

IMPROVEMENT OF YIELD IN GREENHOUSE GROWN DETERMINATE MULTIFLOWERED PEAS WITH GIBBERELLIN TREATMENTS

Sonja L. Maki^{1*}, H. Mullen¹, R. Pharis² and S. Singer¹

¹Biology Department, Carleton College, One North College Street, Northfield, MN 55057 USA,

²Biological Sciences Department, University of Calgary, Calgary, Alberta, T2N 1N4, Canada

The determinate (*det*) line of pea displays a more synchronous flower development than wildtype (WT) due to the early cessation of growth of the terminal meristem. However, yield may be reduced in determinate lines compared to WT indeterminate lines. We have previously analyzed the effect of different gibberellins (GAs) on the growth and development of a determinate, multiflowered line of pea (*det multi*) in growth room growing conditions. In the current study, we evaluate the effects of GA₄ and two ring-D modified GAs, 16,17-dichloromethano dihydroGA₅ (DiC) or the exo-enriched isomer of 16,17-dihydroGA₅ (DiHGA₅) on growth and flowering of the *det multi* line under greenhouse growing conditions. DiHGA₅ is known to be a competitive substrate inhibitor of 3- β hydroxylation of 3-deoxy GAs. The *det multi* plants were treated once with 5 or 25 μ g of GA₄, or with one of the two ring D-modified GAs when plants had six expanded leaves. Gibberellin treatments resulted in an increase in seed yield primarily due to enhanced development of lower floral, axillary nodes.