

THE DEVELOPMENT OF BERRY, SEED
AND EMBRYO IN OPEN POLLINATED AND
HYBRID TRUE POTATO SEED

By

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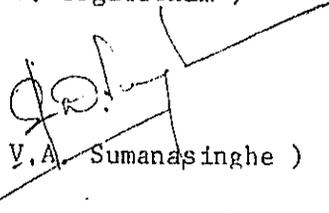
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ABSTRACT

An experiment was conducted at Regional Agricultural Research Center, Bandarawela from Yala 1989 to Yala 1990 to investigate the factors that affect the production of high quality True Potato Seeds (TPS) using three female parent and one male parent.

A positive, significant, linear correlation was found individually between berry girth, berry volume and the number of seeds per berry in all three females. The hundred seed weight, percentage of A and B embryo types, seed germination and early seedling vigor indicated little or no correlation among one another or with berry girth, berry volume and the number of seeds per berry.

The difference between open pollinated and hybrid berries and seeds is prominent in almost all the characters studied. Girth, volume and number of seeds per berry in open pollinated berries of Tollocan and I-1039 was higher than those of hybrid berries. In all the other characters including number of tubers per hill and yield hybrids showed superiority over open pollination.

Berry maturation on plant produced seedlings with higher vigor than the maturation in nutrient solution or distilled water in Tollocan. In all the other characters in all three females, no significant difference was found between the three methods of maturation used.

In open pollinated and hybrid berries and seeds of all females, the optimum values for all the characters investigated were observed between 4th week and 8th week after pollination. Berries extracted at two weeks after pollination had the lowest value in almost all characters. Maturation of seeds in the intact berries for a period longer than four weeks resulted in seeds with better quality than seeds harvested after 2 weeks.