

Supplementary Table S1. Wheat genotypes used in the field trial.

Sr. No.	Wheat Genotypes	Growth Type
1	Barham	Spring
2	Bolac	Spring
3	Carnamah	Spring
4	Crusader	Spring
5	Derrimut	Spring
6	EGA Gregory	Spring
7	EGA Hume	Spring
8	EGA Wylie	Spring
9	Ellison	Spring
10	Espada	Spring
11	Excalibur	Spring
12	Gladius	Spring
13	Hartog	Spring
14	Kennedy	Spring
15	Peake	Spring
16	Sunco	Spring
17	Sunvale	Spring
18	Sunzell	Spring
19	Ventura	Spring
20	Volcani DDI	Spring

Supplementary Table S2. List of vegetation indices relating to physiology and canopy structure used in this study.

Vegetation indices	Equation	Reference
Normalized difference vegetation index	$NDVI = \frac{NIR - RED}{NIR + RED}$	[1]
Blue normalized difference vegetation index	$BNDVI = \frac{NIR - BLUE}{NIR + BLUE}$	[2]
Green normalized difference vegetation index	$GNDVI = \frac{NIR - GREEN}{NIR + GREEN}$	[3]
Normalized difference red-edge index	$NDRE = \frac{NIR - RE}{NIR + RE}$	[4]
Red-blue normalized difference vegetation index	$RB - NDVI = \frac{NIR - (RED + BLUE)}{NIR + (RED + BLUE)}$	[2]
Green-blue normalized difference vegetation index	$GB - NDVI = \frac{NIR - (GREEN + BLUE)}{NIR + (GREEN + BLUE)}$	[2]
Green-red normalized difference vegetation index	$GR - NDVI = \frac{NIR - (GREEN + RED)}{NIR + (GREEN + RED)}$	[2]
Pan normalized difference vegetation index	$PNDVI = \frac{NIR - (GREEN + RED + BLUE)}{NIR + (GREEN + RED + BLUE)}$	[2]
NIR-green difference vegetation index	$GDVI = NIR - GREEN$	[2]
Enhanced vegetation index	$EVI = \frac{2.5(NIR - RED)}{(NIR + 6 \times RED - 7.5 \times BLUE) + 1}$	[5]
Enhanced vegetation index2	$EVI2 = \frac{2.4(NIR - RED)}{(NIR + RED) + 1}$	[6]
Enhanced vegetation index2-2	$EVI22 = \frac{2.4(NIR - RED)}{(NIR + 2.4 \times RED) + 1}$	[2]
Normalized difference rededge/red	$NDRE - R = \frac{RE - RED}{RE + RED}$	[2]
Normalized green-red difference index	$NGRDI = \frac{GREEN - RED}{GREEN + RED}$	[7]
Normalized red-blue difference index	$NRBDI = \frac{GREEN - BLUE}{GREEN + BLUE}$	[2]
Red green blue vegetation indices	$RGBVI = \frac{(GREEN^2) - (BLUE \times RED)}{(GREEN^2) + (BLUE \times RED)}$	[8]
Green normalized difference water index	$GNDWI = \frac{GREEN - NIR}{GREEN + NIR}$	[9]
Green leaf index	$GLI = \frac{2 \times GREEN - RED - BLUE}{2 \times GREEN + RED + BLUE}$	[10]
Normalized green intensity	$NGI = \frac{GREEN}{RED + GREEN + BLUE}$	[11]
Renormalized difference vegetation index	$RDVI = \frac{NIR - RED}{\sqrt{NIR + RED}}$	[12]

Soil adjusted vegetation index	$SAVI = 1.5 \left[\frac{NIR - RED}{NIR + RED + 0.5} \right]$	[13]
Optimized soil adjusted vegetation index	$OSAVI = 1.6 \left[\frac{NIR - RED}{NIR + RED + 0.16} \right]$	[14]
Green optimized soil adjusted vegetation index	$GOSAVI = \left[\frac{GREEN - RED}{GREEN + RED + 0.16} \right]$	[15]
Green soil adjusted vegetation index	$GSAVI = 1.5 \left[\frac{NIR - GREEN}{NIR + GREEN + 0.5} \right]$	[15]
Modified triangular vegetation index 1	$MTVI1 = 1.2[1.2(NIR - GREEN) - 2.5(RED - GREEN)]$	[16]
Modified triangular vegetation index 2	$MTVI2 = \frac{1.8(NIR - GREEN) - 3.75(RED - GREEN)}{\sqrt{(2 \times NIR + 1)^2 - (6 \times NIR - 5\sqrt{RED})}} - 0.5$	[16]
Transformed vegetation index	$TVI = \sqrt{(NIR - RED)/(NIR + RED)} - 0.5$	[17]
Transformed difference vegetation index	$TDVI = \sqrt{0.5 \times (NIR - RED)/(NIR + RED)}$	[18]

Supplementary Table S3. List of vegetation morphological features used in this study.

Morphological features	Description
Area	The planimetric space occupied by the image objects
Convex-hull area	The planimetric space enclosed by minimum convex polygons of the image objects
Perimeter	The path that surrounds the image objects
Eccentricity	The ellipse that has the same second-moments as the image objects
Elongation	The ratio of normal area to the square of thickness of the image objects
Equivalent diameter	The diameter of a circle with the same area as the image objects
Feret diameter	The longest distance between points convex hull contours around the image objects
Euler number	Euler characteristic of the set of non-zero pixels in the image objects
Extent	The ratio of normal area to the area of total bounding box of the image objects
Major axis length	The length of the major axis of the ellipse that has the same normalized second central moments of the image objects
Minor axis length	The length of the minor axis of the ellipse that has the same normalized second central moments of the image objects
Solidity	The ratio of normal area to convex-hull area of the image objects

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