protein of the whole seed and endosperm and individual fractions of both salt-soluble and insoluble proteins of endosperm[9].

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SEED YIELD OF ONION AS INFLUENCED BY DIFFERENT BULB-CUTS

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ONION is a biennial crop and the cost of bulbs (planting material for the seed crop) is exhorbitantly high during planting. Suitable techniques for minimizing the cost of bulbs therefore need to be evolved. The present note reports our study on the effect of different bulb-cuts on the yield of onion seed and to explore the possibility of vertical-cut treatments for reducing the planting material requirement.

The investigation was conducted during the rabi season of 1983–84. The soil of the area was sandy loam. Five treatments comprising 4 different types of bulb-cuts viz (i) vertically into two equal pieces (1/2 vertical cut) (ii) vertically into four equal pieces (1/4 vertical cut) (iii) transverse cut (removal of top half of the bulb) and (iv) (removal of three quarter top of the bulb) as well as one control (whole bulb) were replicated four times in a randomized block design.

In the case of vertical cuts the bulb was cut longitudinally and each piece was utilized for planting. As regards half and one fourth transverse cuts, the length of the individual bulb was measured and half and three quarters of the top portion were removed in respective treatments (figure 1). Average medium-sized bulbs were planted in plots of uniform size (4.5 × 3.0 m) in the first fortnight of November. All other requirements including fertilizers were given uniformly for all the treatments.

The data presented in table 1 show no significant difference in different treatments for plant height and number of scapes per plant. The number of umbels per plant was influenced by $\frac{1}{2}$ transverse cut which was significantly better as compared to vertical-cut treatments, but it did not differ significantly from whole bulb and $\frac{1}{4}$ transverse-cut. There was no significant difference within two vertical-cut treatments, between $\frac{1}{2}$ vertical-cut and $\frac{1}{4}$ transverse-cut for this attribute. As regards the number of umbels per plot, not much difference was found between whole bulb and $\frac{1}{4}$

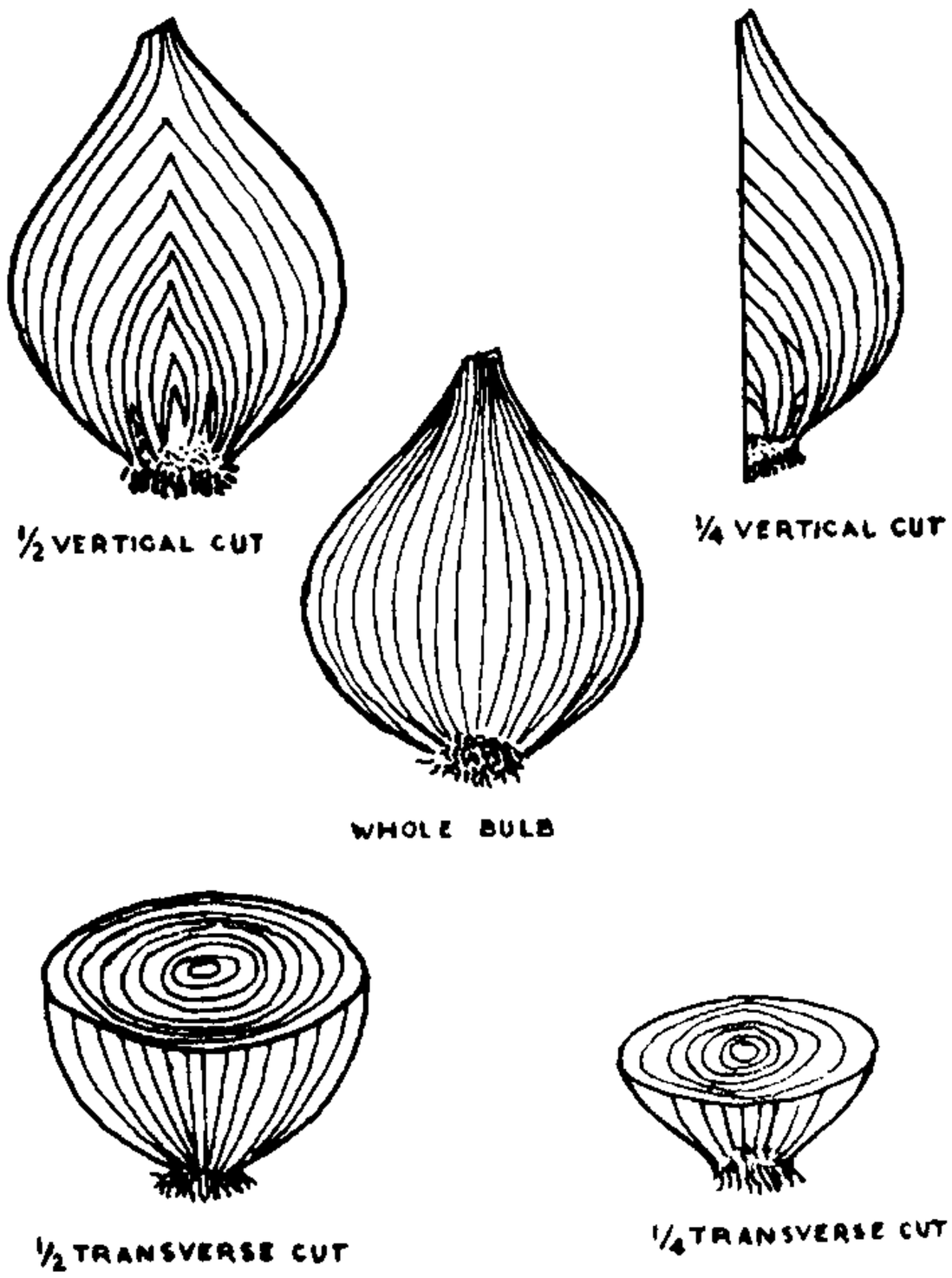

Figure 1. Different treatments of bulb-cut.

Table 1 *Effect of varying bulb-cuts on seed yield and its attributes of onion variety Pusa Red*

Cut treatment (C)	Plant height (cm)	Number of scapes per plant	Number of umbels per plant	Number of umbels per plot	Seed weight per plant (g)	Seed weight per plot (g)	Seed weight per hectare (kg)	Net profit per hectare (Rs.)
C_1 (whole bulb)	97.84	7.7	7.65^{a}	385.50^{ab}	13.25^{ab}	692.5^{a}	512.96^{a}	9745.87^{a}
C_2 ($\frac{1}{2}$ Vertical cut)	94.43	5.9	5.25^{bc}	306.25^{c}	10.50^{b}	592.5^{b}	438.88^{b}	9023.65^{a}
C_3 ($\frac{1}{4}$ Vertical cut	92.53	5.8	4.70^{c}	170.00	10.0^{b}	348.75	258.33	4356.97
C_4 ($\frac{1}{2}$ transverse cut	93.82	8.2	8.50^{a}	399.50^{a}	15.25^{a}	710.0^{a}	525.92^{a}	10137.45^{a}
C_5 ($\frac{1}{4}$ transverse cut	99.49	7.2	7.35^{ab}	399.50^{bc}	11.75^{a}	642.5^{ab}	475.92^{ab}	8634.67^{a}
Significant		–	*	**	**	**	**	**
C.D. at $P = 0.05$		NS	2.28	56.96	3.67	79.61	58.97	1768.90

(a), (b), (c) = Mean followed by common letter did not differ significantly at $P = 0.05$; * = Significant at $P = 0.05$; ** = Significant at $P = 0.01$; NS = Non significant

transverse-cut, as well as in $\frac{1}{4}$ transverse-cut and $\frac{1}{2}$ vertical-cut.

Greater number of umbels per plant observed in the treatments of transverse-cut and in whole bulb may be due to the greater number of scapes recorded in these treatments as compared to vertical-cut treatments.

Significant variation in the weight of seed per plant, per plot and per hectare was observed under different treatments. Maximum seed weight per plant, per plot and per hectare was recorded in $\frac{1}{2}$ transverse-cut which was significantly better than the vertical cuts but it did not differ significantly from whole bulb and quarter transverse-cut treatment. Although vertical-cut treatments did not differ significantly from each other as regards seed weight per plant, the seed weight per plot and per hectare was significantly greater in $\frac{1}{2}$ vertical-cut treatment than $\frac{1}{4}$ vertical cut. However, both these characters were not found significant in $\frac{1}{2}$ vertical-cut and $\frac{1}{4}$ transverse-cut treatment.

The present results for seed yield in $\frac{1}{2}$ transverse-cut and whole bulb agree with the findings of Singh *et al*[1]. The maximum seed yield obtained with $\frac{1}{2}$ transverse-cut in this study also agrees closely with the results of Shrivastava and Adhikari [2].

Economics of the various treatments indicates that maximum profits were obtained with $\frac{1}{2}$ transverse-cut-plantings. However, 50% of the initial cost of bulbs can be saved by use of bulbs cut vertically in two equal pieces for planting without any marked loss in the net profit.

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SPINNING APPARATUS OF SILK WORM LARVAE *BOMBYX MORI* L THE SPINNERET

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SILK is the yarn of life extruded in continuous filamentous form by the silk worms. The solid bave is spun by the drawing action of the spinneret caused by the movement of the head of the larvae[1-3].

Bivoltine silk worms (NB_4D_2) reared on the mulberry leaves were utilized for the present study. The spinneret along with labium and anterior silk glands were dissected out. Whole mounts were prepared on a cavity slide and detailed morphological study was carried out using a Leitz microscope. A calibrated occular micrometer was used for the measurement.

The head of *Bombyx mori* larvae is hypognathous.