

**COTTON FLOWERING AND FRUITING: CONTROL AND MODIFICATION
WITH PLANT GROWTH REGULATORS**

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Abstract

Cotton (*Gossypium hirsutum* L.) is a perennial woody shrub that possesses an indeterminate growth habit. Through breeding, cotton has been adapted to an annual production system and is currently grown under both semi-arid and humid conditions. As such, the crop is often subjected to environmental extremes and exposed to various stresses that impact its yield. The crop may be more vulnerable to these stresses at key developmental stages, such as flower initiation and boll filling. At present, cotton is not genetically limited for yield, but the ability to retain and mature the fruit that are produced remains a challenge. The fruiting habit of the crop normally proceeds from fruit production commencing at around the sixth node and proceeding upward and out on fruiting limbs until it reaches a stage of development referred to as cutout. Reports of as much as 80% of the yield originates at the first fruiting site, due mainly to the supply and demand balance. The first position fruit on a node constitutes a stronger demand and if supplies are limited, the subsequent fruit produced on the fruiting limb suffer the consequences. Because of these growth characteristics, ways to modify and control the flowering/fruiting of the cotton plants are often desirable. The alterations may be accomplished through the use of plant growth regulators (PGRs). However, interactions with the environment and differences in cultural practices are mainly responsible for the complex responses generated by crops to PGRs. Lack of consistency in performance, and the fact that PGR may not be economically beneficial are some of the limitations for PGR usage.