

Effect of extended pollination time on fruit set and seed development and storage temperature on viability and storability of pollen of Eggplant (*Solanum melongena* L.)

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Abstract

The effects of extended time period of pollination on seed yield and pollen viability, storability of pollen of eggplant were studied. The extended time period of pollination was conducted using 100 plants and pollination was performed at 30 minute intervals starting from 6.30 am to 1.00 pm in RCBD experiment with five replicates at Government Seed Farm at Alutharama. Number of fruits, number of seeds, viability of seeds, Percentage of filled seeds, weight of seed and ambient temperature during pollination (Temperature) were recorded. Pollen viability and storability were assessed using extracted pollen during 9.30 am-10.30 am. Pollen samples were stored under different Temperature in refrigerator and in ambient temperature. Each treatment was replicated five times. Pollen viability and germination were measured using 2,3,5-triphenyl tetrazolium chloride (TTC) and Sucrose medium respectively, and fruit set was determined using artificial pollination in RCBD experiments with three replicates at HORDI, Gannoruwa. Analysis of variance was done by using SAS and JMP IN software packages.

Fruit set (76.3 %), seed viability (80%-100%) and Percentage of filled seeds (89.24% and 84.32%) during extended pollination time (6.30 am to 8.00 am and 10.00 am. to 11.30 am) were not significantly different from recommended (8.00 am to 10.00 am) time. Greater fruit set percentage was observed from 6.30 am to 11.30 am. Highest pollen viability was reported at -20 °C and highest fruit setting was recorded for pollen storage at -18 °C. Pollen stored for 3 days showed highest fruit set (78.6%) while 74.6 and 73.3% of fruit set percentage was recorded for pollen stored for five days and seven days, respectively. Highest pollen viability was recorded 3 days after storage, whereas pollen stored for five days showed lowest viability (56.8%).

Keywords: Pollen Viability, Pollen Storage, Pollination Period, Pollen Storage Period