

**EFFECT OF HERBICIDE PROGRAMS ON SEED RAIN IN LIBERTY LINK AND ROUNDUP READY
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With the evolution of glyphosate-resistant weed species worldwide, new technology such as the Liberty Link cotton system are being utilized by producers to help manage resistance and further sustainable agriculture. The objective of this research was to evaluate the effect of different herbicide programs on seed rain and the subsequent species shift in Liberty Link and Roundup Ready Flex cotton rotations. Soil cores (1,440) taken at 30.5, 61, 91, and 122 m from a 6 ha field at the Northeast Research and Extension Center in Keiser, AR, were used to determine that spotted and prostrate spurges were the dominant species present in April 2007. Large crabgrass, prickly sida, carpetweed, and Palmer amaranth were also present at low to moderate levels. In 2007, 2008, and 2009 seed traps were placed in the field in early August to catch seed rain through fall harvest. These traps were collected and counted to determine the benefit of adding a residual herbicide either preemergence, at LAYBY, or both, in comparison with a total postemergence program in Liberty Link or Roundup Ready Flex cotton systems. The dominant species after three years of this experiment were Palmer amaranth, large crabgrass, barnyardgrass, and prickly sida, accounting for over 92% of the total seed counted.