ABIOTIC STRESS IMPACT ON REPRODUCTIVE COMPONENTS OF 1-MCP TREATED COTTON PLANTS Vladimir A. da Costa J. Tom Cothren Texas A&M University College Station, TX

<u>Abstract</u>

The ethylene antagonist 1-methylcyclopropene (1-MCP) is applied widely in horticultural crops to counter detrimental effects of ethylene on plants. Cotton (*Gossypium hirsutum* L.) fruit loss is enhanced by increased ethylene levels in response to water stress. The objective of this study was to evaluate the treatment effects of 1-MCP on cotton fruit set of plants experiencing an imposed water stress. A greenhouse study was conducted in 2008 and 2009 at the Borlaug Center, Texas A&M University, as a 2x2 factorial with five replications. When plants averaged 16 nodes (mid-bloom), they were exposed to two rates of 1-MCP (0, and 1,000 ppb) while placed inside sealed plastic tents during a fourteen-hour overnight. Plants were then subjected to two water regimes (well-watered and water-stressed). The application of 1-MCP to counter water stress stimulated the vegetative and reproductive growth of cotton plant canopies. Additional investigations with 1-MCP are necessary to more completely evaluate its potential to counter detrimental impacts of water stress.