INFLUENCE OF VERNALIZATION IN BOLTING AND BULB PRODUCTION OF CLUSTER ONION (*Allium cepa* L.) GERMPLASM DURING YALA SEASON IN KILINOCHCHI

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ABSTRACT

An experiment was conducted to find out the influence of vernalization on bolting efficiency and bulb production of different varieties of cluster onion. This research was carried out during the period from February to June 2023 at the Experimental area, Faculty of Agriculture, University of Jaffna, Kilinochchi. Three onion varieties (MICLO1, ARLCLO2, ANKCLO1) and an advance breeding line (TVM6) were used with vernalization and non-vernalization of bulbs. Treated Bulbs and untreated bulbs were planted in field using Randomized Complete Block Design with three replications. Agronomic traits (First Flower initiation days, 100% Flowering Days, Number of flowers per umbel, Number of Flower stalk per plant, Width of umbel(cm), Number of Seed per umbel, Number of bulbs per plant, Dry bulbs weight(g)) were recorded in different treatments from sampled plants. Data were analyzed using SAS application. Analyzed data revealed that the onion varieties responded differently for bolting and bulb formation. Overall, the study found that vernalization improves flowering ability, flower presence in umbels and umbel size, Mainly Floral characteristics were influenced by vernalization with cultivars. The varieties responded differently for bolting and bulb production. Varieties ARLCLO2 and MICLO1 were shown suitability for bulbs harvests with yields having varying bulbs traits while breeding TVM6 (76 Flowers/Plant) and variety MICLO1(54 Flowers/Plant) were found to be the best for bolting. as well as MICLO1(134 seed/umbel) and TVM6 (125 seed/ umbel) for true seed production.in Kilinochchi.

KEYWORDS: Flowering, Seed setting, Genetics, Breeding, Agronomic traits.

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