

C-CROP

See Your Crop

Precise measurements for crop optimization

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Confidential

Efficacy of production pipelines in the world

Agriculture is the largest pipeline WW with the lowest monitoring





- Every step is defined? No
- Every step is quantified? No
- Every step is monitored? No
- Is the pipeline optimal? Unknow
- Do we know the potential? No
- Can we improve it?

Yes - with the right data 😊



Computer vision for yield measurements

Impossible to measure yield components by eyes!





From early fruit development to harvest – all the parameters!



- ✓ Cluster density
- ✓ Cluster size
- ✓ Number of berries
- ✓ Berries size and weight
- ✓ Yield estimation throughout the season



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C-Crop first product





Taking short videos using C-Crop application

In a short time, you will a receive detailed phenotypic reports

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Farming as a production line



Technology is Validated

- More than 70 vineyards cross Israel & SA, more than 1500 acres
- >20 varieties
- Development stage: 4- 35 mm berries size until ripening
- Tested parameters: fruits counts & size
- Accuracy >90% (field conditions)

Examples of results



Clusters density - manual measurements



Clusters length (cm) - manual measurements





Pilot with Tali Grapes - Israel

Use case - impact of C-Crop technology

Actual yield - 2.24 t/ 0.1ha

<u>Yield estimation</u> –2.4 t/ 0.1ha, Lowest sub plot - 20% less yield

<u>Cluster density</u> – 16.8 c/m, Lowest sub plot - 17% less clusters







Pilot with Tali Grapes - Israel

Use case - impact of C-Crop technology

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Vield estimation accuracy - 97%

- ✓ Sub-plot analysis
- ✓ Additional profit \$20K/ha







Optimal

Too Low Too High



Grapevine, Jordan Valley IL, season 2022

Grape example

Cluster management to increase profit

- Too low loss potential yield
- Optimal optimal yield and quality
- Too high low quality



By using C-Crop technology accurate thinning become possible for the first time! Farmer profit increases by ~50%





Pilots with growers – South Africa, 2023



Case study plot 1006 – yield performance within sub plots



- 4 ha plot, on the map three sub plots that were identified by statistical clustering analysis:
 - Blue sub plot of 1.4 ha with 2.2 ton / 0.1 ha.
 - Green sub plot of 2.0 ha with 1.81 ton / 0.1 ha
 - Red sub plot of 0.6 ha with 1.32 ton / 0.1 ha
 - Max difference: 0.9 ton per 0.1 ha

Can we explain these differences? Yes

The sub plot with the highest yield has

- 40% more clusters
- 35% more berries

compared to the lowest sub-plot

 In addition, two irrigation systems in the plot are divided as the yield is clustered (green vs. blue and red)



Pilot in South Africa



Clusters density pre /post thinning



- For 8 plots we preformed standard sampling (50-120 samples / hectare) covering the entire plots.
- Plots 60-67 were after thinning, desired density 8-10 clusters / m.
- Plots 70 73 were before thinning.
- Plots before thinning only 20%, 10% -23% of the plots area is in the desired density
- Plots after thinning only third, 11%-45% of the of the area is in the desired density.

Best farms: 2/3 of the area with sub-optimal thinning

Pilot with Tali Grapes – Israel

Results comparing digital yield estimation to actual yield

Comparison between yield of 17 vineyards plots, ~14 ha in the Judean lowland area

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- Compared yield as was calculated from the videos samples to actual yield as was measured in the packing house
- The samples were taken 14 to 40 day before harvest (~80 – 110 days after fruit setting)
- 10 varieties green, red, black
- The videos were taken by 3 photographers
- 70-120 videos per hectare







Examples of plots sampling





Simple & Easy to Use

Grape growers are taking photo in motion* in the vineyards by using our technology installed on their smartphone to obtain a precise measurement of yield

* Currently ability to take photo in a speed of 3 km/h









C-Crop Unique Value Proposition All in One!



Simple

- Any field condition
- **For none experts**
- Multiple functionalities in one click
- ✓ Just download app and take video
- ✓ Movement

Cost effective

- ✓ Pay only as much as you use, less than 1% from farmer costs
- ✓ Flexible, select best option from several attractive packages
- ✓ Renewable subscription



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High accuracy

> 2 mm objects

> 90% confidence

- ✓ Detect hidden organs
- ✓ Get results in minutes



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