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Optimizing winter wheat planting date for increased double crop yields in the mid-Atlantic region

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Soybean yields decrease on average by one bushel per day that planting is delayed in the spring. In the mid-Atlantic region, soybeans are typically double cropped with winter wheat, which is planted in the fall. Winter wheat harvest is the main factor that delays soybean planting. The main objective of this experiment is to determine how much earlier winter wheat can be planted in the fall to allow for an earlier spring harvest. Winter wheat reaches physiological maturity one day earlier for each week that it is planted earlier in the fall. Most cooperative extensions recommend planting winter wheat after the Hessian fly free date (1st killing frost), in Virginia it is October 15th. However, improved insecticide seed treatments and seedling plant resistance can protect the crop during this period. Therefore, waiting until mid-October to plant winter wheat reduces yield potential of both wheat and soybeans when double cropped. This experiment includes 15 different winter wheat varieties ranging from very early to very late in maturity, replicated three times per location in a complete randomized split plot design at five locations in eastern Virginia and Kentucky during 2016, 2017, and 2018. Preliminary results indicate that MID and LATE maturing winter wheat varieties should be planted one to two weeks earlier in the fall to optimize double crop yield. Earlier maturing cultivars suffer frost damage and are not suitable for an earlier fall planting.