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*Biodiesel from Sunflowers – Phase IV: An Analysis of Seedling Rates, Planting Dates, Varieties, & Oil Content*

The purpose of Phase IV is to address two main questions: would the seeding rates of sunflowers affect the oil content of sunflowers and would planting dates affect oil content. To provide additional information to local farmers, these two variables were tested on four locally grown sunflower varieties to determine which produced the highest oil content. It was predicted that the test plots that have an earlier planting date combined with the lower seeding rate would produce sunflowers with a higher oil content than test plots planted later and at higher rates, on all varieties being tested. Twenty four plots were planted with randomized seeding rates, planting dates, and varieties. This was repeated two more times for a total of three repetitions on the experimental field. Before harvest, stems were counted to determine total number of plants for estimating plant population. During harvest, seed samples were taken from each test plot and sent off for oil content analysis. Results showed that planting date and sunflower variety did have an effect on the oil content. As predicted, those sunflowers that were planted earlier produced a higher oil content than those planted later. However, seeding rate had no significant impact on the oil content. Mycogen 8H449 sunflowers ended up producing the highest oil content among all four varieties under all planting dates. The four varieties showed no significant difference in oil content under either seeding rate.