

## Herbicide damage guide for cotton

Photographs & material by:

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**Herbicide:** **simazine**  
**Rate:** **300 g a.i./ha**  
**% of typical field rate** **10%**  
**Date of exposure:** **13<sup>th</sup> Jan**  
**(12 weeks post-emergence)**  
**Growth stage at exposure:** **17 nodes**

<p><b><u>Damage key:</u></b> <b>Leaf loss</b> <b>Leaf distortion</b> <b>Petiole distortion</b> <b>Plant stunting</b> <b>Square shedding</b> <b>Boll shedding</b></p>
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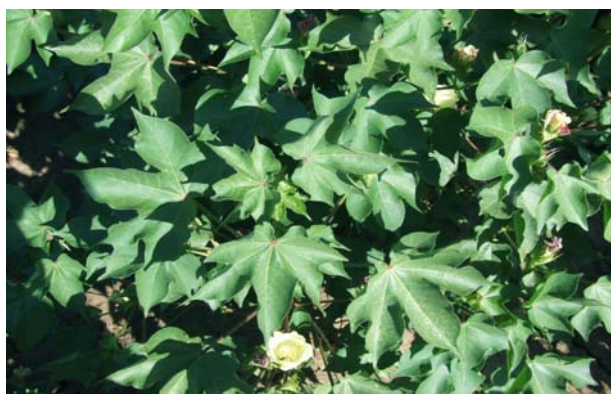
### Herbicidal action

**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 330 g/ha to 17 node cotton. Photo taken on 20<sup>th</sup> Jan, 7 days after exposure.

No symptoms of simazine damage were apparent at any stage.



Simazine granules 900 WG were applied broadcast at 330 g/ha to 17 node cotton. Photo taken on 5<sup>th</sup> Feb, 23 days after exposure.

No symptoms of simazine damage were apparent at any stage.



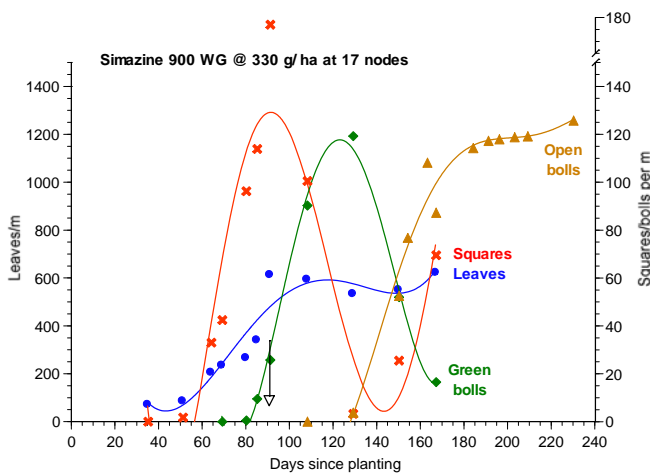
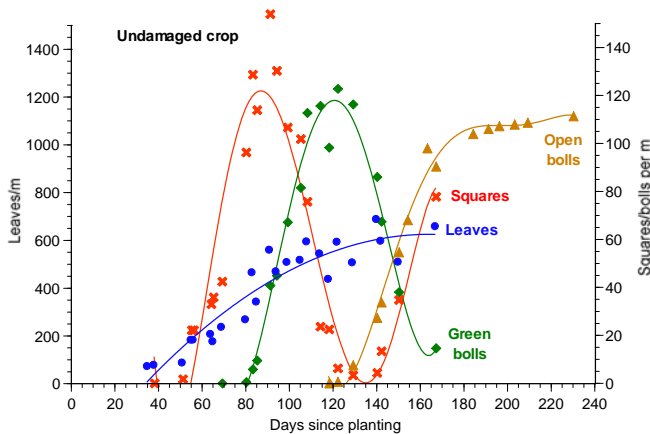
Simazine granules 900 WG were applied broadcast at 330 g/ha to 10 node cotton. Photo taken on 10<sup>th</sup> Feb, 28 days after exposure.

No symptoms of simazine damage were apparent at any stage.



Simazine granules 900 WG were applied broadcast at 330 g/ha to 5 node cotton. Photo taken on 11<sup>th</sup> Mar, 57 days after exposure.

No symptoms of simazine damage were apparent at any stage.



### Impact on plant growth

**Plants:** exposure to the 10% rate of simazine at 17 nodes caused no effect on plant height but plants were 8% smaller by weight at the final observation.

**Leaves:** the herbicide caused no obvious damage to the foliage but had an effect on plant growth and development, affecting leaf production. Plants had 21% less leaf area at the final observation.

**Squares:** there was no noticeable effect on square production.

**Bolls:** there were no obvious affects on boll retention, but plants produced an additional late flush of bolls, with 16% more bolls at picking. These additional small bolls were not pickable but there was no reduction in the average weight of open bolls at picking and average crop maturity was unaffected.

**Lint:** ginning turnout and fibre quality were unaffected by the herbicide damage, but lint yield was reduced by 8%.

Final plant count data		
	undamaged	simazine
<b>Nodes/plant</b>	30.9	31.4
<b>Leaves/m*</b>	657	623
<b>Leaf area (cm<sup>2</sup>/m)*</b>	21196	16677
<b>Reduction in leaf area*</b>		21%
<b>Bolls/m</b>	132	153
<b>Boll weight (g/open boll)</b>	5.3	5.1
<b>Retention in posit's 1-3^</b>	95%	98%
<b>Nodes carrying &gt;80% bolls#</b>	7 - 18	8 - 18
<b>Days to 50% open bolls</b>	157	154
<b>Maturity delay (days)</b>		-
<b>% Open bolls at picking</b>	85%	82%
<b>Lint yield/ha</b>	2380	2188

Exposure to 10% of a typical field rate of simazine at 17 nodes caused no obvious damage to the cotton, but caused a reduction in leaf area mid-season

There were no obvious affects on boll retention, but plants produced an additional late flush of bolls. There were no reductions in boll size, crop maturity or fibre quality. Lint yield was reduced by 8%.

Note\* These parameters were last recorded 167 days after planting.

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

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