



FruitLook January 2016: Happy New Year

Dear Mr. Doe,

We wish you all the best for 2016! We look forward to keep providing insight into your crop's growth and water usage via satellite technology. To get this year going we provide 5 practical easy-to-use tips to monitor your block via FruitLook!

5 easy ways to use FruitLook: A lot of information on the use of FruitLook can already be found in the [FruitLook newsletters](#) and the [FruitLook Manual](#). In this section we discuss 5 very simple ways to benefit. Via these tips you can easily track your block health, week after week:

1. Monitor crop vigor via the Vegetation Index: The Vegetation Index (= NDVI) is an indicator of the vitality of your crop and has a value between 0.2 and 0.85, with 0.85 being high density and high vigor. For fruit crops a slowly increasing or even flat Vegetation Index profile can be expected during the season. You can use the temporal profile to track your block development throughout the growth season; an example of a (relatively) 'typical' curve is depicted below. If a strong decline is visible (at least 0.15 or more in the last two weeks): check if something has changed in your block. Did you do extensive pruning, weeding, removing side-branches? Else, there might be a problem in your block for you to address.

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.

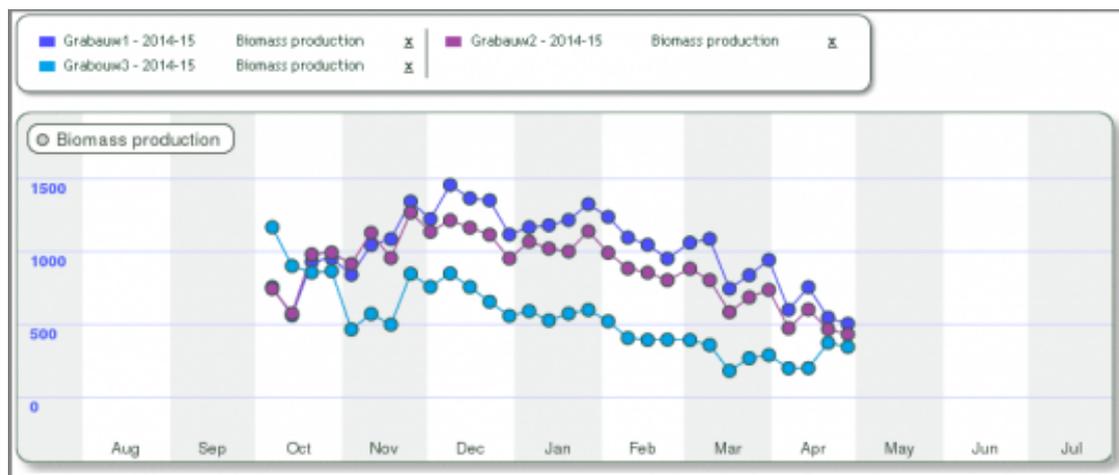


2. Investigate block homogeneity: Using the Biomass Production and/or Vegetation Index you can identify the weakest growth parts of your block. What causes this heterogeneity: can it be related to soil type? Or irrigation system design? Or maybe even a disease affecting part of your block? As example refer to the image below of a Cabernet Sauvignon block near Somerset West: clearly visible is the difference in crop vigor throughout the block. Taking into account spatial variation within your block can positively influence your management choices in the future, leading to a better crop and higher yield. For example, in wine grapes reoccurring variation can be used to determine harvest zones to create different wines from one block. Furthermore it can help you decide on locations for probes or where to place your bore-holes.



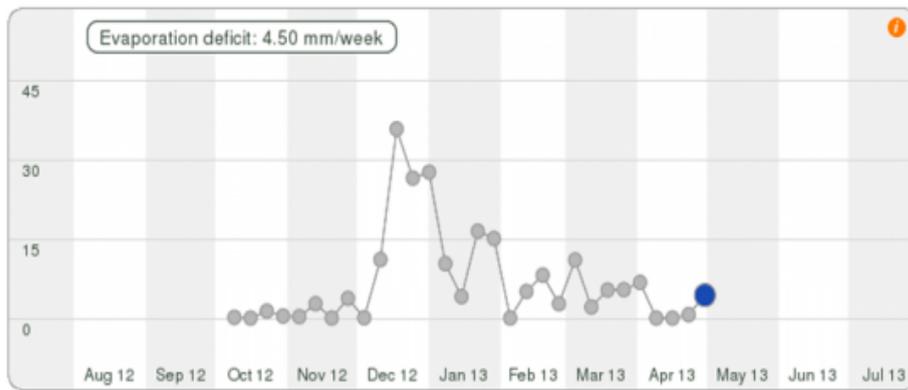
3. *Compare blocks*: The MyFields Analysis page allows comparison between different blocks, seasons and parameters in graphs and images. Using the Biomass Production, you can see which blocks are the strongest growers or are under-performing. Or which blocks are the most water efficient using the Biomass Water Use Efficiency parameter. To use this functionality:

1. Go to "MyFields Analysis". Select your season, field category, crop, field and parameter. Subsequently press "Add to graph".
2. An example output is depicted below. You can clearly see the biomass production in field "Grabouw3" deviates from "Grabouw1" and "Grabouw2".

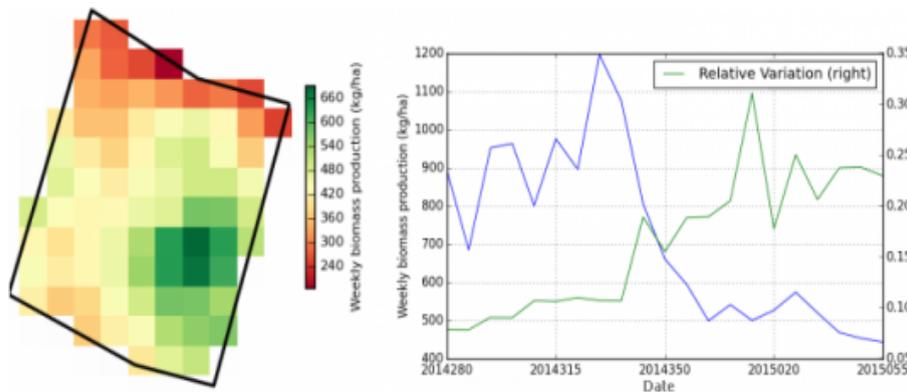


You can plot multiple parameters within one graph; this will help you understand the logical interactions between the parameters better. For example, a strong increase in Evapotranspiration Deficit will inevitably lead to a decrease in Actual Biomass Production.

4. *Check water stress via Evapotranspiration Deficit*: In the graph below you can see the Evapotranspiration deficit peaks multiple times per season for this block indicating stressful conditions which could damage yield. Via the Evapotranspiration Deficit parameter you can determine which fields are most affected by stress throughout the season. Evapotranspiration Deficit can be caused by insufficient irrigation, leading to water stress within your crop, or atmospheric conditions of such nature (high temperature, low humidity) that the stomata close which results in the tree not transpiring optimally. It provides an opportunity to evaluate your irrigation system and determine whether it is capable of applying the right amount of water to your field when the need is highest.



5. Use FruitSupport: What is easier than letting the computer monitor your blocks for you? FruitSupport is an electronic watch dog guarding crop development. Based on statistical analysis of the FruitLook dataset FruitSupport will warn you if something changes drastically in the spatial composition of a block. A sudden increase in internal variation of a block might be due to disease, pest, water deficit or other crop development issues. FruitSupport will email you after the weekly data products are delivered to FruitLook informing you on possible detections. FruitSupport is offered as freely usable test product during the 2015-16 season and can be ordered via the [FruitSupport](#)-page. An example email of FruitSupport can be found [HERE](#).



FruitSupport tracks the variation in growth throughout the growth season, depicted in the graph on the right. The development of variation through time is depicted in green. As can be seen this blocks shows a strong increase in relative variation from the middle of the growth season onwards, which might indicate a growth issue. This is even more likely considering the drop in biomass production, depicted on the left axis, which occurs simultaneously to this increase in variation.

If you have additional suggestions for FruitLook, feedback, questions etc., feel free to contact us via info@fruitlook.co.za. We hope to welcome you again soon on FruitLook!

The FruitLook Team



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