Effect of biofertilizers and their combinations with nitrogen fertilizer on growth, yield and quality of rose (*Rosa damascene* L.)

C.K. CHAUDHARI, R.G. JADAV AND M.M. MASU

**ABSTRACT**

An experiment was carried out to study the effect of biofertilizers and their combination with nitrogen fertilizer on growth, yield and quality of rose (*Rosa damascene* L.) at Anand during the year 2007-08. The treatments comprised of three levels of nitrogen (0, 25, 50 g/plant) with *Azotobacter* (1 ml/plant) and *Azospirillum* (1 ml/plant) alone as well as their combinations and compared with control (RD). The application of 50 g N/plant + *Azotobacter* and *Azospirillum* each @ 1 ml/plant (T9) produced significantly maximum plant height, number of branches, plant spread, stem diameter, diameter of flower, number of petals, weight of individual flower and yield of flowers as compared to control. The treatment of 25 g N/plant + *Azotobacter* and *Azospirillum* each @ 1 ml/plant (T8) produced maximum leaf area and initiation of first flower than control and remained at par with treatment 50 g N/plant + *Azotobacter* and *Azospirillum* each @ 1 ml/plant (T9) While, 0 g N/plant + *Azospirillum* 1 ml/plant (T5) produced maximum shelf life of flower. The treatment T9 also recorded the highest net realization (2, 99,139 Rs./ha) and cost benefit ratio (1:4.55).

**Key words**: R.D. Recommended dose, Biofertilizer, Rose

**MATERIALS AND METHODS**

An experiment was conducted to study the effect of biofertilizers and their combination with nitrogen fertilizer on growth, yield and quality of Rose (*Rosa damascene* L.) during the year 2007-08 in Department of Horticulture, B.A. College of Agriculture, Anand Agricultural University, Anand. Five month old plants of rose having uniform growth and vigour were selected for the study, which were planted at 1.5 x 0.9 m spacing. The soil of the experimental site was sandy loam, locally known as “Goradu”. The soil was well drained and it responded well to irrigation and manuring, and was reasonably suitable for Deshi red rose cultivation. The treatments consisted of three levels of nitrogen (0, 25 and 50 g/plant) with *Azotobacter* and *Azospirillum* each @ 1 ml/plant and their combinations along with control viz., T1: 0gN/plant + *Azotobacter* 1ml/plant, T2: 25g N / plant + *Azotobacter* 1 ml / plant, T3: 50g N plant + *Azotobacter* 1 ml / plant, T4: 0g N / plant + *Azospirillum* 1 ml /plant, T5: 25g N / plant + *Azospirillum* 1 ml / plant, T6: 50g N / plant + *Azospirillum* 1 ml / plant, T7: 0g N /plant + *Azobacter* 1ml /plant + *Azospirillum* 1 ml / plant, T8: 25g N / plant + *Azobacter* 1 ml / plant + *Azospirillum* 1 ml / plant, T9: 50g N / plant + *Azobacter* 1 ml / plant + *Azospirillum* 1 ml / plant, T10: Control (RDF 50:50:0g NPK /plant). Biofertilizers i.e. *Azotobacter*, *Azospirillum* and combination of *Azotobacter* and *Azospirillum* were...