

## Herbicide damage guide for cotton

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**Herbicide:** **simazine**  
**Rate:** **300 g a.i./ha**  
**% of typical field rate** **10%**  
**Date of exposure:** **14<sup>th</sup> Oct**  
**(pre-planting)**  
**Growth stage at exposure:**

<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 and incorporated prior to planting cotton. Photo taken on 4<sup>th</sup> Dec, 42 days after emergence.

No symptoms of simazine damage were apparent at any stage.



Simazine granules 900 WG were applied broadcast at 330 g/ha and incorporated prior to planting cotton. Photo taken on 11<sup>th</sup> Dec, 49 days after emergence.

No symptoms of simazine damage were apparent at any stage.



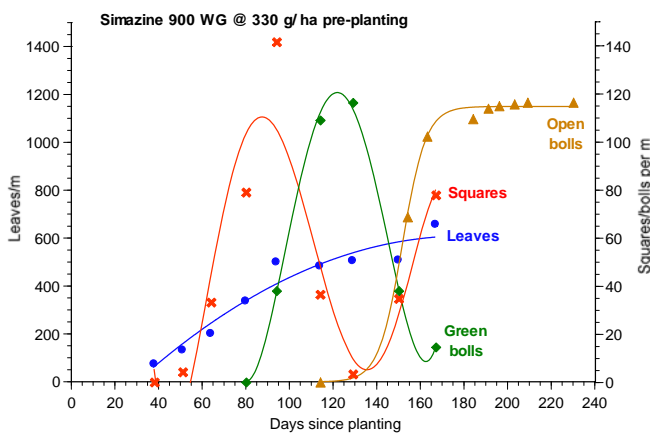
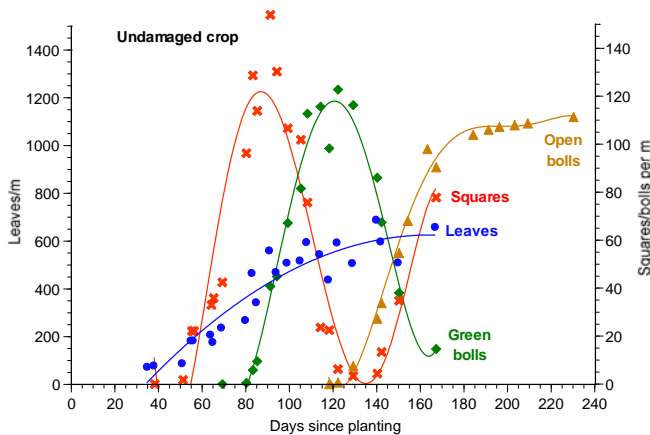
Simazine granules 900 WG were applied broadcast at 330 g/ha and incorporated prior to planting cotton. Photo taken on 31<sup>st</sup> Dec, 69 days after emergence.

No symptoms of simazine damage were apparent at any stage.



Simazine granules 900 WG were applied broadcast at 330 g/ha and incorporated prior to planting cotton. Photo taken on 14<sup>th</sup> Jan, 83 days after emergence.

No symptoms of simazine damage were apparent at any stage.



### Impact on plant growth

**Plants:** exposure to the 10% rate of residual simazine had no apparent effect on plant size, but caused a 20% increase in the proportion of tipped-out plants.

**Leaves:** the herbicide caused no observable damage to the foliage. However, plants had 11% fewer leaves and 7% less leaf area at the last observation.

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

**Bolls:** there was no observable effect on boll production or the pattern of boll retention, but plants had 6% fewer bolls, proportionally 5% fewer of the bolls were open at picking and the open bolls were 11% lighter than the undamaged crop. There was no delay in crop maturity.

**Lint:** ginning turnout was unaffected by the herbicide damage, but the cotton fell below base grade with 11.5 % short fibres. Lint yield was not affected.

<b>Final plant count data</b>		
	<b>undamaged</b>	<b>simazine</b>
<b>Nodes/plant</b>	30.9	31.2
<b>Leaves/m*</b>	543	483
<b>Leaf area (cm<sup>2</sup>/m)*</b>	23764	22057
<b>Reduction in leaf area*</b>		7%
<b>Bolls/m</b>	132	124
<b>Boll weight (g/open boll)</b>	5.3	4.7
<b>Retention in posit's 1-3^</b>	95%	97%
<b>Nodes carrying &gt;80% bolls#</b>	0.63	0.68
<b>Days to 50% open bolls</b>	157	153
<b>Maturity delay (days)</b>		-
<b>% Open bolls at picking</b>	85%	80%
<b>Lint yield/ha</b>	2380	2410

Exposure to 10% of a typical field rate of residual simazine caused no visibly detectable damage to the crop. However, leaf number and leaf area were reduced and boll retention was affected, although there was no delay in crop maturity or reduction in lint yield.

Nevertheless, the extent of damage from residual herbicides is influenced by seasonal conditions. More damage may have occurred in wetter and/or cooler conditions.

Note\* These parameters were last recorded 114 days after planting.

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

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