

C025602 : MAJOR GENETICS

KEY WORD : GERMPLASM/SELECTION/MUCILAGE CONTENT/*Ocimum americanum* Linn.

SOMCHAI PRAYUNRAK: COLLECTION AND SELECTION OF *Ocimum americanum* Linn. GERMPLASM FOR HIGH MUCILAGE CONTENT LINES. THESIS ADVISOR: ASSO.PROF.SUMITRA KONGCHUENSIN, M.Sc. 88 PP. ISBN 974-581-651-5

Exploration and collection of *Ocimum americanum* Linn. germplasm were carried out during December to January in 1988 to 1990. Twenty two seed samples were collected from Amphur Muang and Amphur Bo-Ploi of Changwat Kanchanaburi. All of these samples were conserved at 15 °C as a *O. americanum* Linn. genetic resource.

Selection of *O. americanum* Linn. lines for high mucilage content were conducted from original populations consisting of 5 samples collected from Changwat Kanchanaburi, 2 samples from Indonesia, 9 samples of high mucilage content lines D, E and F and 37 samples of F₃ generation from D, E and F lines crosses from Pokkwan Hutangkura experiment in 1988.

Method of selection were pure line selection and pedigree method. The main criteria of selection was mucilage content character. The consideration were also made along with 1,000 seeds weight, number of inflorescence per plant, length of inflorescence, plant height, days to flowering and days to harvesting. Twenty two plants were obtained from two successive selection in 1988 and 1989 and were grown for the third selection with two commercial lines as the checks in 1990.

The planting for the third selection was evaluated in randomized complete block design with three replications. It was found that 19 lines of *O. americanum* Linn. have mucilage content significantly higher than commercial lines and also 4, 3, 13, 7, 1 and 7 lines of *O. americanum* Linn. have 1,000 seeds weight, length of inflorescence, number of inflorescence per plant, days to flowering, days to harvesting and plant height significantly better than commercial lines respectively.