



FruitLook January 2015: Happy New Year!

Dear Mr. Doe,

We hope you had a pleasant Christmas time and we wish you all the best for 2015! We look forward to keep providing insight into your crop's growth via satellite technology on FruitLook.

The end of an old and start of a new year is characterized by reflection on the past and hope for the future. In this newsletter we list some important stepping stones taken by FruitLook in 2014 and provide you an outlook on things to come.

Achievements in 2014

First FruitLook Forum on December 3rd: the FruitLook Forum brought together professionals from the fruit and wine production sectors to discuss FruitLook data use in farm management. Presentations were given on the role, technique behind, validation and practical application of FruitLook. At the Forum Andre Roux, Director Sustainable Resource Management at the Western Cape Department of Agriculture, emphasized the key role of FruitLook for stimulating agricultural production and efficient water use. In total 62 representatives of the wine- and fruit production sectors attended, varying from farm managers to scientists and from governmental officials to consultants.

FruitLook Platform Developments: a number of important new additions/alterations were made to the FruitLook website. A new block boundary based order system made ordering data easier, quicker and more fun. It became possible to instantly order data for all blocks delineated in previous seasons. At the end of the year also the option to delete blocks has been made available to the user (want to know how you can delete faulty blocks from your account? Press [HERE](#)). Furthermore the [consultants](#) section and a new [Manual](#) were introduced to help users get the most out of FruitLook.

FruitLook in Media: FruitLook has been selected as one of the projects on display during the World Design Capital 2014 at Cape Town. A poster has been presented at the SASEV conference, describing practical applications of FruitLook in farm management. This poster can be found [HERE](#). FruitLook has been part of a number of HortGro Science courses and the HortGro Science Technical Symposium. An article on Hexriver Valley table grape cultivation, evaluated by use of FruitLook data, has been published in the October 2014 issue of [WineLand](#) and another one will follow in 2015 describing data accuracy evaluations.

Outlook on 2015

FruitSupport: In 2015 we will continue to disseminate crop information through satellite based data products via the FruitLook portal. An important new feature, currently under development, will be an email support system (working title FruitSupport) to pro-actively approach our users. Via this email system FruitLook subscribers will receive a warning when internal variation in a block becomes too high. Increased heterogeneity can indicate for example water stress, disease or pests which puts (part of) your block under stress. Our goal is to implement this system before the end of the running season. We will keep you up-to-date on the development!

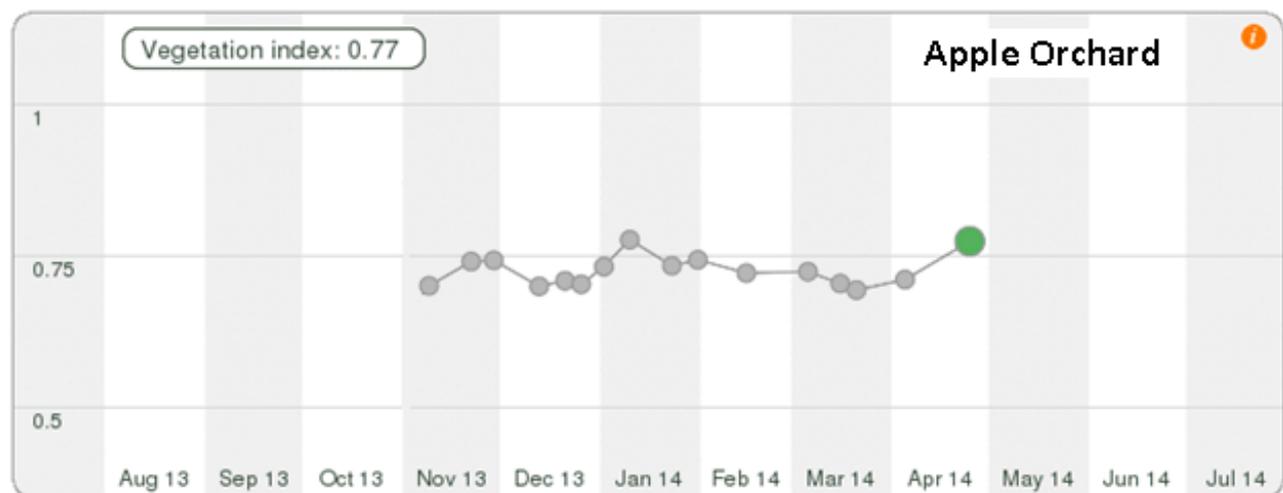
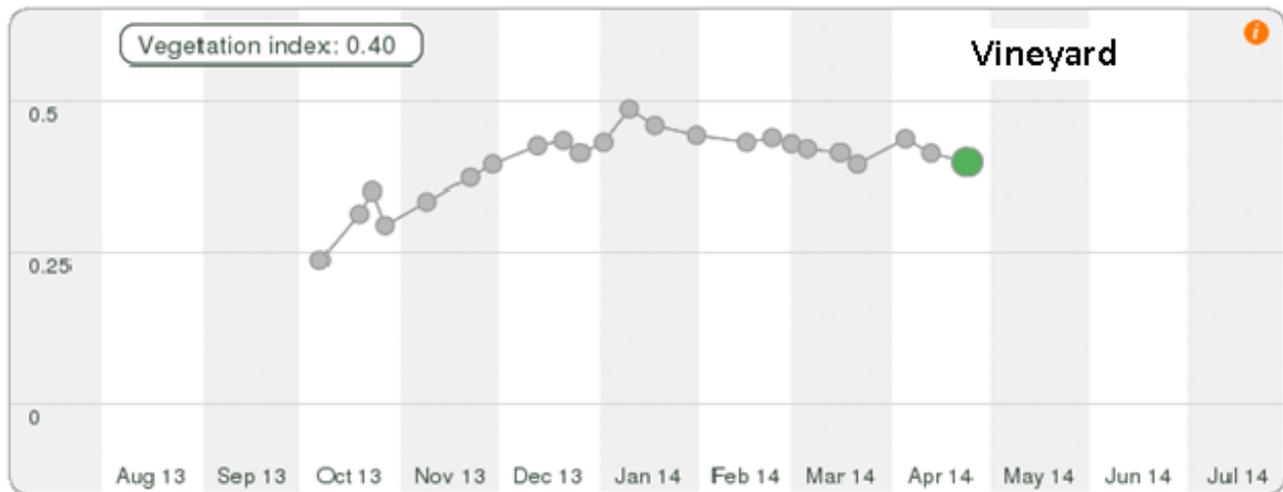
FruitLook parameter explications: In 2015 a new section of the newsletter will be an extensive exploration of key FruitLook parameter(s). This will focus around three questions: 1) What is it?, 2) What can you expect?, 3) How can you use it? It is important to note that although we will describe the data products separately, they are related and

of influence to each other. For example, a strong increase in evapotranspiration deficit will lead to a reduction in biomass production due to water stress.

In this first newsletter of 2015 the **Vegetation Index** is examined:

Vegetation Index: What is it? The Vegetation Index (= NDVI) is an indicator of the vitality of your crop. A high index means healthy and strong growing vegetation. It is strongly influenced by chlorophyll content and the cell structure of leaves. The date of the Vegetation Index map data on FruitLook is the actual date of the satellite recording: hence this parameter layer provides a direct snapshot of your block condition at that specific date.

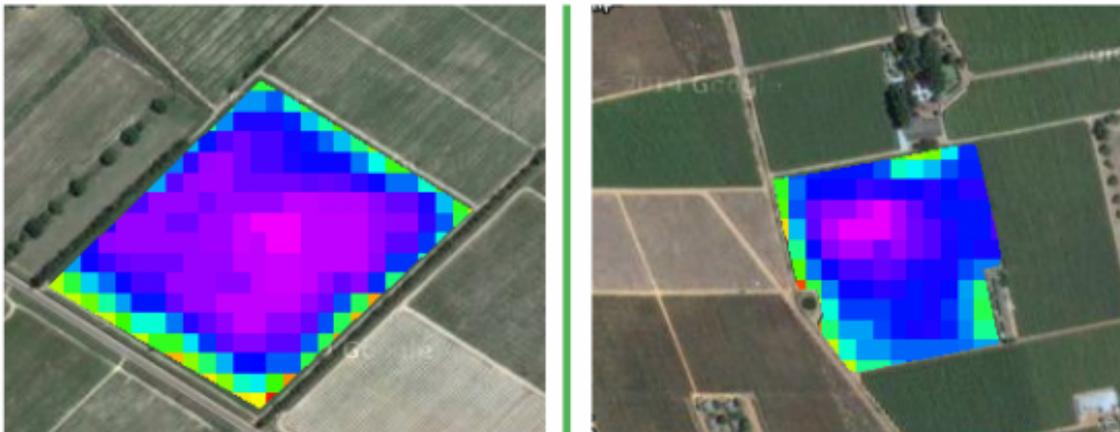
What can you expect? The Vegetation Index of cropped land normally has a value between 0.2 and 0.85. The Vegetation Index is affected by all plants growing on that patch of land, including cover crop, weeds and fruit crops. A typical Vegetation Index profile of wine grapes is depicted below. The second image depicts a typical profile of an apple orchard (possibly with cover crop contributing to a higher initial NDVI).



In seasonal crops like wheat the Vegetation Index profile describes onset, vegetative growth, ripening and harvest and has a strongly curved profile. In fruit crops this seasonal curve is less apparent. Instead a slow increase or even flat Vegetation Index profile can be expected during the season, as can be seen in the figures above. The Vegetation Index will decline after the season ends, especially after the onset of leaf fall.

Please take into account type of trellis system, pruning/thinning, row distance, cover crops, weeds all influence the Vegetation Index. For example: where 0.8 is a value often seen in table grape blocks this is rarely seen for wine grapes, due to a different manner of trellis design.

How can you use it? Spatial Overview: the Vegetation Index of a single management block should have a homogeneous outlook throughout the season. On the left image above you see an example of a relatively homogeneous block, on the right an example of a heterogeneous block. Strong variation in a block might indicate part of your block is responding less well to your block management. This could for example be due to underlying variation in soil conditions. In-season variation in Vegetation Index can also be caused by hazards like disease or pests.



Temporal Overview: You can use the temporal profile to easily see if your blocks show continuous development throughout the growth season. If a strong decline is visible and no changes have been made in your block management (for example no extensive pruning) possibly something is going amiss in your block.

Interested to learn more? Search "NDVI" on Google: many articles can be found describing this parameter. A number of general, open sources are: [Wikipedia](#), [NASA](#), [USGS](#).

If you have any remarks/questions about this newsletter or FruitLook in general, feel free to contact us at info@fruitlook.co.za. See you soon on FruitLook!

Best regards,

The FruitLook Team



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