HARVEST DATE AND METHOD FOR *CUPHEA* IN THE NORTHERN CORN BELT

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Cuphea (Lythraceae) is rather unique among plants that grow in temperate climates because its seed storage lipids are primarily composed of medium-chain triglycerides. Semi-domesticated genotypes developed from crossing *C. viscosissima* x *C. lanceolata* show good potential for commercial production. *Cuphea* has an indeterminate growth habit and flowering and seed maturation can occur over a 4 to 8 week period. Seed capsules that initially form during reproductive phase, by the end of the growing season, tend to split at the dorsal surface allowing seed to shatter. Little is known about when or how to harvest present *Cuphea* genotypes in order to maximize seed yield.

The present study was initiated in 2000 to determine the optimum period and method to mechanically harvest *Cuphea* in west central Minnesota. *Cuphea* (PSR-23) was sown in 61 cm spaced rows with a Marliss no-till grain drill at a rate of 6.7 kg of seed/ha on 15 May in 2000 and 10 May in 2001. Harvests were taken at weekly intervals between 23 August and 21 September in 2000 and 13 August and 23 October 2001. Methods of harvest that were evaluated included wind-rowing, defoliating with paraquat and combining, treating with Roundup and combining 8 to 14 days later, and straight combining.

Results clearly showed that greatest seed yields were obtained in late September to early October, corresponding with the average time when the first "hard" frost (i.e., $\leq$ -2° C) in this region occurs. Death and dehydration of plants facilitated by freezing aided seed harvesting. However, freezing also hastened seed shattering. During 2001, harvested seed yield increased almost 2.5-fold between 31 August and 11 October with a hard frost occurring 6 October. By 17 October, yield declined 63 %, likely due to seed shattering. Of the harvest methods evaluated, straight combining with a small grain header, typically used for soybean, gave the best results.

Initial results indicate that when planted in early to mid-May, the best time to harvest *Cuphea* in west central Minnesota is late September to early October, similar to the time frame used for soybean production in this region. The best mechanical harvesting method appears to be combining with a small grain header.

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