Measuring leaf quality with hyperspectral sensor

It is important for growers to know how much reserves their crops have. At the moment this can only be measured by sending the leaves or fruits into a laboratory and waiting for the analysis.

We looked into whether it would be possible to directly measure the levels of sugars and starch, dry matter, chlorophyll and nutrients in the crop using hyperspectral cameras. Hyperspectral imaging provides a reflection spectrum of the incident light per pixel, combining chemometry and image analysis.

We looked at the visible and infrared spectrum, from 400 to 1700 nm. The results are promising: hyperspectral cameras can be used to determine concentrations of sugars in leaves and fruits, chlorophyll and dry matter percentage and leaf thickness. This makes it possible to adjust the climate or cultivation strategy based on these camera images.

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