

Southwest Michigan Field Crops Update October 2020

Hi folks,

October has gotten away from me, and I have not been able to put together an update for field crops farmers and industry thus far. I plan to send one out at the beginning of November, but I do want to bring a couple of things to your attention that can't wait until then.

Management of Frost Damaged Immature Soybeans

We have had several frost events already this fall, though we have not yet reached down to a hard frost, i.e. 28 F. With over half of the soybeans in the state yet to harvest, and even a few fields that have not yet reached maturity, the question arises of what impacts frost has on soybean. MSU Extension soybean educator Mike Staton wrote an article, "[Harvesting, Drying, and Storing Frost-Damaged Soybeans](#)," to help growers who are dealing with this situation.

Kenneth Hellevang, a professor in the Department of Agricultural and Biosystems Engineering at North Dakota State University, wrote the following to aid in management decisions.

Soybeans killed at growth stages of full seed development (R6) and beginning maturity (R7) should be left out in the field to dry and harvested along with mature soybeans (R8). Weather conditions during the field drying period after plants are frozen impacts the color of harvested soybeans. NDSU research during 2019 found for R6 soybeans field dried during nice weather, there was significant change in the color of the seed coat with a golden yellow tone approaching that of mature soybean (R8-control) after field drying. However, R6 soybeans field dried during freezing temperatures, snow and rain, and lack of sun after desiccation had a green tone to the golden color. Despite the bean yellow/green tone observed after field drying, little green color was observed in the extracted oil from the seeds during a 2019 study and close to that of the mature R8-control. Despite the snow and rain encountered prior to harvesting of the desiccated seeds, leaving the seeds out in the field likely aided the natural ripening causing degradation of chlorophyll pigments in the seeds.

Early freezing temperatures have been reported to result in low oil yield. According to a Wisconsin study in 1998, soybeans on frost-damaged plants showed quicker maturity and color change than those on undamaged plants.

Effect of storage on the quality of stored beans after field drying

There was only a slight change in color during six months of storage of soybeans that had been field dried. A green tone still existed in the visual observation of stored soybeans at the end of the sixth month. There also was a very small change in chlorophyll content in the oil. But, the

chlorophyll level was low after field drying, so little change was expected. During the first year of the research, soybeans were stored at 40 and 75 degrees, with and without light, and with and without aeration for four months. There was a marginal increase in the yellow color and dissipation of the green in all the soybeans during storage. However, the only parameter that significantly impacted the color change in the soybeans during storage was exposure to light. Of course, the beans cannot be exposed to light in a storage, so research during the second year examined color change leaving the soybeans in the field after a killing frost.

There was a reduction in chlorophyll in all the soybeans during the 4 months of storage during the first year. However, the chlorophyll content of immature soybeans exceeded the level in mature soybeans.

Kalamazoo/St. Joseph County FSA Program Technician Position

The St. Joseph/Kalamazoo County Farm Service Agency (FSA) office is hiring a full-time permanent Program Technician (PT). The deadline to apply is TODAY, October 16, 2020. Duties include general office activities supporting FSA's customers at the field level, with specific programs assigned within the job description. Successful applicants must be reliable, have a professional attitude and enjoy working with the public. [Click here for Job posting.](#) Applications must be completed electronically through USAJOBS no later than 11:59 p.m., October 16, 2020. Contact Sharon Hoch, County Executive Director, at 269-467-6336 x 2 if you have specific questions regarding the position.

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