

Title :Diuron+Thidiazuron applied as a defoliant to regulate maturity and improve cotton production in Côte d'Ivoire

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Background

In recent years, as a result of climate change, rainfall has extended into November and December, corresponding to the boll opening phase, leading to the resumption of cotton vegetation and poor production quality.

Objective

The main objective of this study was to regulate the period of ripening and boll opening in order to limit the negative effects of climate change on cotton production.

Methodology

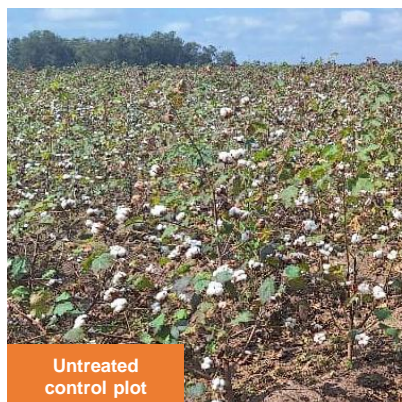
- ▶ In a split-plot design, a defoliant product based on Diuron+Thidiazuron at four doses (0 ml/ha, 31.5 ml/ha, 62.5 ml/ha and 125 ml/ha) was evaluated at two application dates: 100 days after cotton emergence (DAL) or 120 DAL.
- ▶ The plot size was 64 m², i.e. 10 m long by 6.4 m wide. In this set-up, each elementary plot consisted of ten lines of cotton plants.
- ▶ The sowing density was 83.333 plants per hectare, following a 0.8 × 0.3 sowing geometry, with two plants per poquet.
- ▶ Data was collected mainly on defoliation rate, boll opening rate, average capsular weight and seed cotton yield.

Results

The results clearly showed that the best defoliant treatment was the application of Diuron+Thidiazuron at a dose of **31.5ml/ha at 120 DAL**. This defoliant treatment resulted in a defoliation rate of **33.84%**, a boll opening rate of **8.96%**, an average capsular weight of **4.05g** and a seed cotton yield of **1289.08kg/ha**.

Dose/Date	DR (p.c)	CBOR (p.c)	MCW (g)	YIELD (kg.ha ⁻¹)
T0	-	-	3.55	742.20
31.3 ml.ha ⁻¹ /100 DAE	32.81	5.17	2.77	648.44
31.3 ml.ha⁻¹/120 DAE	33.84	08.96	4.05	1289.08
62.5 ml.ha ⁻¹ /100 DAE	14.93	06.34	3.60	867.20
62.5 ml.ha ⁻¹ /120 DAE	22.54	28.43	3.10	1023.40
125 ml.ha ⁻¹ /100 DAE	50.36	17.54	3.40	710.92
125 ml.ha ⁻¹ /100 DAE	27.76	25.62	3.43	1140.64

DAE : Day after plant emergence DR :defoliation rate CBOR :Cotton boll opening rate MCW : mean capsular weight



Conclusion

The use of Diuron+Thidiazuron-based defoliants should be included in cultural practices for the sustainability of cotton production in Côte d'Ivoire.