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## Double Crop Soybeans in WI May be A Gamble Worth Taking in 2021

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The Wisconsin winter wheat crop remains 10 days to 2 weeks (developmentally) ahead of where we were at this time last year. If this progress continues we can realistically be cutting dry wheat in southern WI by July 4th. Couple that with Nov. CBOT soybean contracts at \$13.93 (6/14/21) and though still risky we can start to pencil out a potential profit for WI growers to double crop soybeans in 2021.

The first two questions growers considering double crop soybean will likely ask are “What can be done to expedite wheat harvest” and “Can I apply glyphosate or some other desiccant to my winter wheat to aid in dry down?” First read the label of any product you intend to use to make sure the application is legal. If the product is labeled, read the application timing information and understand how to properly stage the wheat plant prior to application. Below is subset taken from the Roundup WeatherMax label.

Preharvest (Feed Barley and Wheat Only)

**USE INSTRUCTIONS:** This product provides weed control when applied prior to harvest of feed barley or wheat. For feed barley, apply after the hard-dough stage when grain moisture is 20 percent or less. For wheat, apply after the hard-dough stage when grain moisture is 30 percent or less. Stubble may be grazed immediately after harvest. Apply this product in 10 to 20 gallons of water per acre when using ground application equipment and in 3 to 10 gallons of water per acre when using aerial application equipment.

**RESTRICTIONS:** Do not apply more than 22 fluid ounces of this product per acre for preharvest application. Allow a minimum of 7 days between application and harvest or grazing

In winter wheat, the timing for WeatherMax is hard dough (or 30 percent or less grain moisture). An application before this growth stage will not only be off label, it will likely reduce grain yield as the plant is prematurely killed. We do not want to sacrifice any wheat yield in hopes of gaining a few extra days for soybean. In terms of its effectiveness to aid in dry down, I have spoken with many colleagues across the country as well as Canada and the consensus is that the application will not greatly enhance dry down. As you note in the text from the WeatherMax label, the intent of the product is to provide weed control, not increase the rate of wheat drying.

An alternative to herbicide desiccation is to swath the wheat crop when the grain is still wet and let it dry in windrows. This option is risky because rainfall on swathed wheat can lead to sprouting in the head

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and raking a wet windrowed wheat crop can lead to large shatter losses. Also, an appropriate combine header is needed to harvest swathed crops.

The other option to expedite harvest is physically combine the wheat crop at a greater moisture content than we normally would. If a grower has access to a stripper header, winter wheat can be combined a few points wetter than with a conventional reel type head. Recognize that stripper headers decrease straw quality and if you are intending to sell the straw, then this must be factored into your decision. The other factor to consider is the drying cost or dockage associated with harvesting and selling wet grain. Based on 2021 data the average dockage for moisture was \$0.005 per bushel per 1/10<sup>th</sup> point of moisture above 13.5% plus a factor for shrink. Also be aware that some elevators have an upper limit for grain moisture they will accept.

Once we have the wheat harvested we must consider the realistic yield potential of soybean planted in July for WI. An extensive planting date study was conducted in the early 1990s to quantify the effect of planting date and maturity group on soybean yield. Since full season maturity group soybeans were considered unrealistic for this late of planting only early and mid-group soybean cultivars were used. The average yield of a soybean planted on July 5<sup>th</sup> was 20 bushels per acre with a range of 9 to 33 bushels (Figure 1). The latest planting date in this study was July 12<sup>th</sup> which yielded 13.6 bu per acre (only one year data). For yield potential and harvestability, (a combine may not be able to pick up the lower pods) a grower should plant a mid-maturity group soybean (no earlier than 0.5 to 1.0 maturity group earlier than your full season soybean) instead of an ultra-early maturity group bean (0.5 or earlier).

To maximize yield potential in late planted soybean, growers should target a stand of 180,000 plants per acre in a drilled system. Wider row spacings and reduced plant stands will lead to reduced yield potential due to decreased canopy development. Planting too few seeds can also lead to a lower physical pod set and harvest issues. To achieve 180,000 plants per acre a grower may have to plant up to 200,000 seeds per acre (assuming 90% germ). It has been difficult to put forward a good “average” seeding cost as the farm gate prices for glyphosate tolerant untreated seed ranges from \$40 to near \$60 per 140K unit. Add to that the broad range in seed treatment costs (seed treatments are discussed below) and seed costs can approach \$70.00 per unit. If we assume 140,000 seeds per bag and 90% germ the input cost range for double crop soybean seed is \$64.28/acre to \$100.00/acre. Couple this with the planting cost (\$21.90 per acre; [2021 Iowa Custom Rate Guide](#)), herbicide (\$3.00) plus application (\$8.00 per acre;), harvest and hauling (\$49.90 per acre; [2021 Iowa Custom Rate Guide](#)), fertilizer removal and “miscellaneous” costs the profit margin does significantly tighten, but still remains positive if we can hit the 20 bushel mark.

The biggest question on inputs that we have not addressed yet is seed treatments. I want to say right up front that I have little-to-no data in our conditions about the need for seed treatments in a WI double-crop soybean system so I can only put forward my thought process and rationale. There is likely not a biological need to use treated soybean seed, however treated soybean seed this late in the season is often heavily discounted as it is often destroyed. So shop around and get a good price!

Lastly and undoubtedly the most important factor for double crop soybean profitability will be the environment. The two major environmental events to consider with double crop soybean are establishment and frost. It is likely that soil moisture will be depleted following a winter wheat crop and rainfall patterns in July are often spotty at best, therefore crop emergence and establishment may greatly be delayed if we need to wait on adequate moisture. Therefore no-tilling soybeans to conserve soil moisture and planting to moisture (assuming moisture is 2 inches or less) is important. **If there is not**

**adequate soil moisture and there is no rain in the forecast - don't plant.** The second and perhaps more important environmental event is frost prior to physiological maturity. Individual soybeans that are not mature and are subjected to a significant frost event will remain green even if weather conditions warm. Even if frost does not occur, a grower will likely harvest some green beans. The implications of these green beans are storage problems as well as significant dockage at the elevator. Please see [Effect of Freezing on Soybean Seed Yield and Composition](#) for more information.

2021 has already been a unique and challenging year for WI growers but if the wheat continues to progress at its current pace and we catch timely rains a real potential for profiting on double crop soybeans may exist.

**Figure 1. Planting date effect on grain yield of early to mid-maturity group soybeans (0.4 to 1.8 RM) in southern WI (Data from early 1990s planting date study).**

