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THE EFFECT OF SUBLETHAL MCPA ON THE GROWTH AND FLORESCENCE OF BRASSICA NAPUS L.

Brassica napus L. (Canola) is one of the most produced agricultural crops in Canada, wherein over \$6.5 billion of Canola was exported in 2017 alone. Research investments that aim to minimize adverse effects on Canola development can in turn, maximize the potential economic output of Canola farming. As an effective, and commonly used herbicide, MCPA is the second most widely used pesticide in Alberta. However, it has been noted to have adverse effects on broadleaf plants in high dosages. In the environment, MCPA has been found in concentrations between a few nM and in excess of 100 nM. The sublethal effect of MCPA has not been completely assessed on Canola. In a controlled lab environment, Canola is germinated and grown for 12 weeks in a complete nutrient solution with a control (no MCPA) and two treatment groups of 50 nM and 100 nM MCPA Ester. Characteristic of a long photoperiod in plant physiology, the Canola was provided with 16 hours of

light and 8 hours of dark. Shoot height measurements and time between seeding & florescence is measured. The Canola in the control group grew steadily, without periods of uncontrolled growth. The 50 nM concentration treatment initially showed delayed growth but after about 14 days, the growth exceeded the control. The 100 nM concentration treatment showed delayed shoot growth for the full measurement period but were the first to develop flowers. Future research will look further into the effect of MCPA on the florescence and crop yield of Canola.

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