

CHAPTER V

DISCUSSION

D I S C U S S I O N

Good pod is essential for succes in vegetable growing . Even the most efficient and careful grower can not achieve success with poor pods , good pods are vital , free from disease , pest infection and true to the type . Several aboitic factors like timely agronomic opration and after care have pronounced effect on the yield and quality of pods.

Abiotic factors like temprature , humidity and distribution of rain fall during the vegetative and reproductive phases are conducive towards quqlity pod production . If stem elongation is taken as the measure of growth , it will be found that in most instances the rate of growth during the night will exceed that of the day provided the tempeature does not fall too low. Thus, the higher minimum temperature during growth period also encourages the growth during night (Millar , 1938) . The greater elongation of stem during the night is apparently due to reduction in transpiration and likely better moisture availability. The rate and duration of potosynthis increasing with the availability of sunshine hours for longer time (due to clear weather) , with higher temperature during the day and moisture in the soil , which in term increase the leaf resulting into increased absorption of miniral element from the soil . As such , Sharma (1970) , Gill and singh (1973) and

Palaniswami and Ramaswami (1987) work on Okra and other vegetable crops pointed out that weather condition showed greater influence on growth and yield of crops.

The findings presented in previous chapter indicate that various herbicides level and sowing dates influenced growth, yield and quality of okra crop. therefore in this chapter an attempt has been made to discuss the results of the experiments through the assistance of accessible informations in order to draw sound clarification of the aim with which the present investigation was under taken.

I. HERBICIDES

(A) EFFECT OF HERBICIDES ON GROWTH

Ironically dual 1.00 kg ha⁻¹ + one hand weeding has been superior to other source of herbicides, for increase in height of the plant (Fig.4). The increase in the growth may be due to easy availability of mineral elements to the crop from the soil. In experiment, the maximum weed competition from crop was in the dual 1.00 kg ha⁻¹ and it was minimum in the basal 0.50 kg ha⁻¹. The useful effect of herbicides might be due to sparsely placed plant which are supposed to have lesser competition than amount of herbicides are generally gives better performance due to adequate availability of nutrients and moisture, the major key responsible for the better performance of a crop.

Herbicides enhanced the growth with maximum

no. of leaf . Even herbicides provide the major opportunity for profile creation of the plant . Irrespective the Dual 1.00 kg ha⁻¹ + 1 hand weeding reckoned same effect . Increased branching and no. of leaf were recored maximum as weed free plot in early stage at latter stage of growth , dual 1.00 kg ha⁻¹ give good result at 30 , 60 , 90 DAS . The minimum no.of branches and no.of leaves were noted in weedy plot at all the dates of observation during both the years (Fig.8 & 10).

The highest fresh weight of leaves and plant was noted at T₃ (weed free plot) in 1994 and 1995 years. The minimum fresh weight of leaves and plant was recorted with T₁ (weedy plot) at all the dates during both the years . The fresh weight of leaf and plant increased significantly at all the dates during both years of observation (Fig.19,11). The dry weight of leaves and plant increased significantly at all the dates during the experiment . The minimum dry weighted of leaves and plant were noted in the T₁ (weedy plot) in 1994 & 1995 . The maximum dry weight of leaves and plant were noted in the T₃ (weed free) plot.

In the experiment use of herbicides gave excellent result with comparision to t₁ plot , Dual 1.00 kg ha⁻¹ with one hand weeding gave good responce on the fresh weight and dry weight of leaves and same responce was noted regarding leaf area plant (Fig. 20 & 13).

(B) EFFECT OF HERBICIDES ON FLOWERING AND YIELD COMPONENTS

The relation with appearance of node of first flower plant⁻¹ at different dose of herbicides had high influence and exhibited (Fig. 22), the maximum number of node in relation to first flower appearance as it provides the easy availability of nutrient, water etc., which in turn increased in absorption and utilization the level of herbicides received significant result. In the above discussion the maximum no. of flower appear recored in dual application in combination of T₇ and minimum was noted bsalin application in combination of T₈, this character has been also reported by Arora et. al. (1991).

It has been glanced that no. of pods plant⁻¹ increased with diffrent doses of herbicides as availity of nutrient increase with exheberted growth habit (Fig. 30). The no. of pods plant⁻¹ fresh weight and dry weight of pods plant⁻¹ had significant responce. The maximum no. of pods, dry and fresh weight of pods was recorded in combination of T₃ which is weed free plot. In case of herbicides the maximum no. of pods, dry and fresh weight of pods plant⁻¹ was noted in T₇ which is dual 1.00 kg ha⁻¹ + 1 hand weeding. The minimum no.of pods and dry and fresh weight of pods was recored in T₈ combination i.c., bsalin .50 kg ha⁻¹ plot (Fig 29 & 32). The above findings are in conrformity with findings of Jeyraman and Balsubramanim (1988).

The yield of pods as influenced by diffrent

combination of herbicides showed significant difference with each other. The maximum yield was noted in T₃. In case of application of herbicides the Dual 1.00 kg ha⁻¹ + 1 hand weeding gave good response in both the years and minimum in case of Basalin .50 kg ha⁻¹ (Fig 41).

The fresh weight of weed sqm.⁻¹ was recorded in the present investigation, it was more where rain fall came soon and maximum was taken under the combination of T₁ (Fig 36).

the weeding intensity of weeds were as influenced by different treatment combination of the dual 1.00 kg ha⁻¹ was gave good response (Fig 33).

(C) EFFECT OF HERBICIDES ON QUALITY CHARACTER

Regarding the protein of pod on dry weight basis ,it is discerned from observation that herbicides of dual 1.00 kg ha⁻¹ + 1 hand weeding provided better accumulation of protein in the pods then other source of herbicides , in the relation crude fibre content of the pods data make it clear that crude fibre content of pods exhibited the same trends as was observe with protein accumulation in the pods (Fig 49).

In the relation of Vit. A and cabbohydrate content of the pods exhibited the same trends as were observed with protein and crude fibre accimulation in the pods (Fig 49 & 50).

Abort from the above discussion made based exclusively on results obtained during the experiment regarding

various parameters of okra plant , it has been well established through various investigation that the okra plant respond well to herbicides and there was a significant increase in the rate of growth as well height of the plant , no. of branches plant⁻¹ etc.

II. SOWING DATES

(A) EFFECT OF SOWING DATES ON GROWTH

It is evident from the result present in previous chapter that growth characters , viz. plant height , no. of branches and leaves plant⁻¹ , fresh weight of leaves and plant , dry weight of leaves and plant (Fig 5 & 7) significantly responded to sowing dates and there was a consistent increase in the rate of growth (Fig 11 ,13 & 17,19). The increase in vegetative growth was greatly affected by sowing dates because it is associated with the efficiency of crop as an assimilator of carbon dioxide and builder of plant substances. The crop requires a long warm growing season. The crop is susceptible to frost and will not thrive even if there is continuous cold spell (Kamal nathan et. al. , 1970).

The maximum plant height increased up to 30th June with a significant decrease in delayed sowing . The better established seeding from the cultivar sowing were capable of expressing superior growth responses decrease in plant height in the later sowing may be due to lowering of temperature are in

accordance with that Randhawa (1967) and Gupta et.al. (1981).

The maximum number of branches plant⁻¹ also increased significantly as the 15th June and 30th June sowing decreased in later sowing date 15th July . The increase in the number of branches were also noted 30 , 60 and 90 DAS in the both years , and give significantly responce (Fig 7). This may be due to better vegetative growth and more number of nodes and internodes these findings are in accordance with that of Zanin st. al. (1980).

The number of leaves & leaves area plant⁻¹ also increased significantly with the 15th June and 30th June sowing dates it has been increasing at all the stages of growth in both years but best responce was taken by 30th June sowing (Fig 15). The more number of leaves per plant & leaves area as influnced by sowing dates were due to more vegetative growth , these findings are in line with findings of Stanev et. al.(1983) and Singh et. al. (1989).

The fresh weight of leaves and plant significantly enhanced with increasing by diffrent sowing dates . This is due to more photosynthesis and vigorous growth of plant (Fig 11 & 17). The result of present investigation are in conformity with report of Staner et. al.(1983) and Trembely and Senecal (1988). and similor result was found in the fresh weight of weed sqm.(Fig 33).

The dry weight of leaves and plant significantly response the two sowing dates 15th June and 30th June sowing .The different sowing date markedly influenced the dry weight of leaves and plant at 90 DAS (Fig 13), as well as found in the dry weight of weed sqm.(Fig 34). This result has been supported by Shehate and Farrage (1983) and Thembley and Senecal (1988).

(B) EFFECT OF SOWING DATES ON FLOWERING AND YIELD COMPONENTS

The relation with appearance of first node flower by sowing dates highly influence and exhibited the maximum number of node in relation to first flower appearance . As if proliferate easing and availability of nutrients , water etc. which in term increased in absorption and utilization . The minimum number and days to first flower appearance were recorded in 30th June sowing date , which may be due to attainment of optimum day length cultivar than those shown earlier as temperature and light at a vegetative meristem and reproductive meristem (Fig.21 & 22).

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The number of pods plant increased up to 30th June sowing , it increased in two sowing dates 15th June and 30th June and decrease in 15th July and significantly response gave (Fig 27). In delayed sowing which may be lower due to dry matter accumulation and unfavourable weather condition for growth development similar finding were reported by the Grewalet. al.

The fresh weight and dry weight of pods bed and total yield of pods showed significant response . The maximum fresh weight and dry weight of pods and yield of pods weight were noted 30th June sowing in 1994 (Fig 28 & 34),but maximum fresh weighted of pods was taken in 1995 the 15 th July sowing . In 1995 the maximum dry and fresh weight of pod plant taken also 30th June sowing and it were followed up to 15th July and 15th June . The increaseing in fresh weight and dry weight and yield of pods by increasing diffrent sowing dates also recored by Kadam et. al. (1985) . It might have been because sowing dates has been conductive to enhanced matabolic activities withen the plant , bringing about better growth and development and yield poticularly in the number of pods .

(C) EFFECT OF SOWING DATES ON QUALITY CHARACTERS

The sowing dates of okra crops has significantly decreased the crude fibre of pods . The maximum crude fibre content were noted under 30th June where as the minimum crude fibre percentage were noted with 15th June (Fig 44). The above results are in agreement with the findings of in Mani and Ramananhan (1981) . This reducted and with formation of protein and carbohydrate and regulation of water conditions with the cells which resulted in incresed the percentage of carbohydrate and protein and decrease the crude fibre content in the fruits (Fig 43). In case of fertilization sowing dates were found much

conductive to enhanced the matabolic activities within the plant bringing about better quality of pods.

In present study protein is showed significantly increasing in 15th July and 30th June sowing dates during both years . The protein contant increase in above plant part and translocation which also helps in the control and up take of N which is nesearey part of protein . The above result are comfermity with the finders of Ison (1980).

From the discussion it has been thus become clear that physiological and biological phenomenon with reference to levels , sowing dates and herbicides single or alone as well as in combination made evident that they had played a vital role in influencing the growth the relation with vegetative growth ,flowering , fruiting and yields of fruits in this experiment.