

LOW SEED GOSSYPOL CONTENT IN GLANDED G. HIRSUTUM LINES**Gabriela Romano****Jodi Scheffler****Abstract**

Gossypol, a polyphenol located in glands throughout vegetative and reproductive organs of plants in the *Gossypium* genus, offers protection from pests and perhaps pathogens. Gossypol's toxicity, however, decreases the value of cottonseed meal for feed, particularly for non-ruminants. Glandless cotton varieties were developed in the past, but they were unsuccessful because of increased crop losses due to pest damage. An alternative strategy for selection was adopted in this breeding program, to minimize gossypol content in seed while still maintaining glands throughout other plant organs. Parents from glanded adapted lines and a glandless parent were crossed. Progeny lines were evaluated visually for presence and abundance of glands in vegetative and reproductive organs and for gossypol content in their seeds through HPLC analysis. Low seed gossypol content (50 to 80% reduction from glanded parent) was achieved in lines that have normal glanding in stems and flowers and have normal to a 2/3 reduction in boll glanding. Using these lines, it should be possible to double the amount of whole cottonseed in feed for ruminants without causing any detrimental effects. It may also be possible to include these seeds in fish or poultry rations, further expanding the use of this secondary product. The potential for additional grower income by increasing the value of cotton seed by reducing toxicity is excellent.