

### **Abstract:**

The key components affecting postharvest vase life in Big Bend bluebonnet (*Lupinus havardii* Wats.) are flower abscission and flower senescence which appear to be related to sensitivity of the germplasm to ethylene.

We have used recurrent phenotypic breeding/selection techniques, including traits of low shattering and long display life of flowers on the racemes, to develop several blue, white, and pink-colored lines and cultivars of bluebonnet with reduced ethylene sensitivity and extended vase life. The relative response of the germplasm to ethylene was evaluated following treatment with 2-chloroethylphosphonic acid in the holding solution. Among genotypes tested, the advanced white-flowered line (WS02) exhibited the least sensitivity to ethylene, while the blue cultivar 'Texas Sapphire' was found to be the most sensitive. The improved breeding lines show very little or no abscission of flowers in response to ethylene. These results clearly establish the important role of selection and breeding strategies in the improvement of bluebonnet as a cut flower.