CONFRONTING CLIMATE CHANGE
A SOUTH AFRICAN FRUIT & WINE INITIATIVE

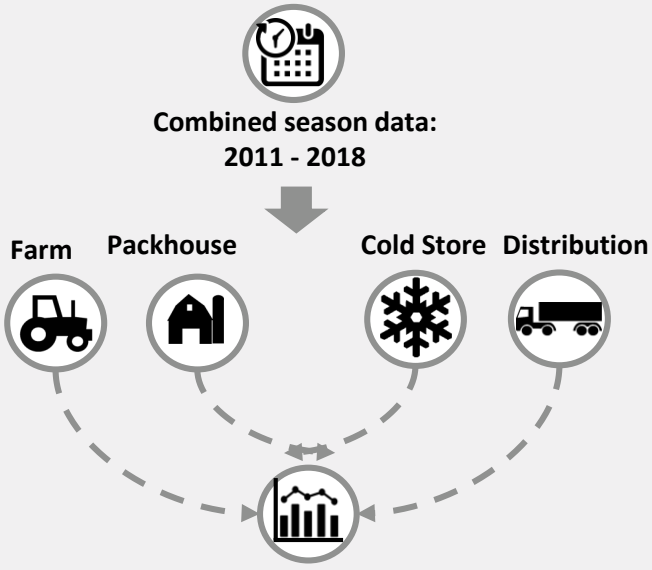
Benchmark Report 2019

South African Stone Fruit

Introduction

The 2019 Confronting Climate Change (CCC) industry benchmark process builds on 2017 - 2018 datasets and provides a meaningful platform for the South African fruit and wine industries to improve their understanding of the use of fossil fuel-based resources and to reduce emissions over time.

The seven years combined season data (2011 – 2018) for stone fruit was used for the assessment and was analyzed based on the following business boundaries: farm, packhouse, cold store and distribution.



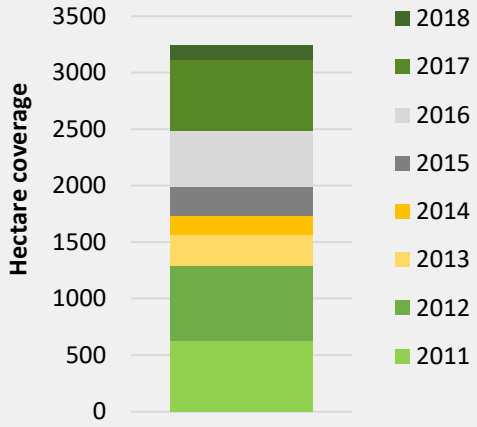
About the benchmark data

The CCC benchmark reports use combined season data from 2011 – 2018 to provide an industry-specific CO_2e benchmark. Users who calculate their carbon footprint using the CCC online carbon calculator have the option to submit their data for grading. This grading is undertaken by the CCC technical team who work with the user to ensure that all data is correctly entered and accurately reflects the entity's operations. In order to ensure the quality and accuracy of the benchmark results, only graded datasets are included in the benchmark calculation.

The benchmark values are determined using the mean value of graded datasets in the CCC database. To further ensure the accuracy of the benchmark, values falling beyond 1.5 times the standard deviation of the mean of the normally distributed dataset are considered outliers and are excluded from the benchmark calculation. All results are shown in the internationally accepted form of **kilograms of carbon dioxide equivalent per unit (kg CO_2e/kg fruit).** More detailed information can be requested from the Confronting Climate Change Initiative.

FARM CO_2e BENCHMARK

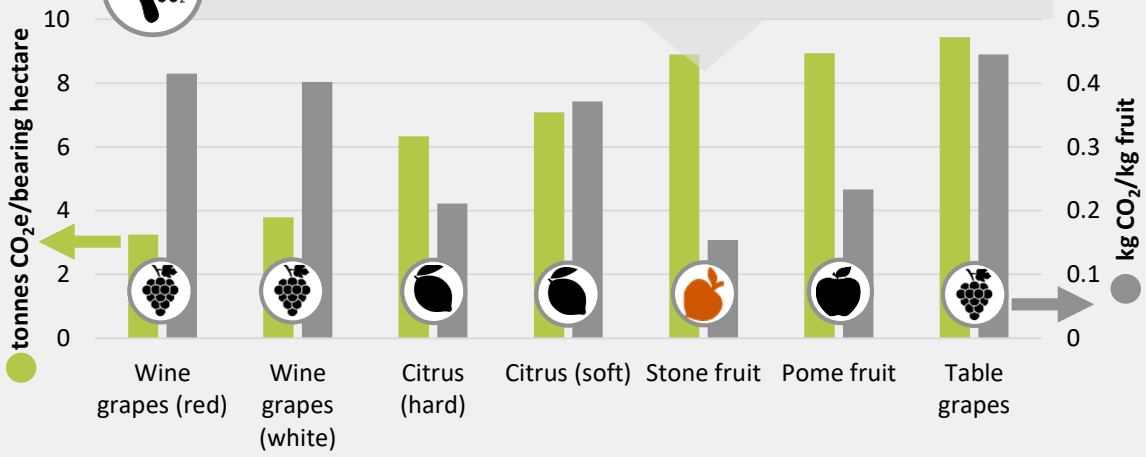
From 2011 to 2018 the CCC database (incl. graded + ungraded data) has grown to cover **3239** unique hectares of stone fruit farms in South Africa. This represents **19%** of the stone fruit industry in the country.

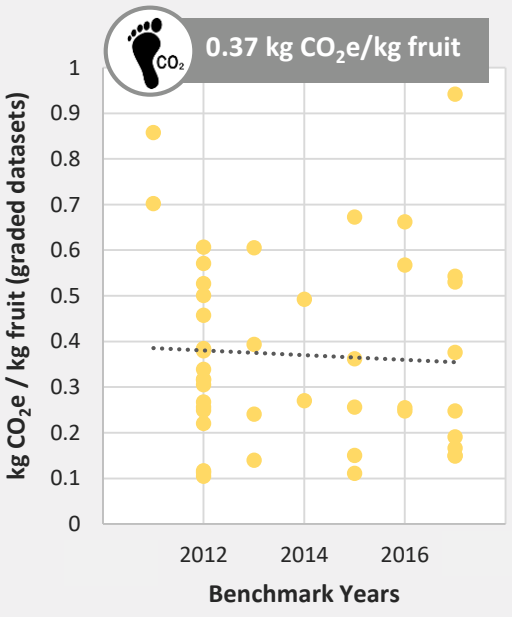


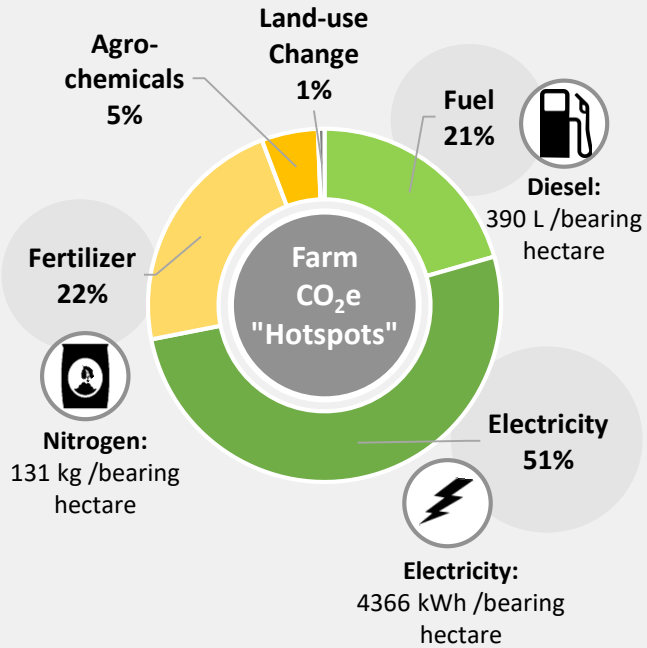
Which regions participate in the CCC Initiative?

	Industry Ha	CCC Ha	%
Somerset West	83	64.6	78%
Grabouw/Groenland/Elgin	102	63.6	62%
Ceres/PA Hamlet	2634	1526	58%
Stellenbosch	480	247	52%
Wolseley/Tulbagh	1515	465	31%
Mpumalanga	182	52.0	29%
Northern Provinces	490	107	22%
Paarl/Wellington	1412	247	17%
Vyeboom/Villiersdorp	366	62.5	17%
Franschoek	387	52.7	14%
Langkloof	540	64.9	12%
Klein Karoo	7113	264	4%
Worcester	818	17.5	2%
Piketberg	521	5.39	1%

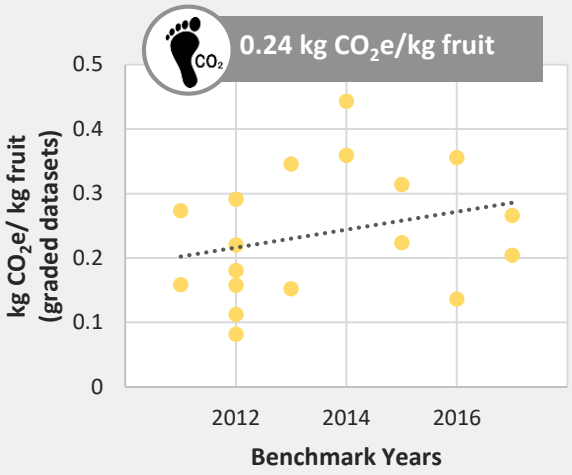
How do we compare against other commodities?

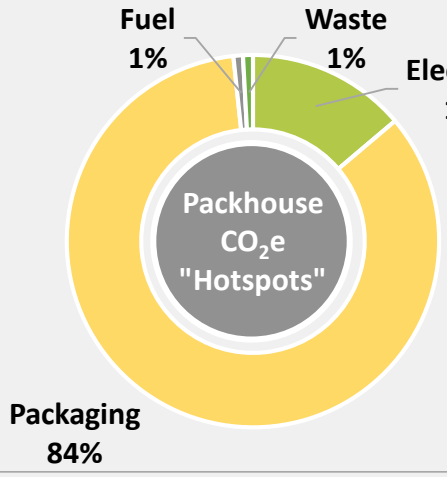




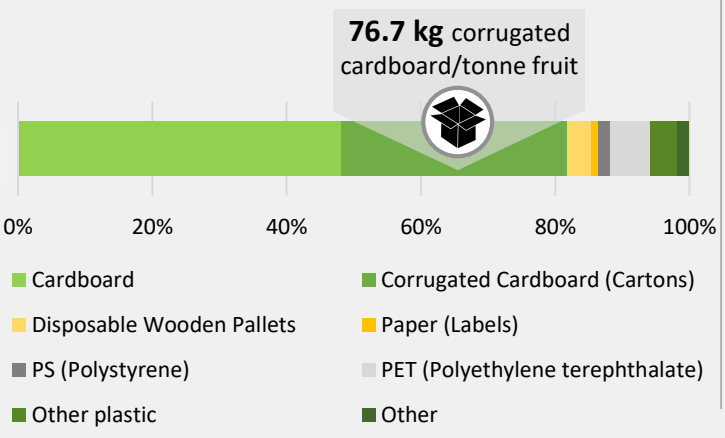


PACKHOUSE CO_2e BENCHMARK





Where are the CO_2e emissions from packaging coming from?

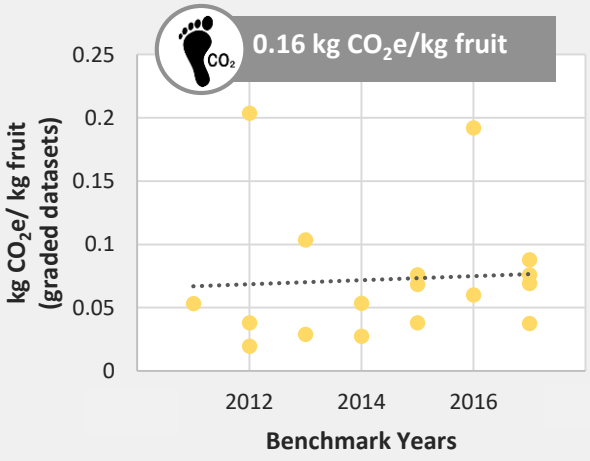


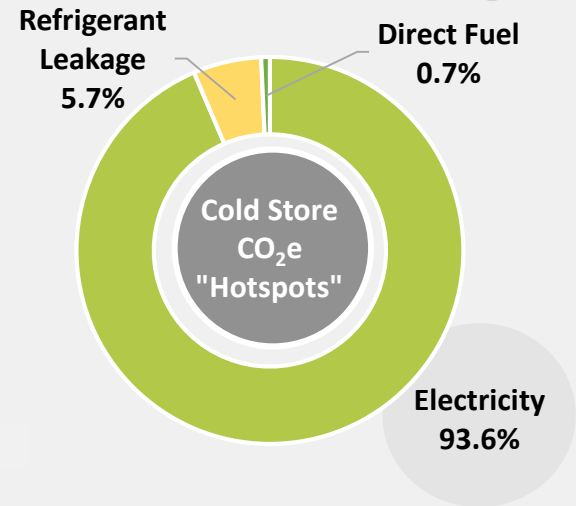
Electricity is the second highest contributor to packhouse CO_2 emissions after packaging.

Average consumption is **32.5 kWh/tonne fruit stored**.

Currently, **100%** of the electricity used by participating packhouses is **grid electricity.**

COLD STORE CO_2e BENCHMARK





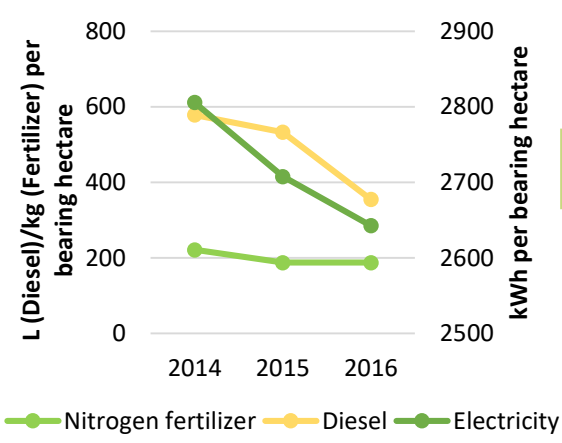
Electricity is the highest contributor to cold store CO_2 emissions, followed by refrigerant leakage.

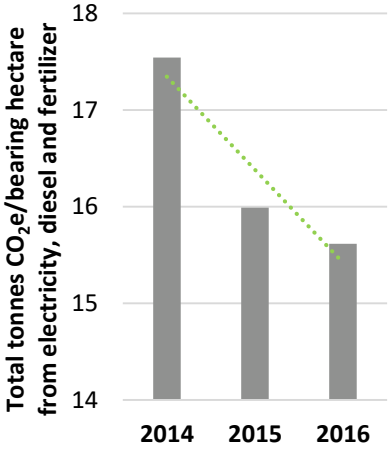
Average electricity consumption is **59.3 kWh/tonne fruit stored**.

HOW CAN I MANAGE MY CO_2 EMISSIONS?

Reducing your CO_2 emissions at farm level does not necessarily require capital intensive investments into renewable energy or highly efficient farm equipment. The way that you manage your farm also has the potential to bring your CO_2 emissions down.

Trends in data submitted to the CCC initiative show how improvements in electricity, fertilizer and diesel efficiencies can result in a significant reduction in carbon emissions. As shown below, on an individual farm basis, improvements in input efficiency can result in carbon savings of 1.93 tonnes CO_2e per bearing hectare.





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Disclaimer: The results shown in this report represent the approved data points of the CCC stone fruit sample group representing combined data from the seven year seasonal period of 2011-2018. In line with the leading international carbon footprinting protocol of PAS 2050-1:2012, a three year period is required to reflect seasonal and production variances. The data range now covers the required three year period, and therefore accounts for seasonal and production variances. However, the data range of the sample is not yet representative of the industry at large. Due to this consideration, the results should NOT be distributed on behalf of or representing the South African stone fruit industry. It is aimed to be used as an internal evaluation exercise for those South African producers and exporters wanting to compare their carbon footprint results with the CCC regional sample group averages. This report is authored by Anel Blignaut and Clare Rodseth of Blue North Sustainability (Pty) Ltd. For more information please contact the CCC Project Leader Anel Blignaut at anel@bluenorth.co.za..