

FruitLook for Efficient Farming

A changing climate, rising input costs and increased competition for water are challenging South African producers to attain higher yields with less water. In the Western Cape, FruitLook supports fruit and wine grape growers to do just that.

What is FruitLook?

- FruitLook is an open access online platform to monitor vineyards and orchards, building on satellite imagery and weather information. The FruitLook portal can be found on fruitlook.co.za.
- The complete dataset consists of information related to **crop growth**, **crop water use** and **leaf nitrogen content**.
- From **August to April** farmers can monitor overall block development. New information is provided every week.
- The **spatial pictures** help farmers to gain insight in the internal variation of a block.
- Via FruitLook the farmer is better informed on the performance of his farm. This supports farmers to make better decisions on farm resource management which will lead to **more (water) efficient** crop production and savings.

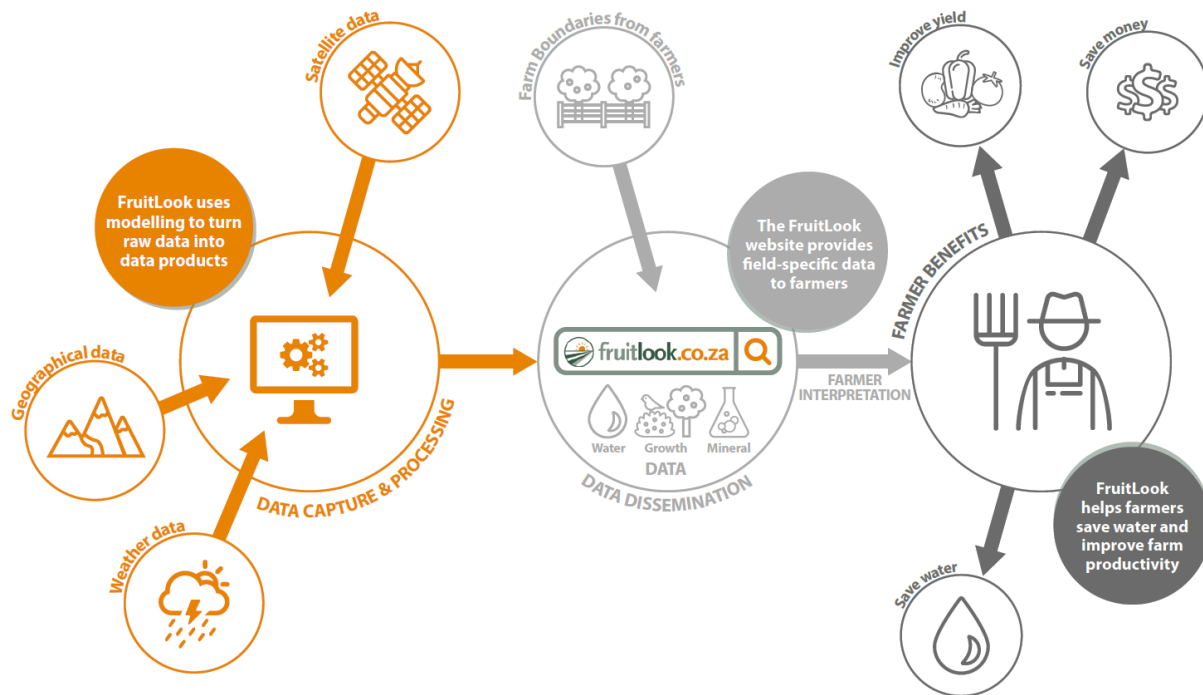
Information provided via FruitLook	
Growth Parameters	Unit
Biomass Production	kg/ha/week
Cumulative Biomass Production	kg/ha
Leaf Area Index	-
Vegetation Index	-
Crop water use Parameters	Unit
Actual Evapotranspiration	mm/ week
Evapotranspiration Deficit	mm/ week
Biomass Water Use Efficiency	Kg /m ³
Mineral Parameters	Unit
Nitrogen content in top leaf layer	kg/ha
Nitrogen content all leaves	kg/ha

Facts on FruitLook

- FruitLook has been initiated by the **Western Cape Department of Agriculture** in January 2012, with financial support from Hortgro and the Integrated Application Promotion Program of the European Space Agency.
- FruitLook 2017-18 is **the seventh season in a row**. The service is currently fully funded by the Western Cape Department of Agriculture. Users have access to all historical data via the website.
- FruitLook covers the main fruit production areas of the Western Cape. Close to **200 000 hectares (ha)** of fruit crop data is available each week.
- FruitLook provides information on 105 000ha of **wine grapes**, 12 500ha of **table grapes**, 30 500ha of **deciduous fruit**, 12 000ha of **citrus** and 21 000ha of **stone fruit**.
- FruitLook 2016-17 supported over **450 active users** who accessed more than **35 000 hectares** of satellite based information on a field by field basis.

- Following the FruitLook 2014-15 season, more than half of the respondents to a questionnaire indicated their **water use efficiency** increased by **10 to 30%** due to FruitLook.
- Agricultural economists of the Department of Agriculture shows the average farmer can earn an additional R7 036 (wine grapes) to R25 630 (deciduous fruits) to R33 858 (table grapes) per hectare if a 10% input savings and 10% yield increase can be achieved. FruitLook can help achieve this potential.

How does FruitLook generate this data?



How can you use FruitLook?

- Via FruitLook users can monitor crop production during the growth season. Blocks can be compared spatially and through time to **detect growth deficiencies and anomalies**.
- FruitLook can help **evaluate irrigation management**, both in quantity and distribution. Via the Evapotranspiration Deficit parameter users can identify fields most affected by stress (water, heat, physiological, disease) throughout the season.
- Via the Biomass Water Use Efficiency users can identify which block produces most growth (crop included) with the least amount of water. It provides an indication of **the efficiency of irrigation**.
- Reoccurring trends in maps of Biomass Production and Evapotranspiration Deficit maps are closely linked to variations in soil within a block. This helps users make better decisions on **soil moisture probe placement** and **irrigation system design**. Also, it can aid in **smart sampling** and harvesting of fruits.
- Disease infected blocks show on average less growth than healthy blocks. The farmer can use FruitLook to **delineate infected areas** within a block. By limiting pesticide application to these areas, resources are more efficiently used and the environment is less affected.