

## A Farmer Participatory Study to Identify the Ideal Location/s for Promotion of True Seeds of Cluster Onion (*Allium cepa*.L.) in Jaffna District of Sri Lanka

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During the *Maha* season of 2020/21, a farmer participatory research project was conducted to determine ideal location/s for the production of true seeds of cluster onion (*Allium cepa*.L.) in Jaffna district of Northern region. During the cropping period, eight trial plots were created in farmer's fields representing different climatic and soil conditions. The 11 agronomical parameters were recorded in relation to true seed production potential and bulb yield. In addition, an arbitrary model was evaluated for long-term seed availability without change in the genetic makeup of the cluster onion cultivar *Vethalam*. Bulbs were planted on 80% of their area for true seed production and the rest 20% for bulb production in this approach. pH, EC, Organic Matter, Available Phosphorous, and Exchangeable Potassium were measured in soil samples collect from each unit. The soil pH and Exchangeable potassium content varied throughout the locations, according to soil analysis. Fifty percent flowering, productive stalks per plant, umbel with, Stalk height, days to maturity for seed harvesting, number of harvesting, number of mature seeds per umbel, number of immature seeds per umbel, seed yield, and germination were all significantly different between some of the locations tested. Increased number of harvests have increased the number of mature seeds per a flower. Number of mature seeds per umbel varied significantly and the experiment plot at Araly showed highest maturity seeds (138/umbel). Four locations viz; Arali (250.75 kg/ha), Kaithady (213.25 kg/ha), Pandathrippu (185.37 kg/ha) and Urumpirai (145.37 kg/ha) in Jaffna district have proven with acceptable true seeds production. Bulb yields of all location were reached above 11 t/ha. Tested model, leaving 20% of the land for bulb production and rest of the land for true seed production, has proven efficient for seeds sustainability.

**Keywords:** Arbitrary Model, Farmer Participatory, True Seed Production, *Vethalam*.