

## Winter Oilseed Quarterly Research Update #8: Considerations for optimizing planting date in pennycress

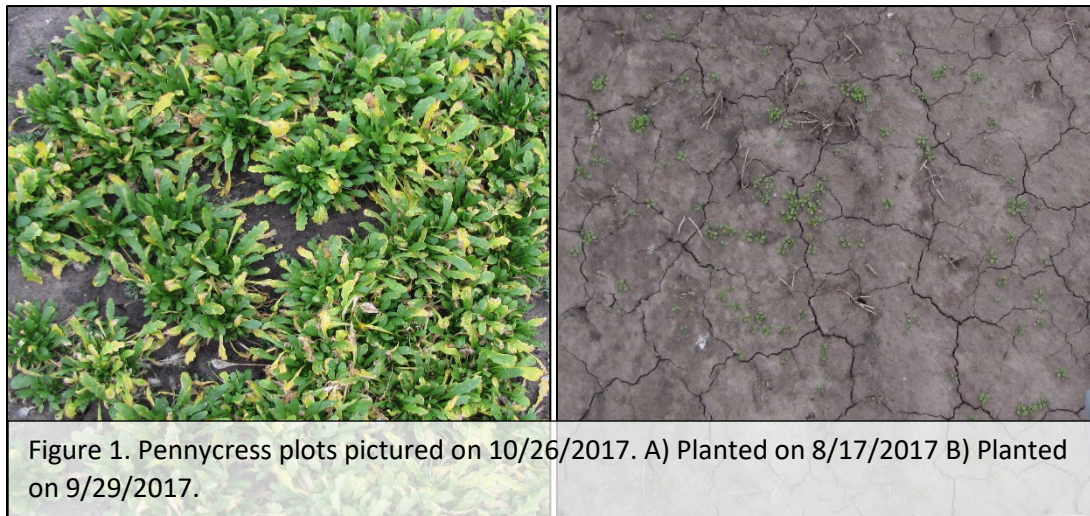
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Pennycress (*Thlaspi arvense* L., Field pennycress) is a new winter annual oilseed-producing cover crop for the Upper Midwest. As a cover crop, pennycress is planted in the fall and provides protective living cover to the soil throughout winter and early spring before maturing in late spring. Optimizing the fall planting date for pennycress is important for improved agronomic considerations such as improved soil cover, increased nutrient capture, and improved harvest timing. The fall planting date may also be important for breeding considerations as new early flowering pennycress lines are developed. Several studies are underway to evaluate the effect of planting date on establishment, harvest date, and yield, as well as the effect of planting date on early flowering lines (Table 1, Figure 1).

Pennycress planting dates may be affected by corn harvest timing, while pennycress harvest dates may affect soybean planting and production. August planting dates may also lead to more fall biomass to protect the soil and earlier harvests in the spring reducing the effect on soybeans. However, these early planting dates may also leave pennycress exposed to pests for a longer period before the first frost. It is unknown if this longer fall growth period will lead to increased oilseed yields, or if increased pest exposure could be a problem.



Studies have been devised to evaluate these challenges at multiple locations in Minnesota. One study tested the role of planting dates in full season standing corn on pennycress seed yield and soybean production the next spring. Preliminary data showed that we successfully established stands of oilseed seedlings in full season corn across four planting dates and two years, however subsequent pennycress growth, biomass production and seed yield were severely limited by the amount of stover covering the pennycress in the fall. Further analysis of these studies will provide planting guidance for MN producers

wishing to add pennycress as a cash cover crop to their existing crop rotations. We expect that optimizing planting date will improve establishment, increase nutrient capture and runoff prevention as well as improve oilseed yields.

Study	Years	Locations	Planting dates	Genotypes
Early Flowering Evaluation	2017-2018 2018-2019	St. Paul Rosemount	Mid-August Late August Mid-September Late September	5 early flowering pennycress lines, 1 late flowering pennycress line, and check line MN106
Planting Date Optimization	2016-2017 2017-2018	Lamberton, Morris, Rosemount, and Waseca	Mid-August Late August Mid-September Late September	MN106

Table 1. Planting date studies in progress.