

Performance of sesamum (*Sesamum indicum* L.) genotype to varying plant densities

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ABSTRACT

A field experiment was conducted at College of Agriculture Farm, Latur (Maharashtra) during *kharif* of 2004-2005 on sesamum (*Sesamum indicum* L.) to analyze the growth and yield of sesame in relation to spacing (30 x 10 cm, 30 x 15 cm, 45 x 10 cm, 45 x 15 cm, 60 x 10 cm, 60 x 15 cm) and genotype (JLT 7 (Tapi), Gujarat - 1, Local check). The results revealed that the 30 x 15 cm (710.84 kg ha⁻¹) spacing produced higher grain yield and it was found significantly superior over rest of the spacing and genotype JLT 7 recorded highest grain yield (648.74 kg/ha) found significantly superior over Gujarat 1 and local check.

Key words : Sesamum, Spacing, Varieties.

INTRODUCTION

Sesamum indicum L. popularly known as sesame is one of the most important oilseed crops produced in India. It is an important *kharif* crop mainly cultivated in Rajasthan, Maharashtra, Gujarat, M. P., Karnataka, U. P., West Bengal, Orissa and Punjab. India is the largest producer of sesamum in the world accounting to 30 per cent of the world out put. It is rich in oil content (46.52 per cent) and protein (26.25 per cent). Although large number of varieties have been released to suit different agro-climatic regions of India. It was observed that the average yield of sesamum crop was low. Yield variation in a crop are mostly brought about the genetic make up growing season and population density. To find out high yielding variety and number of plants per unit area becomes an important management practice in order to get maximum yield. No studies have been reported on the detailed genotypes in relation to spacing. The present paper deals with performance of sesamum genotypes to varying plant densities.

MATERIALS AND METHODS

A field experiment was conducted during the *kharif* season of 2004-2005 at the Agriculture College Farm, Latur (Maharashtra) in split plot design replicated thrice with three genotypes (JLT 7, Gujarati, Local check) and spacing (30 x 10 cm, 30 x 15 cm, 45 x 10 cm, 45 x 15 cm, 60 x 10 cm, 60 x 15 cm). The soil of experimental field was clayey with low available nitrogen, medium in available 50 kg N and 25kg P₂O₅ per ha. Out of which half N and complete dose of P₂O₅ was given at the time of sowing. The remaining half dose of nitrogen was given

at 30 days after sowing, other operations were done as per crop recommendations. The growth and yield attributes, yield were recorded timely.

RESULTS AND DISCUSSION

Growth and yield attributes:

The data (Table 1) indicated that the narrow spacing (30 x 10 cm) produced taller plants than other treatments of spacing indicating competition. Rao *et al.* (1985) reported that narrow spacing produced tallest sesamum plants. During advanced growth stages of crop sesamum genotype JLT - 7 recorded leading performance in height over Gujarat - 1 and local check. This might be due to the varietal differences in growth.

The wider spacing 45 x 15 cm produced the maximum number of braches per plant and was at par with the spacing 60 x 15 cm. Three spacings were found to be significantly effective in increasing branching pattern than the narrow row spacings, 30 x 10 cm, 30 x 15cm, 45 x 10 cm, and also 60 x 15 cm. These results were also in conformity with the results reported by Tilakraj *et al.* (1971) and Narayan and Narayanan (1987). Genotype JLT - 7 was found to be significantly superior in recording more number of branches per plant over Gujarat -1 and local check.

The number of capsules progressively increased with increasing spacing. The wider spacing *i.e.* 45 x 15 cm recorded more mean number of capsules per plant and was at par with 60 x 15 cm. These two spacings were found to be significantly effective in increasing capsules than the narrow row spacings 30 x 10 cm, 30 x 15cm, 45 x 10 cm and 60 x 10cm. Similar results were also reported

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