

Herbicide damage guide for cotton

Photographs & material by:

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Herbicide: **simazine**
Rate: **1.5 kg a.i./ha**
% of typical field rate **50%**
Date of exposure: **25th Nov**
(5 weeks post-emergence)
Growth stage at exposure: **5 nodes**

<u>Damage key:</u>	
Leaf loss	
Leaf distortion	
Petiole distortion	
Plant stunting	x
Square shedding	
Boll shedding	

Herbicidal action

Herbicide group: C
Translocation: readily absorbed by roots and translocated to shoots
Mode of action: inhibits photosynthesis
Residual activity: prolonged residual activity. Plant-back period may be up to 1 year depending on rate, soil moisture, soil Ph and temperature
Soil half-life: 55 - 186 days. Breakdown is slower in dry, alkaline and cold soils



Simazine granules 900 WG were applied broadcast at 1.65 kg/ha to 5 node cotton. Photo taken on 1st Dec, 6 days after exposure.

No symptoms of simazine damage were apparent 6 days after exposure.



Simazine granules 900 WG were applied broadcast at 1.65 kg/ha to 5 node cotton. Photo taken on 15th Dec, 20 days after exposure.

Some symptoms of simazine damage were apparent 20 days after exposure. Mild inter-veinal yellowing was apparent on a few of the older leaves.



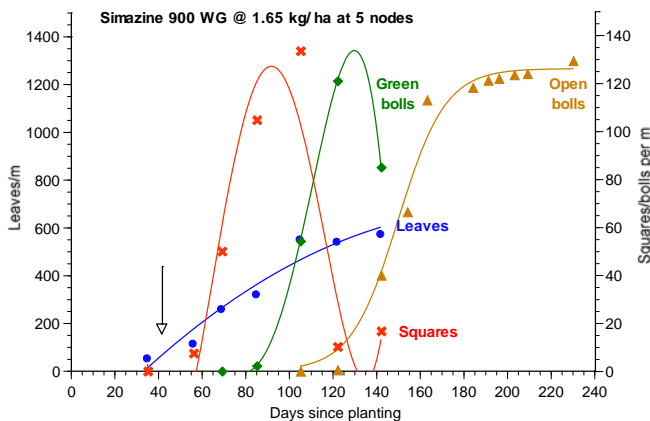
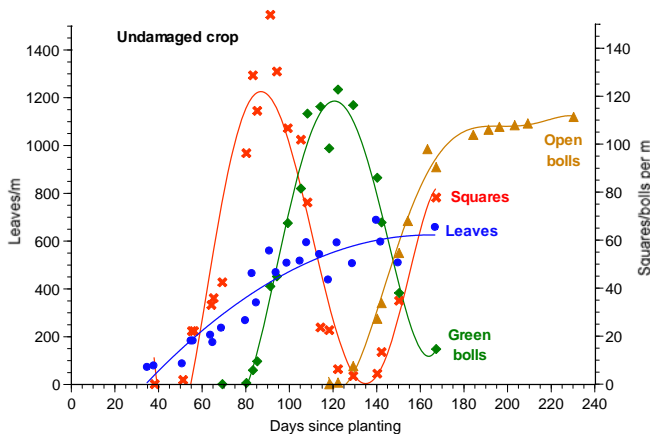
Simazine granules 900 WG were applied broadcast at 1.65 kg/ha to 5 node cotton. Photo taken on 23rd Dec, 28 days after exposure.

Some symptoms of simazine damage were still apparent 28 days after exposure. Mild inter-veinal yellowing was apparent on a few of the older leaves at the base of the plant.



Simazine granules 900 WG were applied broadcast at 1.65 kg/ha to 5 node cotton. Photo taken on 14th Jan, 50 days after exposure.

No visible symptoms of simazine damage remained 50 days after exposure.



Impact on plant growth

Plants: exposure to the 50% rate of simazine at 5 nodes caused a 40% increase in the percentage of tipped-out plants. Plants were also 14 cm and 1 node shorter than undamaged plants at picking but there was no reduction in plant weight.

Leaves: the herbicide caused a small amount of leaf damage on the exposed leaves. This had no effect on leaf number or leaf area at the last observation.

Squares: there was no noticeable effect on square production.

Bolls: the herbicide damage had no obvious effect on boll production, the pattern of boll retention, the proportion of bolls open at picking, the average weight of the open bolls or crop maturity.

Lint: ginning turnout, lint quality and lint yield were unaffected by the herbicide damage.

Final plant count data		
	undamaged	simazine
Nodes/plant	30.9	29.9
Leaves/m*	595	572
Leaf area (cm²/m)*	24900	25316
Reduction in leaf area*		-
Bolls/m	132	146
Boll weight (g/open boll)	5.3	5.1
Retention in posit's 1-3[^]	95%	93%
Nodes carrying >80% bolls[#]	7 - 18	7 - 16
Days to 50% open bolls	157	151
Maturity delay (days)		-
% Open bolls at picking	85%	88%
Lint yield/ha	2380	2356

Exposure to 50% of a typical field rate of simazine at 5 nodes caused a small amount of leaf damage and tipping-out and a reduction in plant height.

There were no obvious effects on boll production, the pattern of boll retention, the proportion of bolls open at picking, crop maturity, fibre quality or lint yield.

Note* These parameters were last recorded 142 days after planting.

Note[^] Percentage of retained bolls in positions 1 – 3.

Note[#] The spread of nodes carrying more than 80% of open bolls.