Effect of sulphur on growth and yield of groundnut (*Arachis hypogaea*)

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An experiment was conducted at Akola during the rainy season 1991 to study the effect of sulphur on growth and yield of groundnut (*Arachis hypogaea* L.).

The experiment was laid out in randomized block design with 4 replications. The treatments comprised 5 levels of S, viz. 0, 15, 30, 45 and 60 kg/ha. The sowing of groundnut 'JL 24' was done on 10 July in rows 30 cm apart. The S was applied in rows before sowing through elemental S as per treatments.

The soil of the experimental plot was clayey in nature, containing 0.42% organic carbon, 33 kg/ha available P<sub>2</sub>O<sub>5</sub>, 307 kg/ha available K<sub>2</sub>O and sulphur 11 ppm. The crop was uniformly fertilized with N and P @ 25 and 50 kg/ha respectively through urea and diammonium phosphate. Soil pH was 7.8. Total rainfall received during the crop season was 429.4 mm in 26 rainy days.

The data on dry-pod yield revealed that S application positively influenced the yield (Table 1). Maximum pod yield (12.44 q/ha) was obtained with 30 kg S/ha. It was significantly superior to the control and 15 kg S/ha and was on a par with rest of the treatments. Sulphur application @ 45 and 60 kg/ha yielded significantly more than the control, but was on a par with 15 and 30 kg S/ha. Similar results were reported by Badiger et al. (1982), Tandon (1986), Snehi Dwivedi (1986) and Pasricha et al. (1987) reported similar trend for haulm yield. Further, it was noticed that the values of yield-contributing characters and oil yield were more with S application, but the differences due to treatments were not significant. Thus, application of 30 kg S/ha to rainy-season groundnut was more beneficial.

### Table 1. Yield and yield attributes of groundnut as influenced by sulphur application

<table>
<thead>
<tr>
<th>S (kg/ha)</th>
<th>Dry-pod yield (q/ha)</th>
<th>Haulm yield (q/ha)</th>
<th>Pods/ plant</th>
<th>Pod weight/plant (g)</th>
<th>100-seed weight (g)</th>
<th>Oil content (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>6.94</td>
<td>36.45</td>
<td>7.8</td>
<td>4.75</td>
<td>30.12</td>
<td>45.3</td>
</tr>
<tr>
<td>15</td>
<td>8.96</td>
<td>37.61</td>
<td>8.4</td>
<td>5.25</td>
<td>30.00</td>
<td>45.8</td>
</tr>
<tr>
<td>30</td>
<td>12.44</td>
<td>54.39</td>
<td>9.0</td>
<td>6.00</td>
<td>34.12</td>
<td>47.9</td>
</tr>
<tr>
<td>45</td>
<td>10.70</td>
<td>43.98</td>
<td>9.6</td>
<td>5.57</td>
<td>35.25</td>
<td>38.9</td>
</tr>
<tr>
<td>60</td>
<td>11.22</td>
<td>50.92</td>
<td>8.7</td>
<td>5.00</td>
<td>29.62</td>
<td>45.1</td>
</tr>
<tr>
<td>CD (P = 0.05)</td>
<td>3.26</td>
<td>13.54</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
REFERENCES

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Response of promising groundnut (Arachis hypogaea) genotypes to fertilizer levels during summer

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Dhar (1981) pointed out that the improved varieties of a crop may require more liberal manurial treatment than that grown ordinarily. The information on fertilizer requirement of the newly evolved genotypes of summer groundnut (Arachis hypogaea L.) is inadequate, the present study was undertaken to find out fertilizer requirement of the some promising genotypes.

The field experiment was conducted during summer 1990 in a factorial randomized block design with 3 replications. The soil was medium black containing 250 kg/ha available N, 16 kg/ha P₂O₅ and 490 kg/ha K₂O, with pH 7.9. There were 12 treatment combinations, consisting of 4 genotypes and 3 fertilizer levels as in Table 1. The crop was sown on 27 January 1990 at a spacing of 30 cm × 10 cm by dibbling method. The fertilizer as per treatments was applied at the time of sowing through urea, single superphosphate and muriate of potash. A recommended agronomic package of practices and plant-protection measures were adopted throughout the growth period of crop. The crop was harvested at proper maturity. Data on pod and haulm yields and yield-attributing characters were recorded.

Among the genotypes tested, ‘Sel. 7-9-5’ gave significantly highest pod yield than ‘ICGV 86309’ and ‘J 19’, however, it was on a par with ‘ICGV 87189’. Yield difference between ‘ICGV 86309’ and ‘J 19’ were non-significant. The higher yield given by genotype ‘Sel. 7-9-5’ was owing to higher values of yield-attributing characters, viz. number of pods/plant, weight of pod/plant and 100-pod weight. For haulm yield, genotypes ‘Sel. 7-9-5’, ‘ICGV 86309’ and ‘J 19’ being at par recorded significantly more yield than ‘ICGV 87189’. Difference