

PARTHENOLIDE AND ABSCISIC ACID SYNTHESIS IN FEVERFEW ARE CONNECTED

Jorge M. Fonseca<sup>1\*</sup>, James W. Rushing<sup>2</sup>, Nihal C. Rajapakse<sup>3</sup>, Ronald L. Thomas<sup>3</sup> and Melissa B. Riley<sup>3</sup>

The University of Arizona, Yuma Agricultural Center, 6425 W 8<sup>th</sup> Street. Yuma, AZ 85364 USA. <sup>2</sup>Clemson University. Coastal Research and Education Center. Charleston, SC. 29414-5332; <sup>3</sup>Clemson University. College of Agriculture and Life Sciences. Clemson, SC. 29634-0375.

Feverfew plants under different environmental conditions and plants and cut flowers treated with chemical agents that affect abscisic acid (ABA) synthesis were evaluated for parthenolide (PRT) and ABA. PRT levels were highest during late afternoon whereas ABA was at its maximum level during morning hours. ABA was higher in water-stressed plants whereas PRT content was higher in plants recovered from dehydration. ABA inhibitors such as norflurazon and naproxen reduced PRT concentration in cut flowers and in two-month old plants. Application of 2,4-D, a promoter of ABA synthesis, to potted plants resulted in a 2.5 fold increase in PRT levels. Our results indicate that PRT synthesis in feverfew is connected to the ABA pathway.