SUMMARY

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The present investigation entitled "Effect of seed rate and sowing time on the production of sets for kharif onion crop" was conducted at the Research Farm of the Department of Vegetable Crops, CCS Haryana Agricultural University, Hisar, during the year 2000-2001 to achieve the following objectives:

(1) To see the effect of different seed rates on the production of onion sets

(2) To see the effect of different sowing time on the production of onion sets

Experiment I: Effect of different seed rates on the production of onion sets. In this experiment, there were nine seed rates (5.0, 7.5, 10.0, 12.5, 15.0, 17.5, 22.5, and 25.0 g/sq.m).

Experiment II: Effect of different sowing time on the production of onion sets. This experiment includes eight sowing dates viz. 1st December, 11th December, 21st December, 31st December, 10th January, 20th January, 30th January and 10th February.

In both the experiments, observations were recorded on periodical plant height, foliage weight, bulb weight, bulb diameter and ratio of bulb to total biomass and final yield of sets in different grades.

Critical findings obtained from the present investigations conducted during 2000-2001 are summarized and concluded below:

1. Differences in plant height due to seed rates were not significant except for the observation recorded on 18th March. Height of plants increased up to 30th March in all the sowing dates, later it slightly decreased. Plant height decreased with delay in sowing and minimum plant height was recorded in the10th February sowing followed by 30th January sowing.

2. Foliage weight increased with increase in crop duration up to 12th April for all the seed rates. Foliage weight per plant decreased with increase in seed rates. It was highest where seed rate was 5.0 g/sq.m. and lowest where seed rate was 25.0 g/sq.m. Foliage weight decreased with delay in sowing and it was lowest in the10th February sowing on all the dates of observation. In December sown crop, foliage weight increased up to 30th March while in January and February sown crop it showed increment up to 22nd April.

3. Bulb weight decreased with increase in seed rate and it was lowest where seed rate was 25.0 g/sq.m. and highest where seed rate was 5.0 g/sq.m. on all the four dates of observation. On the other hand, bulb weight in all the treatments increased with increase in duration of the crop. Bulb weight in 1st and 11th December sowing was higher than other sowing dates on all the four dates of observation. Sowing on 10th February recorded lowest bulb weight on all the four dates of observation followed by 30th and 20th January sowings.

4. Bulb diameter decreased with increase in seed rates. On the other hand, bulb diameter increased with increase in duration of the crop in all the treatments but decreased with delay in sowings.

5. Ratio of bulb to total biomass decreased with increase in seed rates. Ratio of bulb to total biomass decreased with successive delay in sowing and it was lowest in 10th February on all the four dates of observation. Ratio of bulb to total biomass increased with increase in crop duration.

6. Total number of sets obtained from different seed rates ranged from 254.66/sq.m. (5.0 g) to 311.0/sq.m. (25.0 g). Total number of sets ranged from 140.33/sq.m. in 10th February sowing to 347.33/sq.m. in 31st December sowing. Total number of sets recorded from 10th February sowing was significantly lower than that of all other sowing dates. Proportion (on number basis) of up to 2 g size sets increased while that of >5-10 g and >10 g size sets decreased with delay in sowing as well as increase in seed rate.

7. Highest total bulb yield was 1749.33 g/sq.m. where seed rate was 5.0 g/sq.m. and lowest 1213.98 g/sq.m. where seed rate was 22.5 g/sq.m.

Proportion (on weight basis) of up to 2 g size sets increased while that of >5-10 g and > 10 g size sets and total yield decreased with increase in seed rate or delay in sowing.

Maximum yield of >2-10 g (medium size) size sets was obtained where seed rate was 7.5 g/sq.m. was used for raising of sets. Sowing on 1st December recorded highest yield of medium size sets.

It may be concluded that for obtaining higher yield of medium size onion sets (>2-10 g), optimum seed rate is 7.5 g/sq.m. and optimum sowing time is 1st fortnight of December.