

Abstract:

Peat quality can have profound effects on the growth and quality during production of pot plants. Changes in pH are suspected as being one of the main reasons. An experiment was set up with potted roses. The objectives of the experiment were: i) to record pH responses during the production of potted roses as affected by 2 types of peat with different densities, two liming rates, two sources of raw water and two ammonium percentages in the applied nutrient solution. ii) to determine the effect of pH responses on plant growth and postharvest quality.

The postproduction index used by The Poulsen Roses was used for evaluating the post harvest quality. This index ranges from 0 to 9.99. A satisfactory plant should have a postproduction index of at least 7.5 on day 18, 22 and 28 of the postharvest period. The parameters recorded are: number of open and damaged flowers, of healthy and damaged flower buds, of damaged leaves and incidence of damage by *Botrytis*, mildew or pests. pH in the root zone varied from 3.5 to 6.9 between treatments at the end of the production period. pH also varied during the production period within each treatment. Generally pH dropped between 1st and 2nd cut back and increased after 2nd cut back to the end of production. Plants from treatments resulting in a high pH (> 6.7) had fewer flower bearing shoots and fewer buds at the end of production. The production period also increased. Some treatments did not pass the post production test at day 18, 22 or 28 (index < 7.5). These treatments were characterised by having a low or high pH in the rootzone at the end of the production period. The poorer plant quality at the end of production in treatments resulting in high pH in the root zone, may have negatively influenced the postproduction index. There was no clear correlation between plant quality at the end of production and reduced postproduction index at low root zone pH's.