



FruitLook February 2019: How to identify a problem block

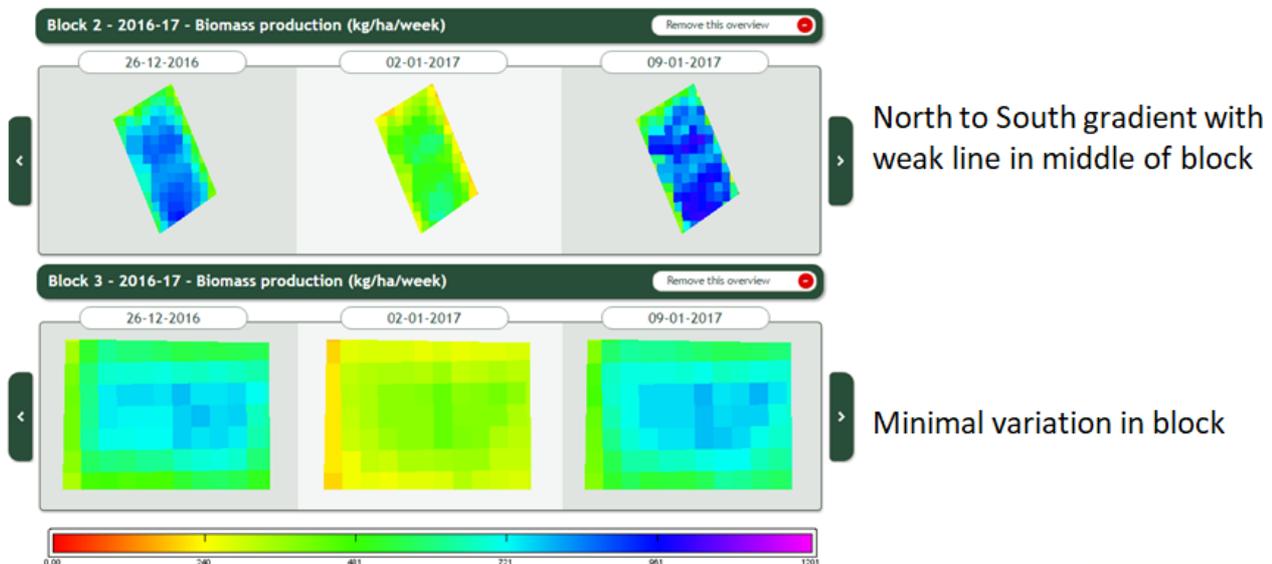
Dear Mr. Doe,

How can you identify a problem block *via* FruitLook? Before we answer that question, let us first define a problem block. In this newsletter, a problem block is: a block that significantly underperforms compared to other blocks resulting from a specific cause. Hence, this newsletter is not about optimizing block production in general but rather about identifying those blocks which at the end of the year could give you a headache. Blocks affected by a problem which, had it been detected in-time, might have been avoided.

In this newsletter we discuss 3 ways to detect a potential problem block. The first method is aimed at detecting a new problem appearing in a section of a block by looking at the spatial variation visible in the Biomass Production "pictures" over time. The second method is aimed at identifying blocks which show signs of sudden issues which affect the total productivity of a block using the Biomass Production graphs. The third method focuses on the identification of blocks with more fundamental production problems, via the Cumulative Biomass Production. All analyses are done in the [MyFields Analysis](#) section on the FruitLook website.

1. How to identify a problem in a section of a block? A production block is typically defined as a single management unit on your farm. This management unit undergoes similar treatment in irrigation, fertilizer and spraying. As result, the spatial variation in growth in this production block is often primarily the result of differences in soil. In-field variation can be detected by analyzing the spatial patterns of your block, via the biomass production maps in [MyFields Analysis \(Field Comparison\)](#).

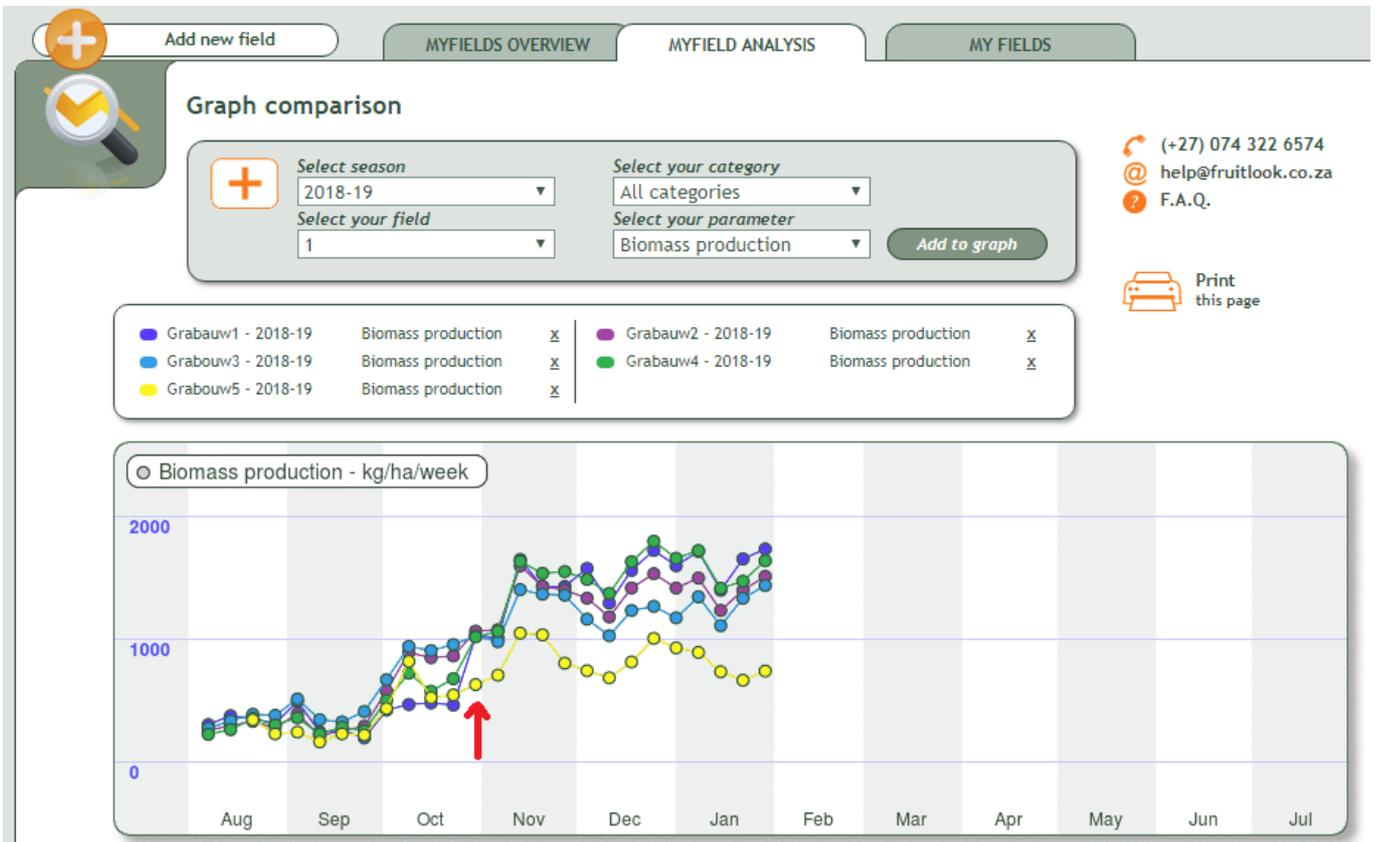
When the growth variation in a production block suddenly changes, this might indicate a production problem. It might be related to the onset of a disease, pest infestation, blockage of or leak in an irrigation valve or any other incident which caused one particular part of a block to deviate from the block norm. Similarly, it can also have a more harmless cause like extensive pruning, partial removal of cover crop or another management action [especially if the activity was not completed for the entire block at the time of satellite data capture]. It is still up to you as grower to evaluate the cause. In any case, by monitoring spatial patterns in your production blocks on a weekly basis, you might prevent unwelcome surprises before they affect the rest of your block!



PS: FruitSupport is based on the same principle as explained above. If you want to know more about FruitSupport, please read the section on FruitSupport on the website: <https://www.fruitlook.co.za/portal/product/show.cmd?id=88>. FruitSupport is openly available to our FruitLook users.

2. How to identify a sudden problem affecting productivity of a whole block? In this method, we focus on the use of the biomass production graphs. FruitLook growth includes that from roots, shoots, fruits, twigs, leaves and all in between (including cover crop and weeds). Growth is strongly influenced by crop health and block management, as well as climatic circumstances. Small variations in production from week-to-week are visible and often typical. These are most likely caused by variation in meteorological conditions. For example, during a cloudy week less solar energy for photosynthesis is available than in a week full of sunshine. These conditions will cause the Biomass Production to drop. The same holds for temperature: very high or very low temperatures will cause plant stress and limit crop growth.

So, how to detect an issue using this dataset? As stated above the biomass production is heavily influenced by climatic conditions. This means on one single farm, every production block should show more or less the same trend through the season - it increases and decreases in growth. When a block suddenly deviates from this trend, this might indicate a problem. In the example below, this farmer would have spotted that at end of October block "Grabouw 5" showed a sudden deviation from the general area trend. You can compare Biomass Production of various blocks in Graph Comparison in [MyFields Analysis](#). Whenever the Biomass Production of one of your blocks displays a negative trend compared to your other fields, make sure to visit the block soon to identify why this happens.

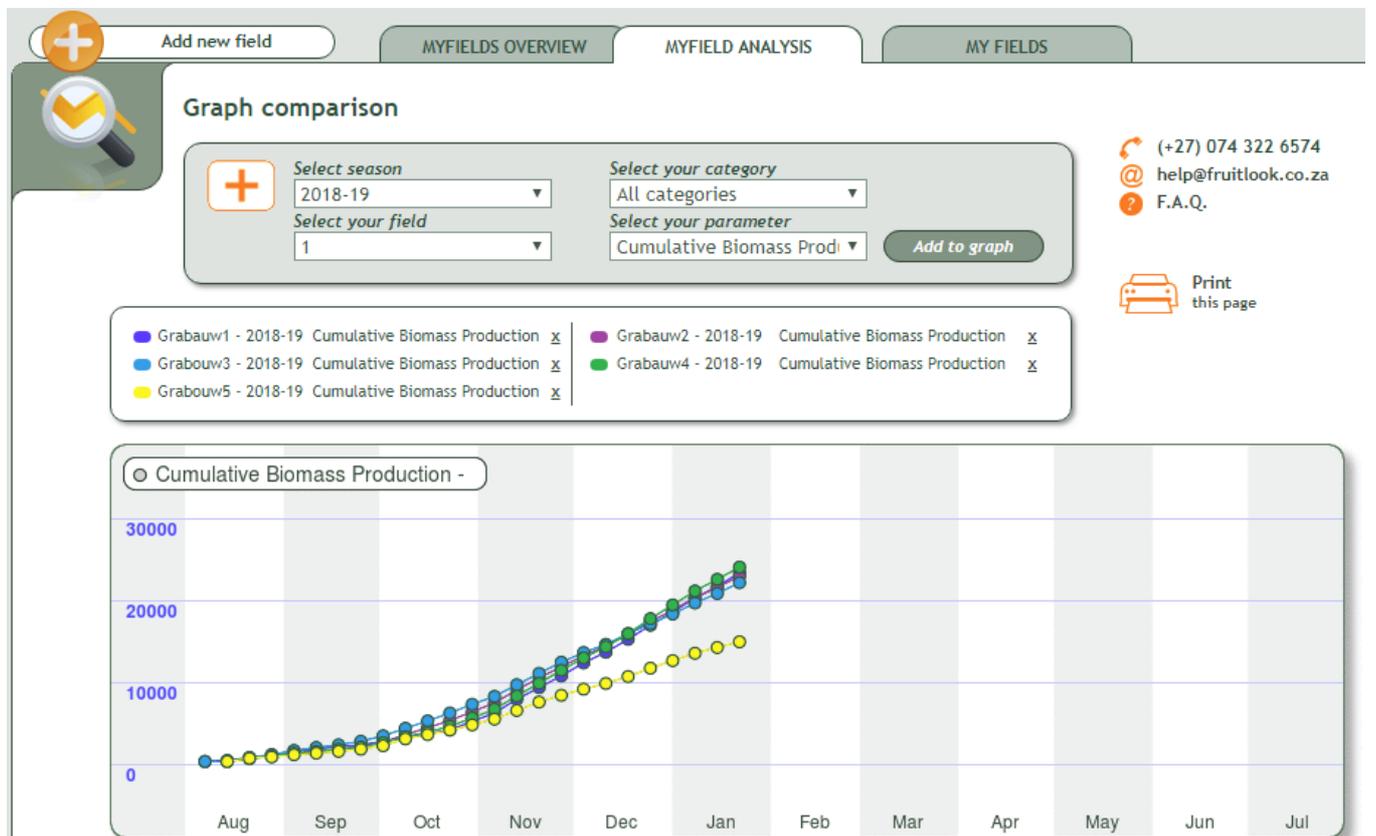


(+27) 074 322 6574
 help@fruitlook.co.za
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PS: You can also make this assessment in Excel. Export a .csv by clicking "Smart Export Field Data" on the MyFields Overview page (if you need help working with the .csv please contact us via (+27) 74 322 6574 or info@fruitlook.co.za!). In Excel, create a graph of the Biomass Production over the season of all your fields. How do they compare? A deviation from the general growth trend might indicate production issues!

3. How to identify a block which shows signs of a more fundamental growth problem? This method entails simply plotting the Cumulative Biomass Production via the Graph Comparison in MyFields Analysis. This enables you to make an objective comparison of average growth in all your production blocks over the season. Ensure you only compare blocks which are actually comparably; for example, with the same cultivar, age group, slope aspect, etc. When blocks grow substantially less than others over a longer period of time, it might indicate a more fundamental production problem. Finding out what causes these blocks to fall behind will surely bear fruit towards the future!



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PS: You might make this assessment via MyFields Overview as well by sorting the Cumulative Biomass Production parameter from high to low. Ensure you only compare blocks which are comparable by taking into account cultivar type, block age, trellis system and presence of cover crop - making use of the categories.

PS2: You can do this analysis on any of the other FruitLook datasets. By doing so, you can visualize which block consume (use) most water via evapotranspiration, which blocks are most water efficient and how blocks compare in terms of nitrogen content.

We hope these suggestions will be beneficial to you. If you want to further discuss these suggestions or want to learn more about using FruitLook data in general, you might consider contacting us *via* (+27) 74 322 6574 / info@fruitlook.co.za or attending one of our [Elsenburg training sessions](#). See you soon on FruitLook!

Best regards,

The FruitLook Team



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