

## **Chickpea, Variety (Cold Tolerance), MRZ Wimmera (Horsham), Victoria**

### **Aim**

To evaluate the yield of chickpea breeding lines with cold tolerance traits in comparison to selected commercial varieties.

### **Treatments**

Varieties/Breeding lines: See Table 1

### **Other Site Details**

<b>Sowing date</b>	22 May
<b>Stubble height (cm)</b>	Standing (20)
<b>Row Spacing (cm)</b>	36
<b>Planting density (plants/m<sup>2</sup>)</b>	20
<b>Fertiliser (kg/ha)<sup>1</sup></b>	80

1. MAP (9.2, 20.2, 0, 2.7) + Zn (2.5)

### **Results and Interpretation**

- **Key Messages:** Due to extremely dry seasonal conditions and temperature events, grain yields were very low in 2018. The commercial varieties Kaniva, Genesis090, PBA Striker and Sonali yielded better than most breeding lines. Among the breeding lines, 'CT1' and 'CT2' had grain yields equivalent to Genesis090 and PBA Striker.
- **Establishment and Plant Growth:** Due to a dry start to the season, establishment and early growth of the varieties and breeding lines was very slow and variable, reaching the 4 node stage about 7 weeks after sowing. Growth during the rest of the season was impacted by dry seasonal conditions and repeated vegetative and reproductive frost events.
- **Grain Yield:** There was significant grain yield difference between the varieties and breeding lines. Grain yields were generally very low, ranging from 0.2 to 0.5 t/ha, due to extremely dry seasonal conditions and several reproductive frost events which lead to flower loss and pod abortion. The Kabuli type varieties Kaniva and Genesis090 were the highest yielding varieties with grain yield similar to the Desi type varieties PBA Striker, Sonali and breeding lines 'CT1' and 'CT2' (Table 1). The breeding lines 'CT23', 'CT22', 'CT21', 'CT20' were among the lowest yielding breeding lines (Table 1).

**Table 1.** Grain yield (t/ha) of chickpea varieties and breeding lines with cold tolerance traits at Horsham, Victoria in 2018.

<b>Varieties/breeding lines</b>	<b>Grain Yield (t/ha)</b>
Kaniva	0.50
Genesis090	0.50
PBA Striker	0.47
'CT1'	0.44
Sonali	0.43
'CT2'	0.41
'CT3'	0.39
'CT4'	0.38
'CT5'	0.36
'CT6'	0.35
'CT7'	0.35
'CT8'	0.35
'CT9'	0.32
'CT10'	0.31
'CT11'	0.29
'CT12'	0.26
'CT13'	0.26
'CT14'	0.26
'CT15'	0.26
'CT16'	0.26
'CT17'	0.25
'CT18'	0.24
'CT19'	0.24
'CT20'	0.23
'CT21'	0.22
'CT22'	0.22
'CT23'	0.20
<b>Average</b>	<b>0.32</b>
<b>LSD</b> <small>Var(p&lt;0.05)</small>	<b>0.09</b>
<b>CV</b>	<b>20.5</b>