



Effect on cotton genotypes (*Gossypium hirsutum* L. cv. Rowden, Auburn)

1. The net impact of individual and combined stress on plant growth

Crop: Cotton (*Gossypium hirsutum* L. cv. Rowden, Auburn 634+ more)
 Stress 1: *Meloidogyne incognita*
 Stress 2: *Fusarium oxysporum* f.sp. *Vasinfectedum*
 Stage of plant: Plantlet

The table shows the impact of nematode and fungus in combination on plant mortality and vascular browning of cotton genotypes.

	Cultivars Treatment (<i>M.incognita</i> (10 eggs/500cm ³ soil)+ <i>F. oxysporum</i>)	Response to combined stress**		
		Type A parameters*		
		<i>F. oxysporum</i> (1800CFU/g soil)-1987	<i>F. oxysporum</i> (11900CFU/g soil)-1988	<i>F. oxysporum</i> (5900CFU/g soil)-1990
Mortality	<i>Auburn 634</i>	0.1	0.7	0.4
	<i>Rowden</i>	1.6	2.2	1
	<i>Tamcot SP21</i>	0	N/A	N/A
	<i>Paymaster 145</i>	0	N/A	N/A
	<i>Paymaster 404</i>	0	N/A	N/A
	<i>All Tex E2</i>	N/A	0.4	N/A
	<i>DP SR383</i>	N/A	0.8	N/A
	<i>PaymasterHS26</i>	N/A	1.3	N/A
	<i>Dawson Co.81</i>	N/A	1.6	N/A
	<i>Ranger BB53</i>	N/A	2.2	N/A
	<i>Rilcot RK-7</i>	N/A	1.6	N/A
	<i>GSA 71</i>	N/A	2.8	N/A
	<i>Qaw Paw D</i>	N/A	2.8	N/A

	<i>Paymaster 505</i>	N/A	N/A	1.9
	<i>Tamcot CABS</i>	N/A	N/A	1.1
	<i>Highland 34</i>	N/A	N/A	0.9
	<i>Rilcot RK-6</i>	N/A	N/A	0.7
	<i>Coker 320</i>	N/A	N/A	0.4
	<i>NK KC 380</i>	N/A	N/A	0.3
	<i>Ranger RV 64</i>	N/A	N/A	0.1
	<i>McNair 220</i>	N/A	N/A	0.1
Vascular Browning	<i>Auburn 634</i>	1.2	1.4	1.4
	<i>Rowden</i>	2.5	2.1	2.2
	<i>Tamcot SP21</i>	1.8	N/A	N/A
	<i>Paymaster 145</i>	2.3	N/A	N/A
	<i>Paymaster 404</i>	2.6	N/A	N/A
	<i>All Tex E2</i>	N/A	3.9	N/A
	<i>DP SR383</i>	N/A	2.5	N/A
	<i>PaymasterHS26</i>	N/A	2	N/A
	<i>Dawson Co.81</i>	N/A	2.6	N/A
	<i>Ranger BB53</i>	N/A	2.3	N/A
	<i>Rilcot RK-7</i>	N/A	3.2	N/A
	<i>GSA 71</i>	N/A	2.5	N/A
	<i>Qaw Paw D</i>	N/A	2.5	N/A
	<i>Paymaster 505</i>	N/A	N/A	2
	<i>Tamcot CABS</i>	N/A	N/A	2
	<i>Highland 34</i>	N/A	N/A	1.5

	<i>Rilcot RK-6</i>	N/A	N/A	2.2
	<i>Coker 320</i>	N/A	N/A	1.8
	<i>NK KC 380</i>	N/A	N/A	2
	<i>Ranger RV 64</i>	N/A	N/A	1.5
	<i>McNair 220</i>	N/A	N/A	1.2

Note:

‘***’ - Values are presented as it is from the source article without subjecting to the calculation.

‘*’ - For more information on parameters classification, please refer to ‘methodology’ tab.

2. The interaction between nematode and fungal pathogen under combined stress at plant interface

The tables show the effect of fungal pathogen on nematode population density under combined stress treatment

Cultivars Treatment (<i>M.incognita</i> (10 eggs/500cm ³ soil)+ <i>F. oxysporum</i>)	Response to combined stress**		
	Type B parameters*		
	Nematode Population density		
	<i>F. oxysporum</i> (1800CFU/g soil)-1987	<i>F. oxysporum</i> (11900CFU/g soil)-1988	<i>F. oxysporum</i> (5900CFU/g soil)-1990
<i>Auburn 634</i>	10	10	10
<i>Rowden</i>	3300	100	620
<i>Tamcot SP21</i>	5000	N/A	N/A
<i>Paymaster 145</i>	1200	N/A	N/A
<i>Paymaster 404</i>	23800	N/A	N/A
<i>All Tex E2</i>	N/A	400	N/A
<i>DP SR383</i>	N/A	3600	N/A

<i>PaymasterHS26</i>	N/A	1000	N/A
<i>Dawson Co.81</i>	N/A	3600	N/A
<i>Ranger BB53</i>	N/A	500	N/A
<i>Rilcot RK-7</i>	N/A	2500	N/A
<i>GSA 71</i>	N/A	500	N/A
<i>Qaw Paw D</i>	N/A	800	N/A
<i>Paymaster 505</i>	N/A	N/A	140
<i>Tamcot CABS</i>	N/A	N/A	460
<i>Highland 34</i>	N/A	N/A	640
<i>Rilcot RK-6</i>	N/A	N/A	100
<i>Coker 320</i>	N/A	N/A	240
<i>NK KC 380</i>	N/A	N/A	1930
<i>Ranger RV 64</i>	N/A	N/A	2330
<i>McNair 220</i>	N/A	N/A	730

For raw data – Click here (.xlsx file)

Reference- Starr JL, Martyn RD (1991) Reaction of cotton cultivars to Fusarium wilt and root-knot nematodes. *Nematropica* 21:51-58.

Note:

‘**’ - Values are presented as it is from the source article without subjecting to the calculation.

‘*’ - For more information on parameters classification, please refer to ‘methodology’ tab.

Inference From the study: Starr JL, Martyn RD (1991) studied the reaction of cotton cultivars to Fusarium wilt and root-knot nematodes. Simultaneous inoculation was done using different fungal inoculum levels in a different year. Cultivars were then analyzed for mortality, vascular browning, and nematode population. All Tex E2, DP SR383, PaymasterHS26, Rowden Dawson Co.81, Ranger BB53, Rilcot RK-7, GSA 71, Qaw Paw D cultivars showed more plant mortality and vascular browning, thus these are susceptible cotton cultivars. Nematode population was low at higher fungal inoculum in cultivar Rowden. Auburn 634, Tamcot SP21 showed lesser mortality rate and vascular browning, thus are tolerant cotton cultivars. **This pathogen combination works to cause severe disease complex in cotton cultivars All Tex E2, DP**

**SR383, PaymasterHS26, Rowden Dawson Co.81, Ranger BB53, Rilcot RK-7, GSA 71, Qaw
Paw D .**