

Promising Pure Lines of Eggplant (*Solanum melongena*) Developed Through Population Improvement of a Locally Popular Cultivar –*Plastic*

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Recurrent selection is an important breeding method employed to improve the populations of crop plants particularly those of cross-pollinated species. Brinjal (*Solanum melongenum* L.) is one major cross-pollinated crop which is most important vegetable of the world and a have huge prospect in Sri Lanka. Though few brinjal varieties have been released by Department of Agriculture several Brinjal landraces are still being cultivated in Sri Lanka A local brinjal cultivar so-called “*Plastic*” also one of the popular cultivar being cultivated by farmers in the northern region especially in Vanni area. This cultivar does not have a pure population in the farmer’s field and the farmers received the seed materials from unreliable sources. Regional Agriculture Research and Development Centre (RARDC), Kilinochchi has initiated a purification program of the plastic cultivar since the year of 2016. Objective of this study was to generate pure line/s with high yielding with farmer and consumer preferred traits to the dry zone. Recurrent and open-pollination methods have been continued for five consecutive seasons with five lines to get purified high-yielding brinjal cultivar. Originally developed five lines were advanced for three seasons and one line (Number 5) was dropped out from the third season owing to its low yielding performance. While improving the population yield evaluation was also made. The generated four lines using recurrent selection were evaluated under replicated trails with three replication in Randomize Block Design (RCBD) throughout the seasons. Significant of the yield performances was evaluated using ‘t’ test. Yield evaluation conducted in the fourth and the fifth seasons with the selected lines have indicated that significant difference in their yield performances among these lines. Finally, two high performing uniform lines (Line number 02 and 03) with the yield of more than 22 t/ha were generated These two lines could be promoted as promising variety/s after conducting multi locations trials.

Key Words: Recurrent selection, Population improvement, Landraces, Brinjal, Pure line