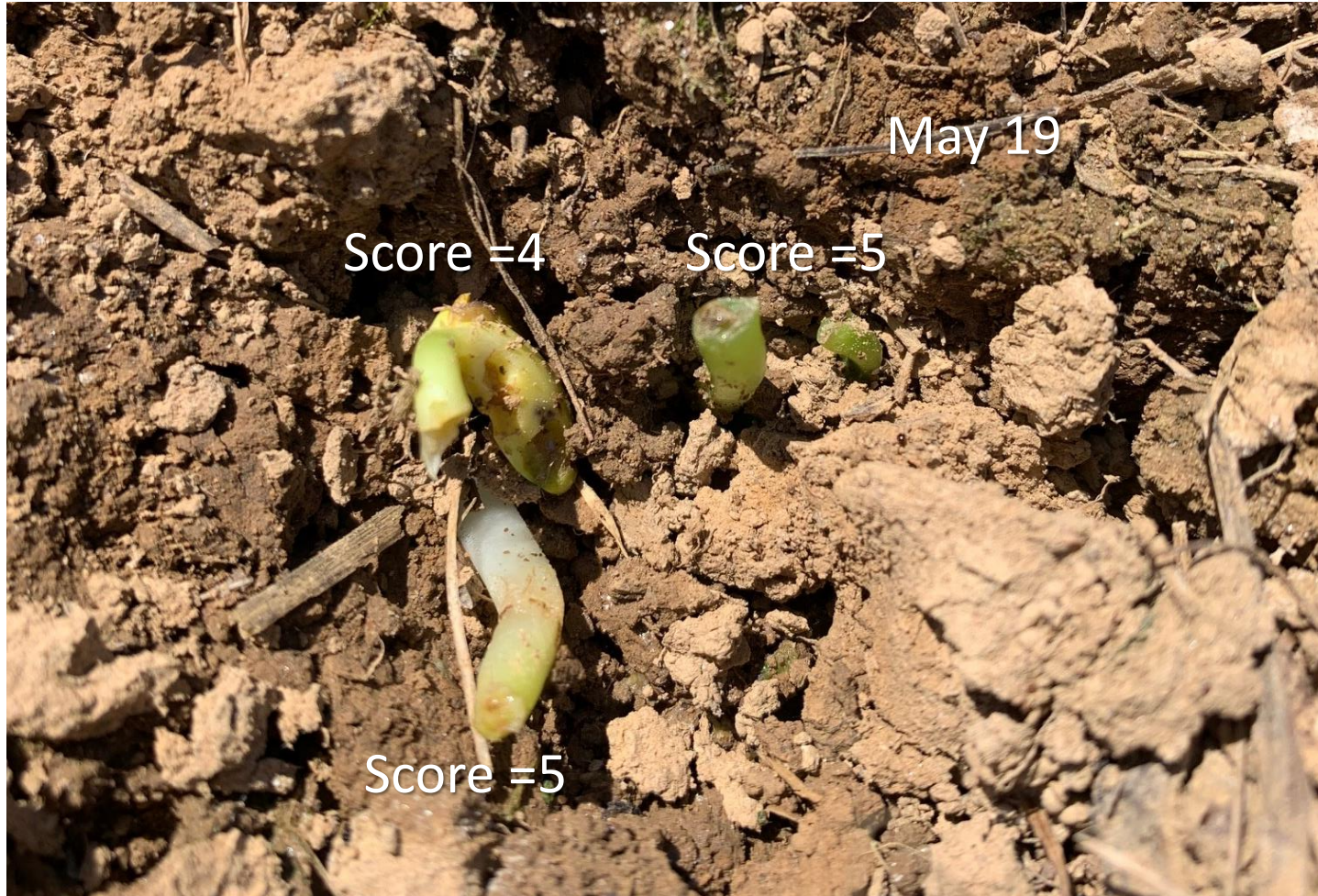
- 1 (none),
- 2 (1 or 2 small bites, still healthy)
- 3 (cotyledons or hypocotyl damaged),
- 4 (severe damage, almost killed),
- 5 (stem or cotyledon eaten or broken off, plant will die).



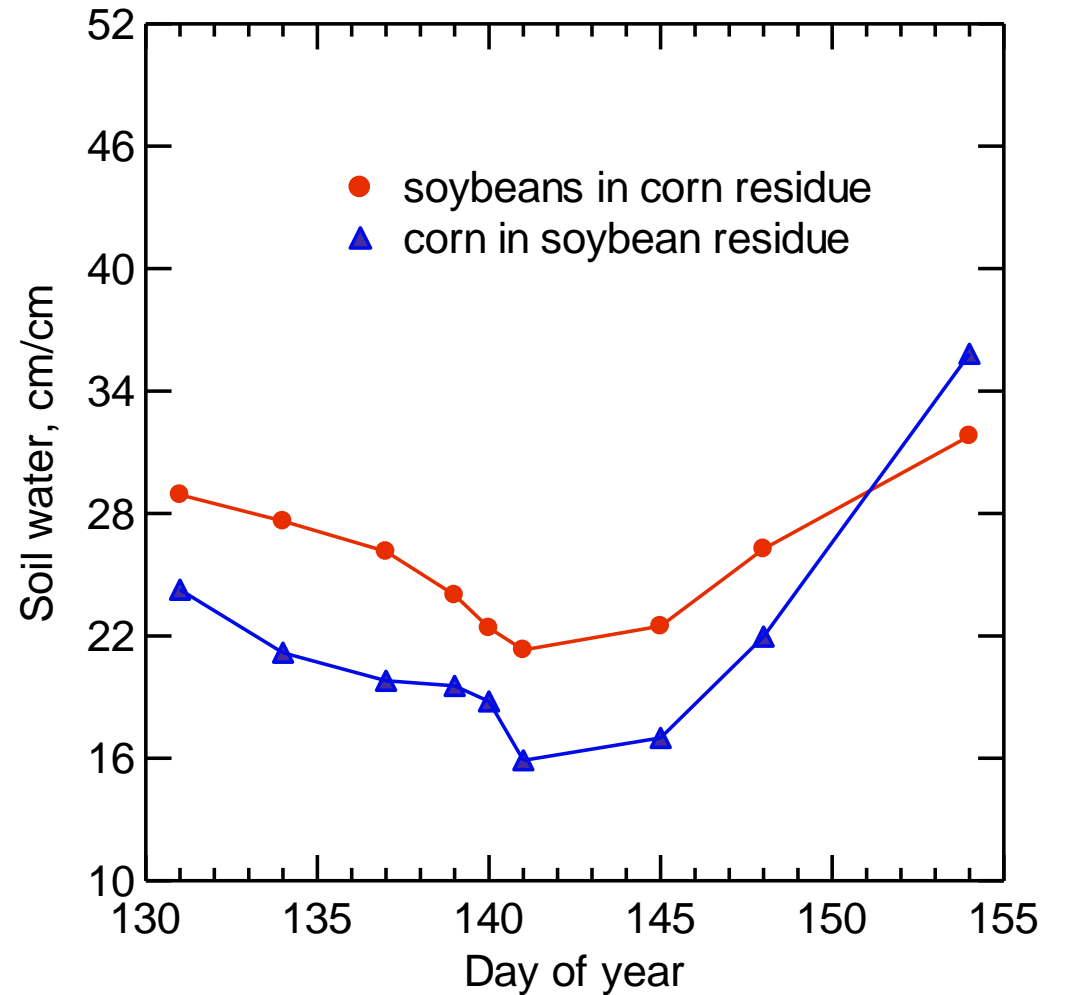
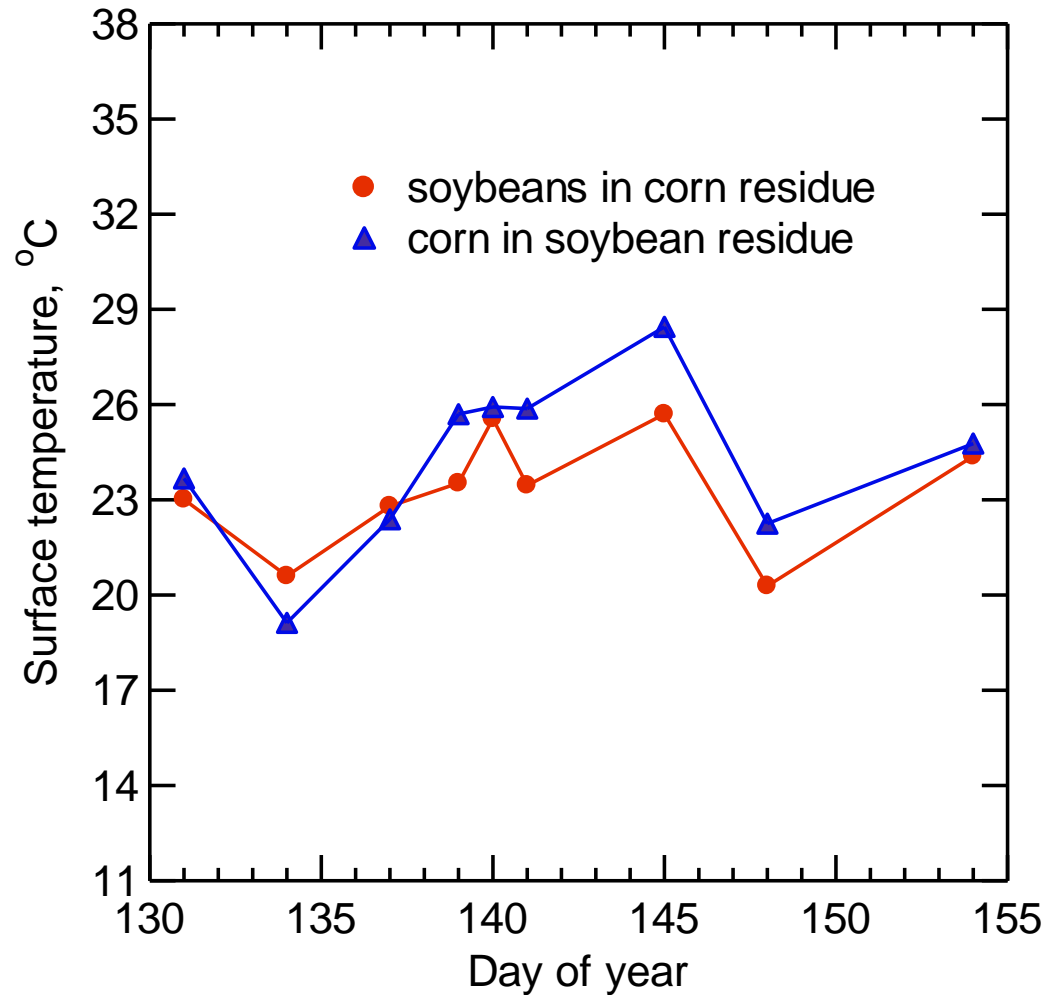
Scoring soybean slug damage



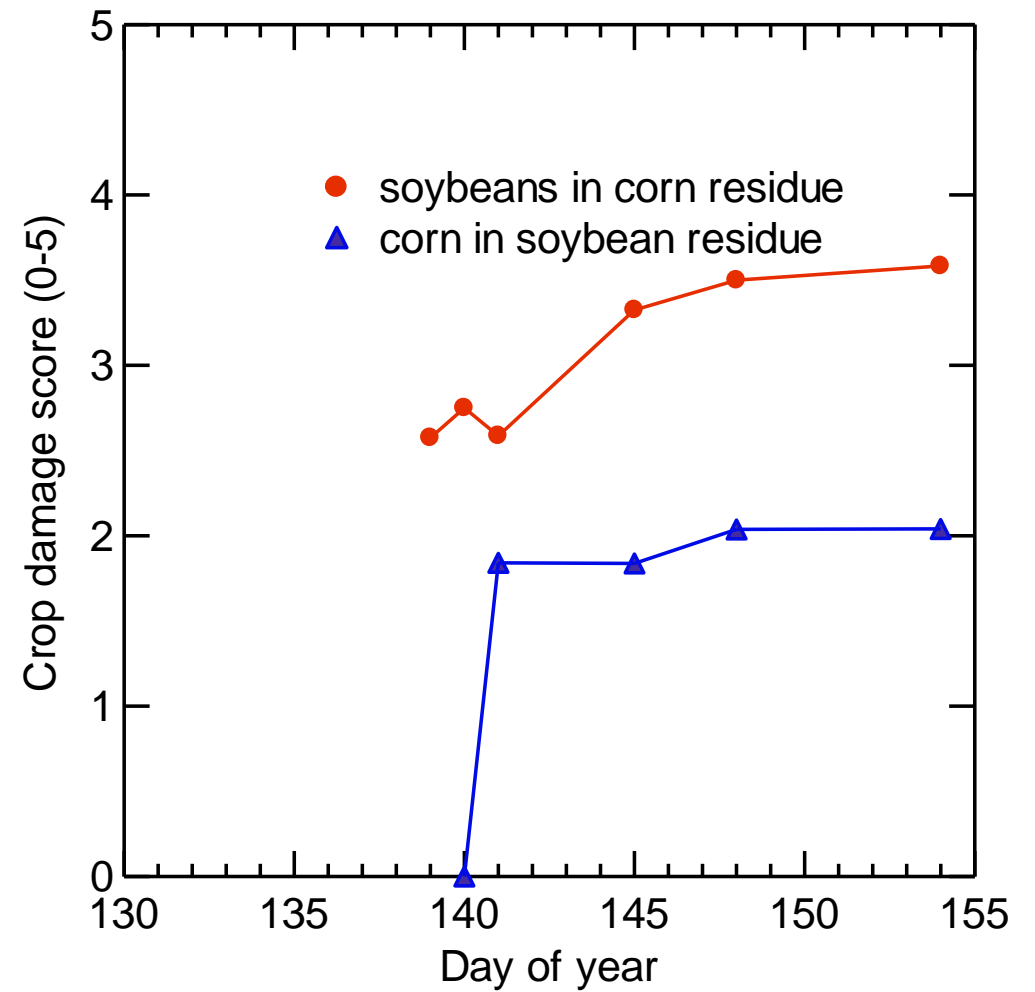
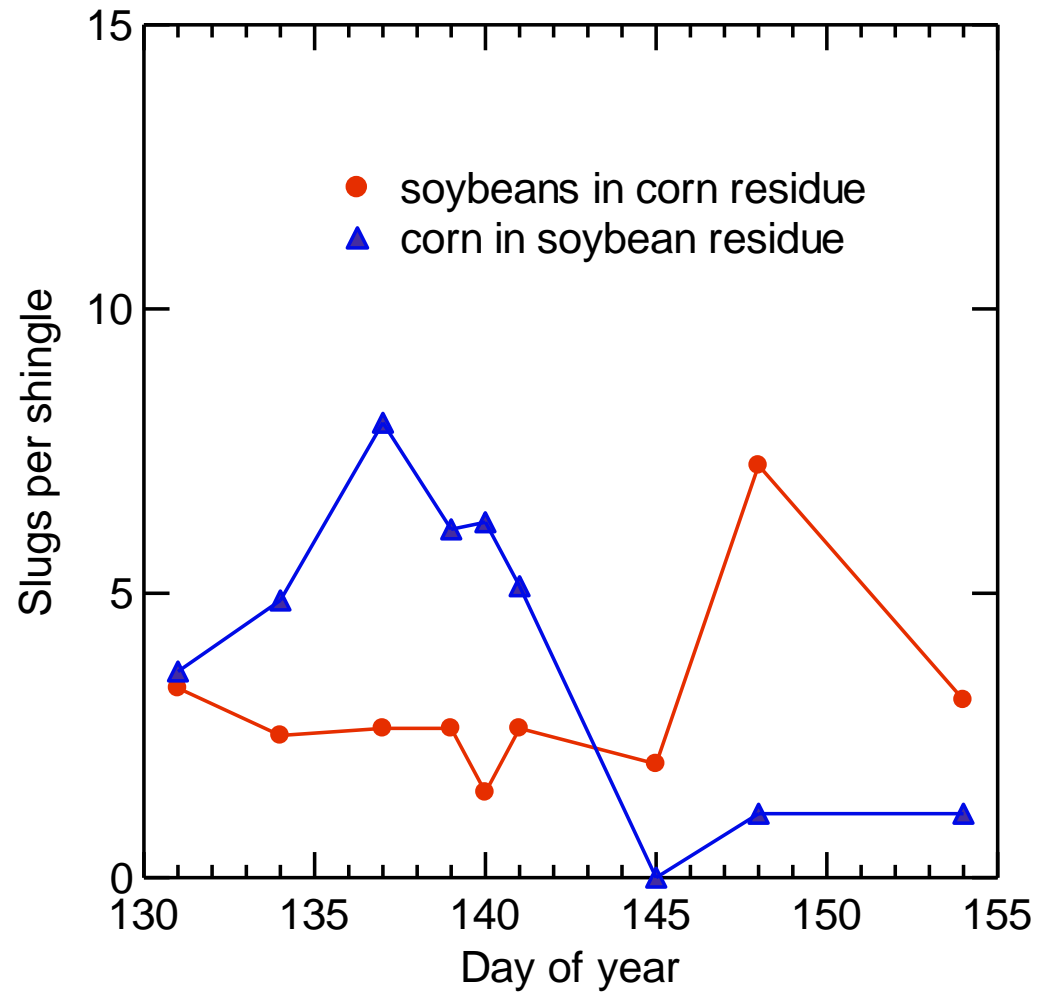
Soybeans no-till planted on 06 May 2021.
Slug damage looked pretty bad in mid May



Soil water and surface temperature means for mid-kill date cover crops



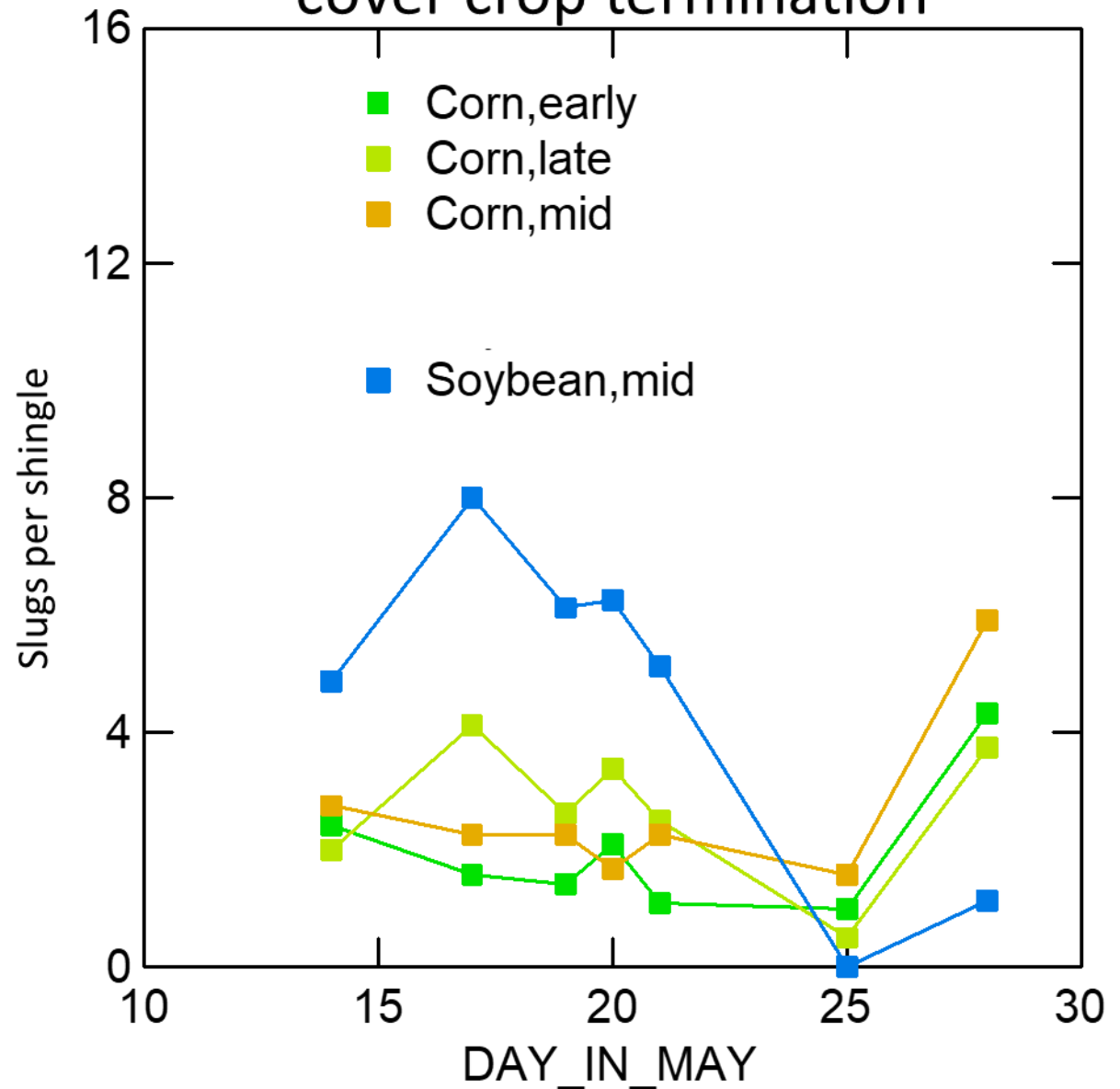
Slug counts and crop damage scores: means for mid-kill date cover crops





*Slug species probably
Deroceras laeve (O.F. Muller, 1774)*

Previous crop residue and time of cover crop termination





May 28

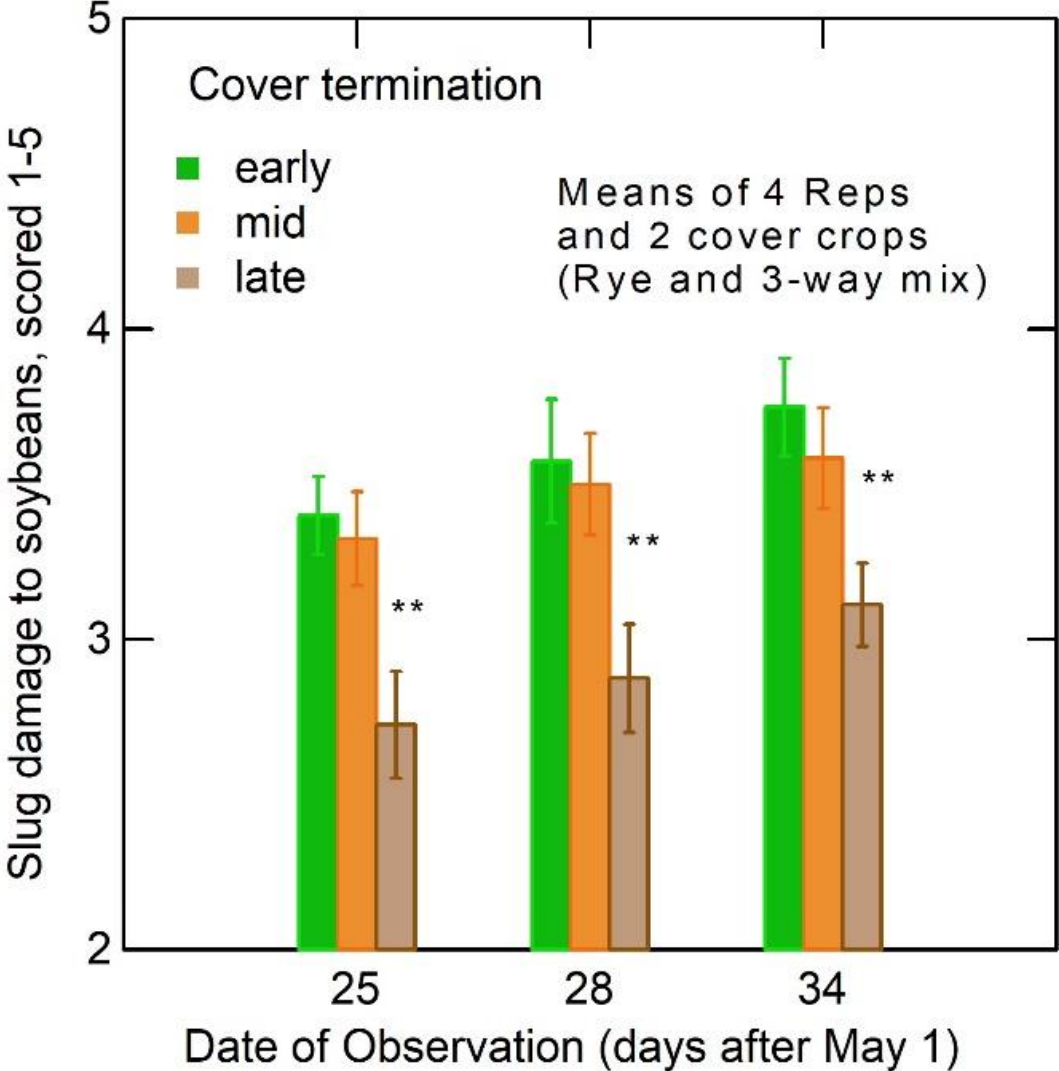


May 28



June 3

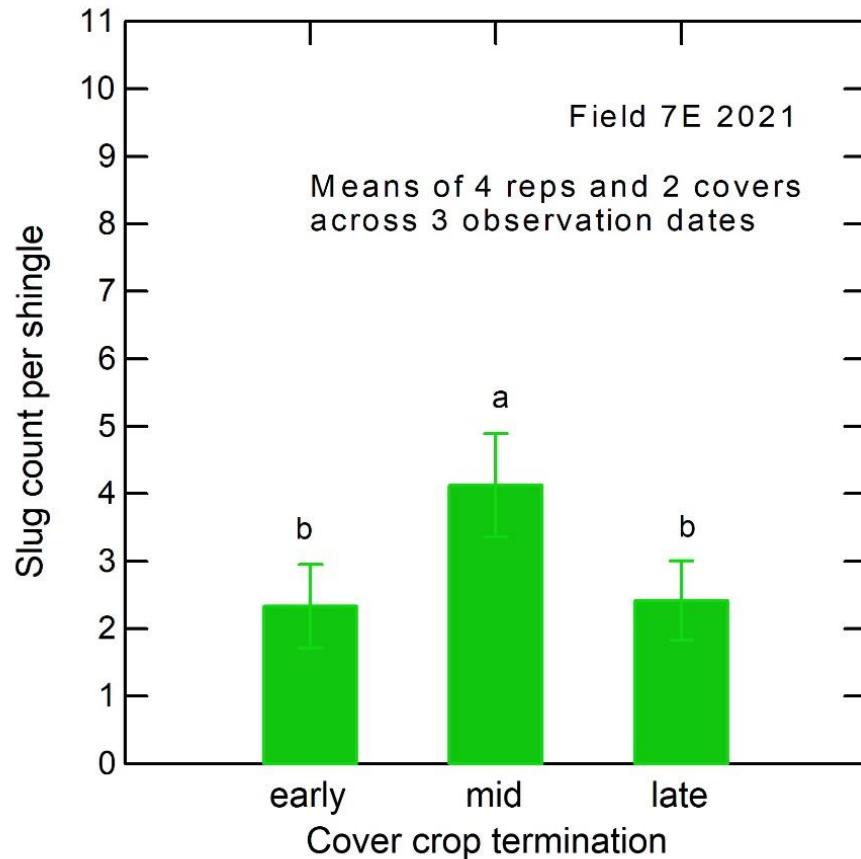
Slug damage scores on soybean seedlings



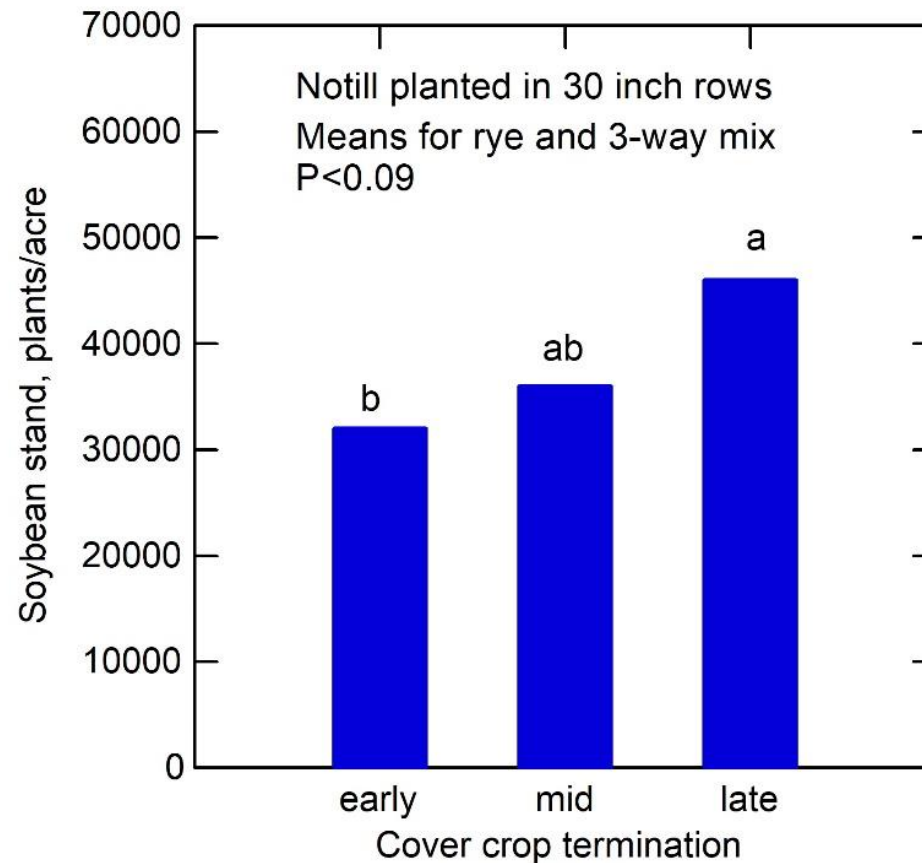
Even though because of this very cool spring, the late-kill cover crops were dead before soybeans finally emerged, it appears there was some advantage to planting green and killing after planting soybeans.

Counts of slugs and surviving soybean plants

Average slug counts



Soybean stand based on counting two 10-ft sections of row on 03 June 2021



Initial conclusions

- Prior to crop emergence, slug counts were higher in soybean residue than in corn residue.
- Soil under corn residue was wetter and cooler than soil under soybean residue.
- Prior to crop emergence, cover crop did not affect slug numbers.
- Soybean damage scores averaged across rye and 3-species mix cover crops were lower in the late cover crop kill (planted green) plots than in the early and mid kill plots.
- By the time trifoliolate leaves developed, soybean stand counts were somewhat higher in late-kill “planted green” plots.
- The cool spring conditions delayed soybean emergence until after the late-kill cover had mostly desiccated. The benefit of planting green may be greater under conditions better for rapid soybean germination and seedling growth.