

## Summary

In a CIAT greenhouse (Palmira, Colombia), the ecotype behavior of *Stylosanthes capitata* CIAT 1315, 1318, 1342, 1693, 1728 and the cv. Capica was observed under six different copper (Cu) concentrations in nutritive solution. This behavior was evaluated estimating dry matter (DM) production of aerial parts, roots and total plant, the Cu concentration (aerial part and root), and absorption.

A nutrient solution based on Arnon and Hoagland's (1/10) was used to simulate the acidity and the fertility of well-drained savannas on the Eastern Plains of Colombia. Six concentrations of Cu were used (0, 0.05, 0.1, 0.2, 0.4, and 0.8 ppm) with replacement of the nutrient solution every 15 days, and application of nitrogen (N) (14 ppm per week) and iron (Fe) (1 ppm) three times a week.

The DM produced by the ecotypes and cultivar under treatments of 0.2, 0.4, and 0.8 ppm Cu, was nil. Apparently, the Cu concentrations in nutrient solution were toxic, which inhibited normal development. Consequently, the statistical and comparative analyses were done only for the lowest levels of treatment: 0, 0.05, and 0.1 ppm Cu.

A differential behavior of *Stylosanthes capitata* ecotypes' response to applied Cu was observed in relation to DM production in the aerial plant part, root, and total plant. Also, there were significant differences in the concentration, and absorption of Cu by these ecotypes and the cv. Capica. The variable phenological response by ecotypes was a consequence of the existing genetic variability. The different Cu requirements of these ecotypes were evidenced by the positive response and DM produced in the aerial plant part of *S. capitata* CIAT 1693, 1728, and cv. Capica. The data suggest that the two previously mentioned ecotypes and one cultivar require Cu applications where this element limits their establishment.