

Abstract

Cutflower production and marketing is partly challenged by lack of new, exciting and improved varieties to satisfy customer needs of a different flower. Ranunculus (*Ranunculus asiaticus* L.) is a bulbous plant that originated in the Mediterranean basin region where growth and development take place optimally in cool, moist winter season. The extent of dormancy breaking and growth of this flower in tropical conditions is not known. Consequently, the present research studied the effects of shade and gibberellic acid (GA₃) in breaking dormancy and reducing high light intensity and high temperature so as to assure optimal growth of *R. asiaticus* under tropical conditions. The fixed factors were: four GA₃ levels (0, 100, 500 and 1500 mg/L) and three shade intensities (0%, 40% and 80% shade). The experiment was laid out in split plots arranged in randomised complete block design, replicated three times and repeated in two seasons. Tuberos roots were soaked in the respective GA₃ concentrations for 10 minutes followed by planting under shaded plots. Data were recorded from sprouting through tuberous root formation stages. Season 1 (June to November 2006) was characterised by cool temperatures, whereas season 2 (December 2006 to April 2007) was characterised by warm temperatures. The 80% shade promoted significantly longer stems. Nevertheless, early flowering, highest quality flower stem diameter, flower bud initiation, flower head diameter and tuberous root fresh weight resulted for 40% shade. These quality parameters were highest in tuberous roots that had been soaked in 100 mg/L GA₃ pre-plant. Therefore, growers in tropical high altitudes should use 80%, 40% and 0% shade in hot, warm and cool seasons, respectively. Pre-soaking of the tuberous roots in 100 to 500 mg/L GA₃ is optional, depending on the desired growth magnitude and speed desired.