Priming with potassium nitrate positively influenced seedling development of gladiolus

The effect of different priming concentrations of KNO_3 (1, 2, 3, 4, 5 and 0%) on seed germination and seedling development of gladiolus (

Gladiolus alatus

) was studied under controlled conditions in Pakistan. Seeds were either dipped in different concentrations (1 to 5%) of KNO_3 solution, placed in distilled water for duration of 48 hours or untreated (control). For each treatment 40 seeds were used. All seeds were placed in the growth chamber at a temperature of 20 ± 2°C for germination. Days taken for 50% germination increased with increase in KNO_3 concentration from 1% to 4%. Best germination rate of 92% was achieved in distilled water treatment followed by 80% for 1% KNO_3 and 70% for 2% KNO_3. Present results suggested that lower concentration of KNO_3 like 0,2% to 1% should be tested for priming studies of gladiolus. An effect of priming with KNO_3 on seedling development was found. Seedling length increased with increase in concentration from 1% to 3% KNO_3 solution. Tallest plants (14 cm) were observed with 3% potassium nitrate followed by 13,5 cm for 2% potassium nitrate. Analysis of variance revealed that there was a significant effect of different concentrations of KNO_3 on bulb weight of gladiolus seedlings. Maximum bulb weight of 0,64 g was found for 3% KNO_3 followed by 0,39 g for 4% KNO_3 and 0,21 g for 2% KNO_3. There was a positive correlation between seedling length and bulb weight as shown in figure 1.

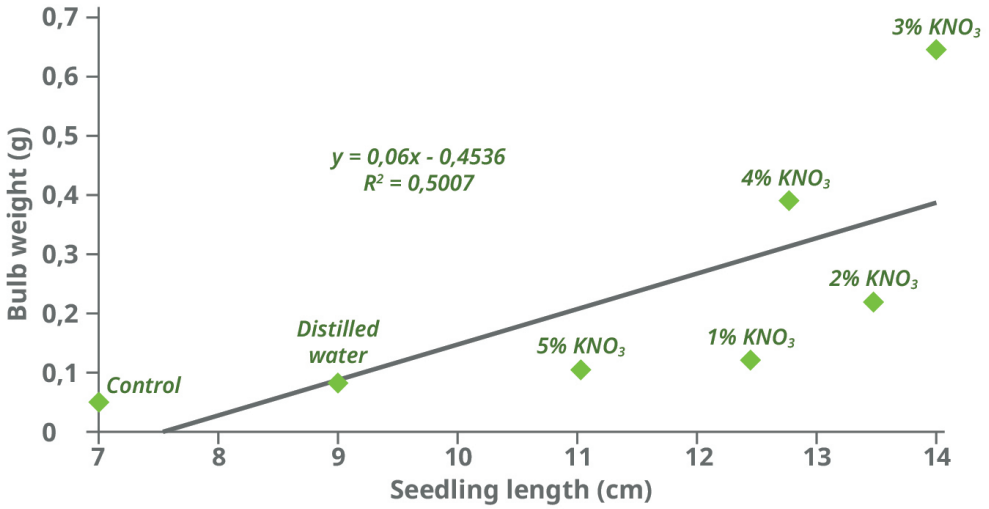

Figure 1. Relationship between seedling length and bulb weight in gladiolus as affected by seed priming treatments.