

## The 2018 season at Hart

The Mid-North had a dry start to seeding and Hart was no exception. With well below average summer rainfall this also meant there was limited stored moisture available going into the season. Trial seeding commenced on the 20<sup>th</sup> March, well before our traditional sowing window and the final trials were sown on the 4<sup>th</sup> June. Trial plots sown prior to the beginning of May were irrigated to achieve germination and establishment.

The majority of Hart's research program was sown in mid-May. The site received less than average (28 mm) rainfall during April with a total of 13 mm. We recorded 42 mm of rain throughout May which improved seed bed moisture and reduced moisture stress in the early sown trials.

From June onwards, we received well below average rainfall for the remainder of the growing season (Figure 1). Due to the drier than normal conditions the trials progressed quickly however, lack of spring rainfall reduced grain yields. Rain events in November (Table 1) were too late to effect grain yield and delayed harvest and hay baling.

In total Hart received 224 mm of annual rainfall (average 400 mm) and 160 mm of growing season rainfall (average GSR 300 mm). This put 2018 in the lowest 10% of rainfall records (decile 1). More recently this growing season rainfall compares to 2006 and 2012 which received 138 mm and 168 mm, respectively.

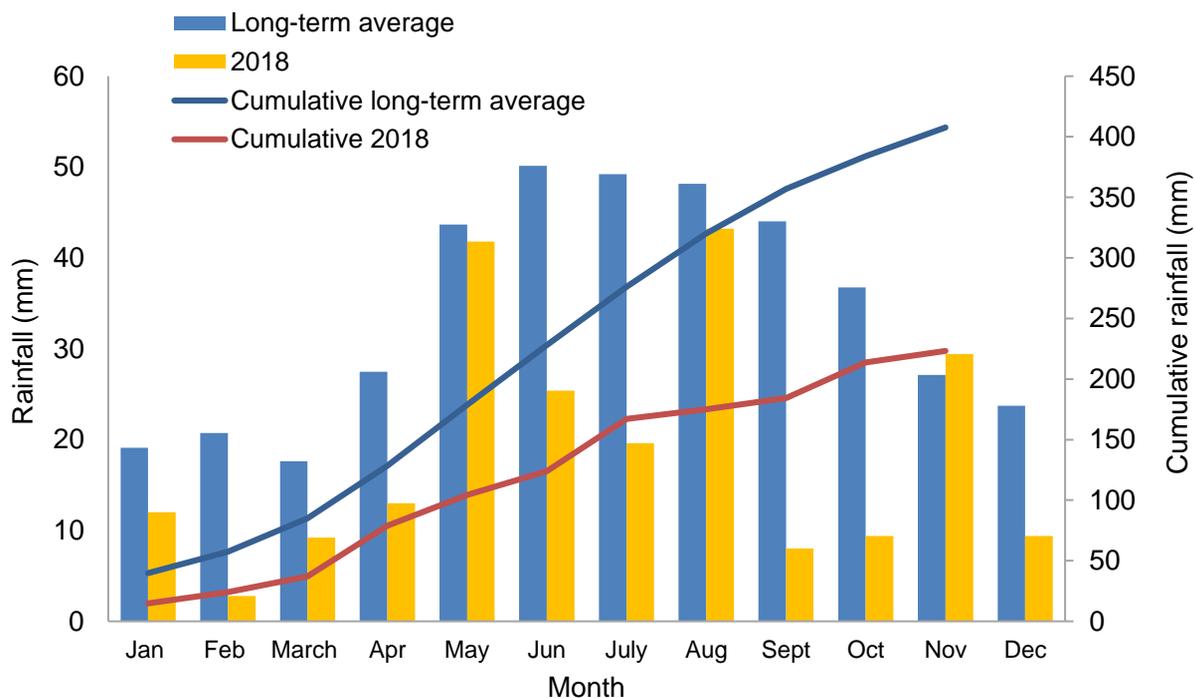


Figure 1. Hart rainfall (mm) for 2018 and long-term (100 years of rainfall records) average. The cumulative rainfall is presented as lines for 2018 (blue) and the long-term average (orange).

Table 1. Hart rainfall chart 2018 (Hart weather station).

	January	February	March	April	May	June	July	August	September	October	November	December
1							0.2		3.6			1.0
2	0.4							1.6	0.6	2.4	0.6	
3					17.2			11.4		0.6		
4					2.2						8.4	
5								1.2			3.2	
6											0.4	
7						3.4	1.4	0.2			0.6	
8						3.6				2.4		
9					0.6	3.8		0.6		0.4		
10					3.0			9.2				
11					5.6	0.6	1.6	2.4				
12	3.2					0.2	2.2	3.0				
13						1.2		0.2			0.4	2.4
14					0.2	4.6		0.2		1.4		6.0
15				0.6		2.4			1.6			
16			5.6	6.2		4.4		0.2		2.0		
17				2.4						0.2		
18		2.6	0.6	2.2	2.8			1.4				
19					0.2		7.0		1.0			
20			0.8				3.0		1.2		4.4	
21											4.2	
22											1.0	
23							0.6					
24		0.2		1.6			0.0				2.6	
25			2.2									
26							0.2					
27					5.6		0.6				3.6	
28	8.4				4.4		0.8					
29						1.0	2.0					
30						0.2		3.6				0.6
31								8.0				
<b>Montly total</b>	<b>12.0</b>	<b>2.8</b>	<b>9.2</b>	<b>13.0</b>	<b>41.8</b>	<b>25.4</b>	<b>19.6</b>	<b>43.2</b>	<b>8.0</b>	<b>9.4</b>	<b>29.4</b>	<b>10.0</b>
GSR rainfall				13.0	54.8	80.2	99.8	143.0	151.0	160.4		
Total rainfall	12.0	14.8	24.0	37.0	78.8	104.2	123.8	167.0	175.0	184.4	213.8	223.8

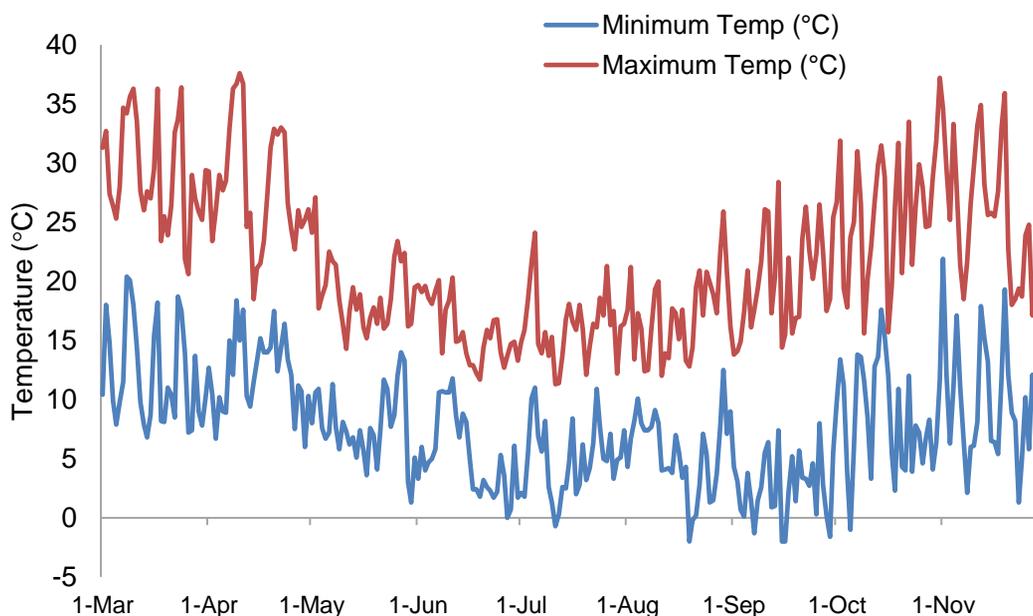


Figure 2. Daily maximum and minimum air temperature at Hart, 2018.

Table 2. General soil physical and chemical properties for the Hart field site. Sampled on 16<sup>th</sup> April, 2018.

Soil property	Units	Sampling depth (cm)					Total profile
		0-15	15-35	35-55	55-75	75-105	
Texture							Loam – clay loam
Gravel	%	0	0	0	0	0	
Phosphorous Colwell	mg/kg	26	9	8	2	2	
Potassium Colwell	mg/kg	335	250	253	305	220	
Available soil nitrogen	kg/ha	25	34	16	5	6	86
Sulphur	mg/kg	4	5	20	56	125	
Organic carbon	%	1.2	0.8	0.7	0.4	0.3	
Conductivity	dS/m	0.2	0.3	0.4	0.8	0.7	
pH (CaCl <sub>2</sub> )		7.6	8	8.1	8.5	8.4	