

Figure S2. Segmentation of plots in perpendicular rows and columns with variations. The left panel displays the raw images and the right demonstrated the extracted pixels of interest with plots defined by the red boxes. Image source: maize (https://www.knowablemagazine.org/sites/default/files/styles/750_y/public/articles/content/2017-12/image5photorespiration_0.jpg?itok=hNt9XiwH), cherry and chickpea (Zhou Tang and Samuel Revolinski).

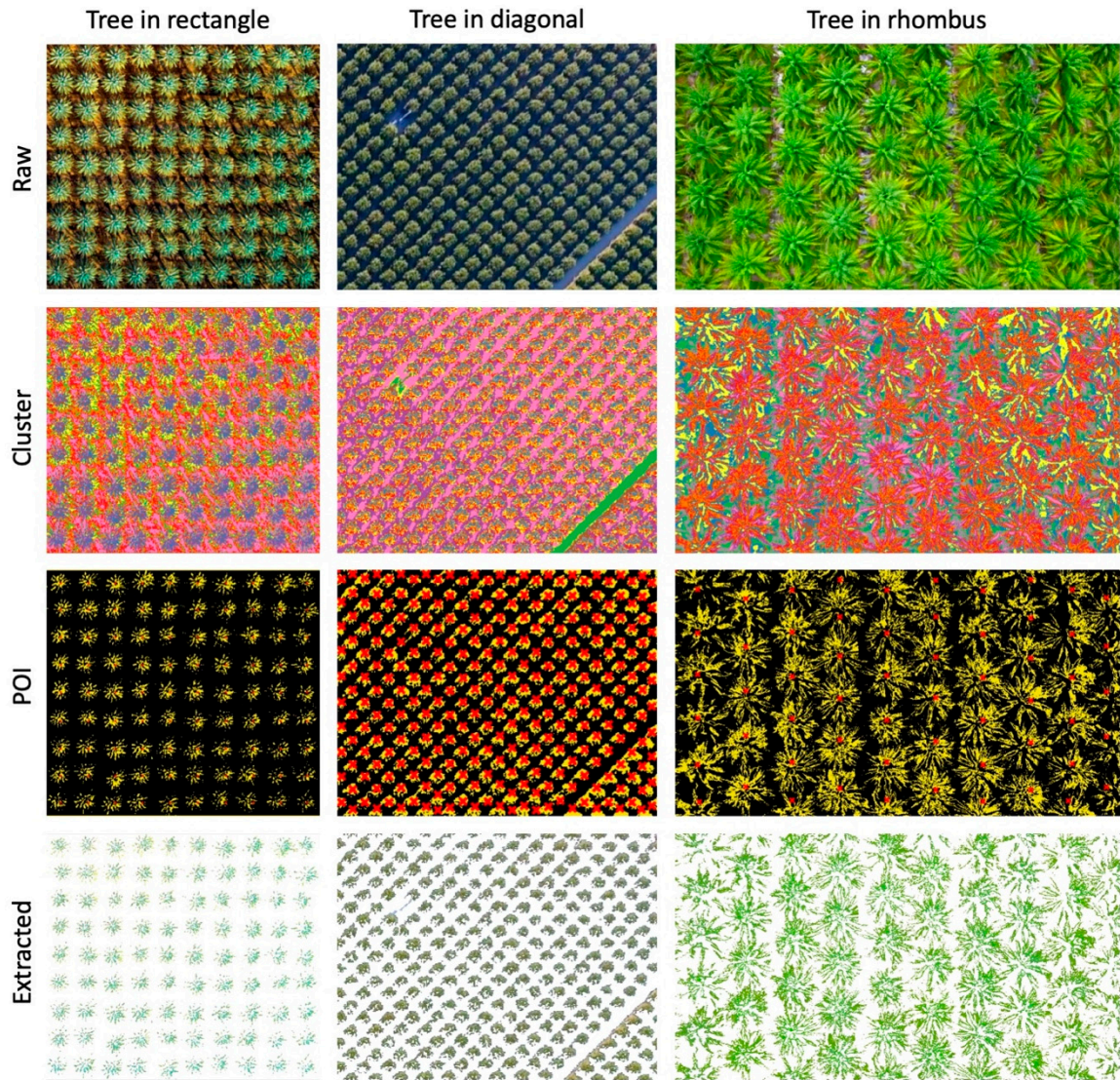


Figure S3. Extraction of Pixels of Interest (POI) on images orientated in perpendicular, diagonal and rhombus shapes. Image source: Tree in rectangle: <https://www.alamy.com/aerial-view-with-a-drone-of-a-palm-tree-plantation-on-the-shores-of-the-dead-sea-israel-image237952661.html>; Tree in diagonal : <https://i.ytimg.com/vi/PAXiqfujMso/maxresdefault.jpg>; Tree in rhombus: <https://ak8.picdn.net/shutterstock/videos/30192448/thumb/1.jpg>.

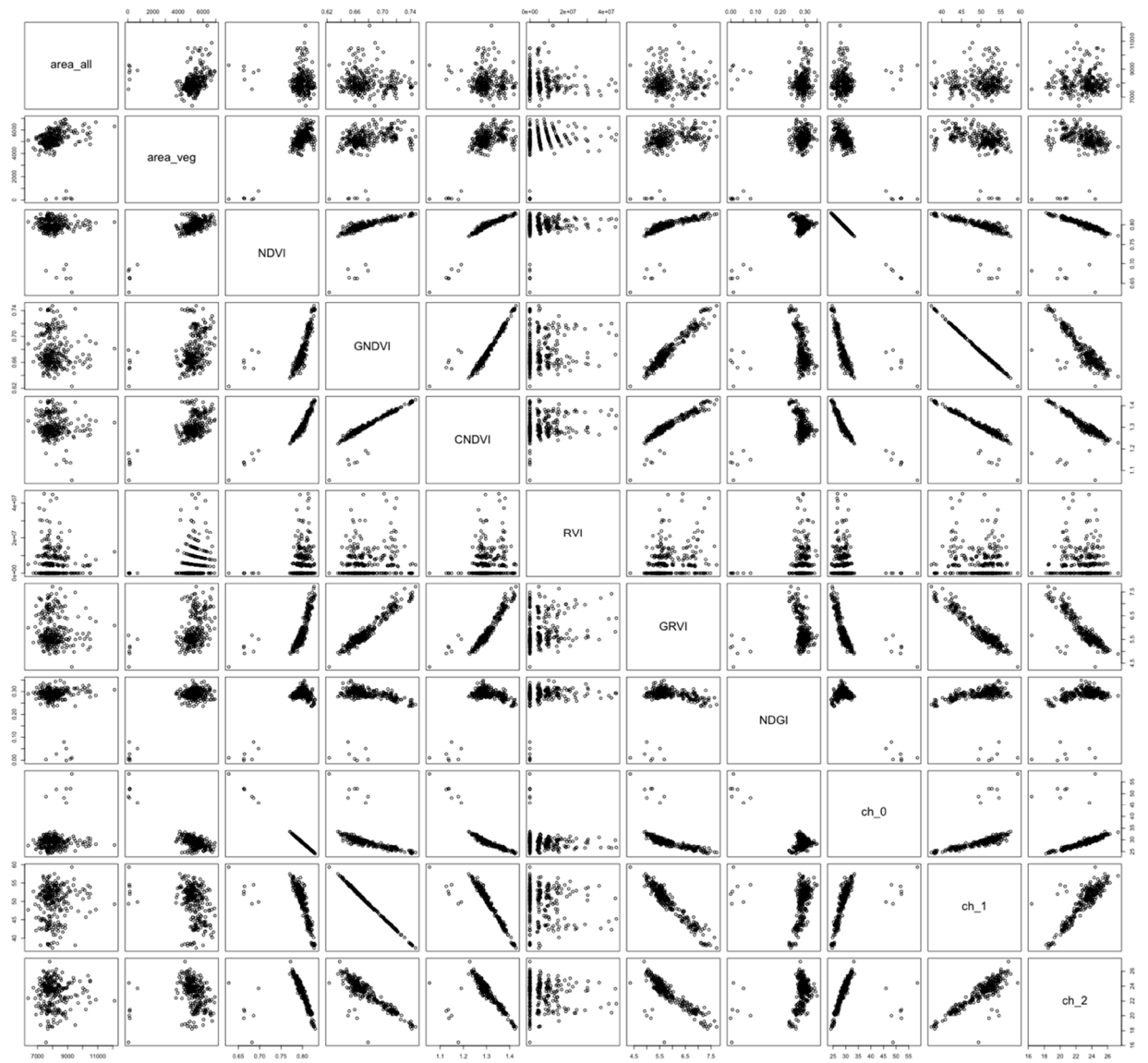


Figure S4. Scatter plots of plot features extracted on alfalfa drone image.

Table 1. Vegetation indices exported from GRID. The indices include Normalized Difference Vegetation Index (NDVI), Green Normalized Difference Vegetation Index (GNDVI), Combination of Normalized Difference Vegetation Index (CNDVI), Ratio Vegetation Index (RVI), Green Ratio Vegetation Index (GRVI), and Normalized Difference Greenness Vegetation Index (NDGVI). The *i*th channel value is denoted as *b_i*, where *i*=1,2,3, and 4 for red, green, blue, and NIR (Near Infrared), respectively.

Vegetation Index	Formula	Reference
NDVI	$(b_4 - b_1) / (b_4 + b_1)$	[1]
GNDVI	$(b_4 - b_2) / (b_4 + b_2)$	[2]
CNDVI	$(2 * b_4 - b_1 - b_2) / (b_4 + b_1 + b_2)$	[3]
RVI	b_4 / b_1	[4]
GRVI	b_4 / b_2	[5]
NDGI	$(b_2 - b_1) / (b_2 + b_1)$	[6]

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