The Effect of Irrigation Rates on the Growth and Yield of Gossypium hirsutum L.

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In this experiment seven different allotted water amounts will be applied to fourteen different cotton cultivars to see the effects on lint yield differences. Cotton is a vital commodity in West Texas. With the increased drought, water has become a critical resource. The investigation and research with stressed plant growth has come to the fore front of the agricultural community worldwide. My 2016-2017 experiment will evaluate cotton growth characteristics to see if it can be directly tied to the yield and quality of the cotton. This experiment will be conducted by irrigating cotton cultivars the normal amount of water until they become established. The cultivar will be given a variation of seven different irrigation rates daily on independently irrigated 8-row drip zones. The irrigation rates ranged from 0mm a day to 6.096mm a day. Over the course of the growing season heights will be recorded as well as nodes, nodes above white flower and nodes after first square. This experiment will be conducted at a University Research Farm. In conclusion, the hypothesis was not supported. All fourteen cultivars had higher lint yield when they were watered 4.06mm (Water Application 5) every day. Cultivar 13 produced the most amount of lint in the end results. It was proven that farmers could plant and produce cotton with less amount of water while maintaining an increased amount of yield. Watering the plants at a decreased amount of 4.06mm a day allowed enough stress on the plant to where maximized growth was produced as well as the most amount of fruit that ultimately produced the most amount of lint yield. With the results that were achieved in this experiment farmers can conserve water and still can produce optimum lint yield in the end results.

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