

Assessing the Effects of Preemergence Herbicides on Citrus Root Growth

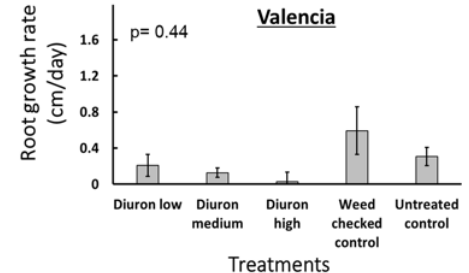
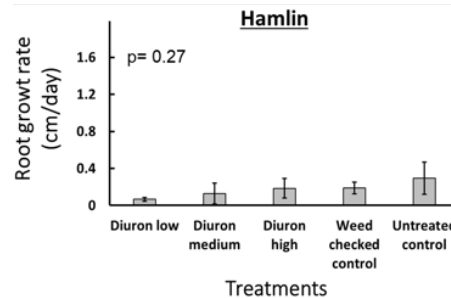
Researchers: Ramdas Kanissery, Nirmal Timilsina

Contact: Ramdas Kanissery, rkanissery@ufl.edu

UF/IFAS SWFREC

Take Home Message:

- Effects of applying preemergence herbicide, diuron, on the root growth of young 'Hamlin' and 'Valencia' citrus trees were evaluated.
- The root growth rate was assessed by measuring the total length of the roots using rhizotron imaging over a period of approximately six months.
- There was no statistically significant difference in root growth rates between the different diuron treatments and the control groups at both study locations.



Root growth rates for 'Hamlin' and 'Valencia' citrus after six months of observations from rhizotron imaging study. Data from one location is shown, same trend in the other study location. The difference in root length measured between two points in time is divided by the total days to calculate the root growth rate. Bars represent standard error (n=4), and p value is shown.

Summary: A rhizotron imaging study was conducted in southwest Florida to assess the potential effects of the widely used preemergence herbicide, diuron, on the root growth of young 'Hamlin' and 'Valencia' citrus trees. The study took place in two commercial citrus groves and involved applying diuron at three different rates (1.8, 3.6, and 7.3 kg a.i./ha) as preemergence treatment. A weed-checked control group that utilized post-emergence herbicides, as well as a non-treated control group, were also included. The treatments were

administered twice, once in the fall of 2021 and again in the spring of 2022, following a randomized complete block design with four replicates. The findings indicate that, overall, diuron application did not significantly impact the growth of citrus roots in both the 'Hamlin' and 'Valencia' cultivars in both study locations during the observed timeline.

Funding:

UF | IFAS
UNIVERSITY OF FLORIDA



National Institute of Food and Agriculture
U.S. DEPARTMENT OF AGRICULTURE