B-94: Induction of mutations in tomato Variety Manik

Ranjini Peiris, D M R K K Dissanayake, T K Wickremesinghe
(*Horticultural Crop Research and Development Institute, Gannoruwa, Peradeniya*)

Tomato ranks as an important popular crop amongst nearly 50 vegetables grown in Sri Lanka. The production of tomatoes in Sri Lanka is beset by many problems. Bacterial wilt is the most serious constraint and limiting factor for successful and extensive cultivation of quality tomatoes. The use of resistant varieties is the most effective and economic means. The varieties available at present lack firmness resulting in high post harvest losses. Therefore, there is an urgent need for tomato varieties having resistance to Bacterial Wilt along with good fruit quality characteristics.

In this study mutation breeding tool was used to create genetic vanability in vanety Manik. This variety is having high resistance to Bacterial wilt but it lacks some fruit quality characteristics like colour and shape. The seeds of the Manik variety were iiradiated with a desirable dose of γ rays, 39.25 Krad. During Maha 96/97 M_1 generation was raised and fruits from 1st raceme and second raceme were harvested. During Yala 1997, fruit progenies were raised as M_2 generation.

Each fruit progeny with 21 seedlings were screened for mutations. In both seasons, cultural practices and fertilizer application were done according to recommendation of the Department of Agriculture.

In M_2 generation several beneficial mutants were identified. The observed variations were in fruit shape, colour, weight, no. of fruits/plant, plant height and days to 50% flowering. These mutants will be further evaluated for yield and fruit quality characteristics.

Financial assistance by Council for Agricultural Research Policy (Research grant 12/332/249)is acknowledged.