

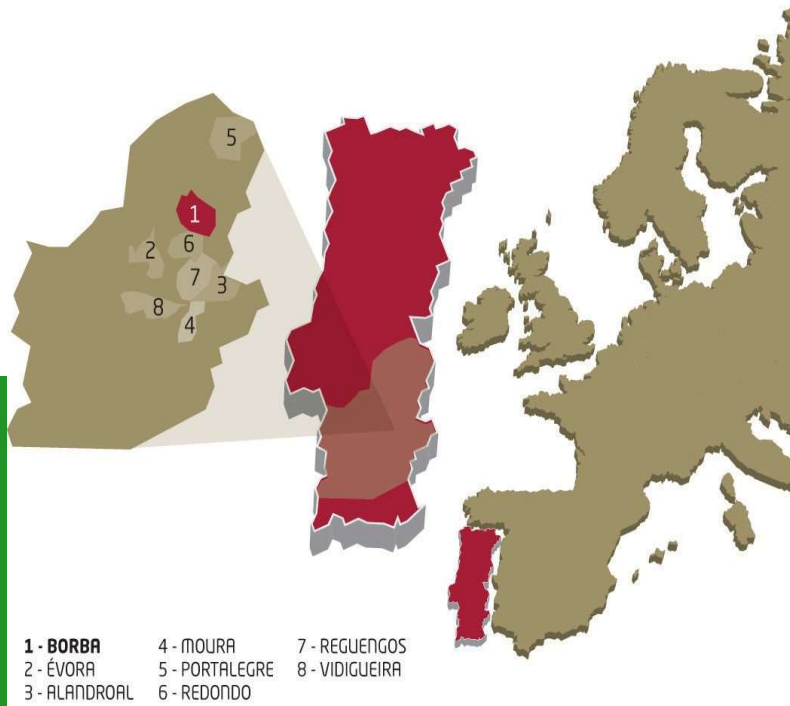


**CIRCULAR ECONOMY IN ALENTEJO
REGION WINE PRODUCTION - ADEGA DE
BORBA WINERY**

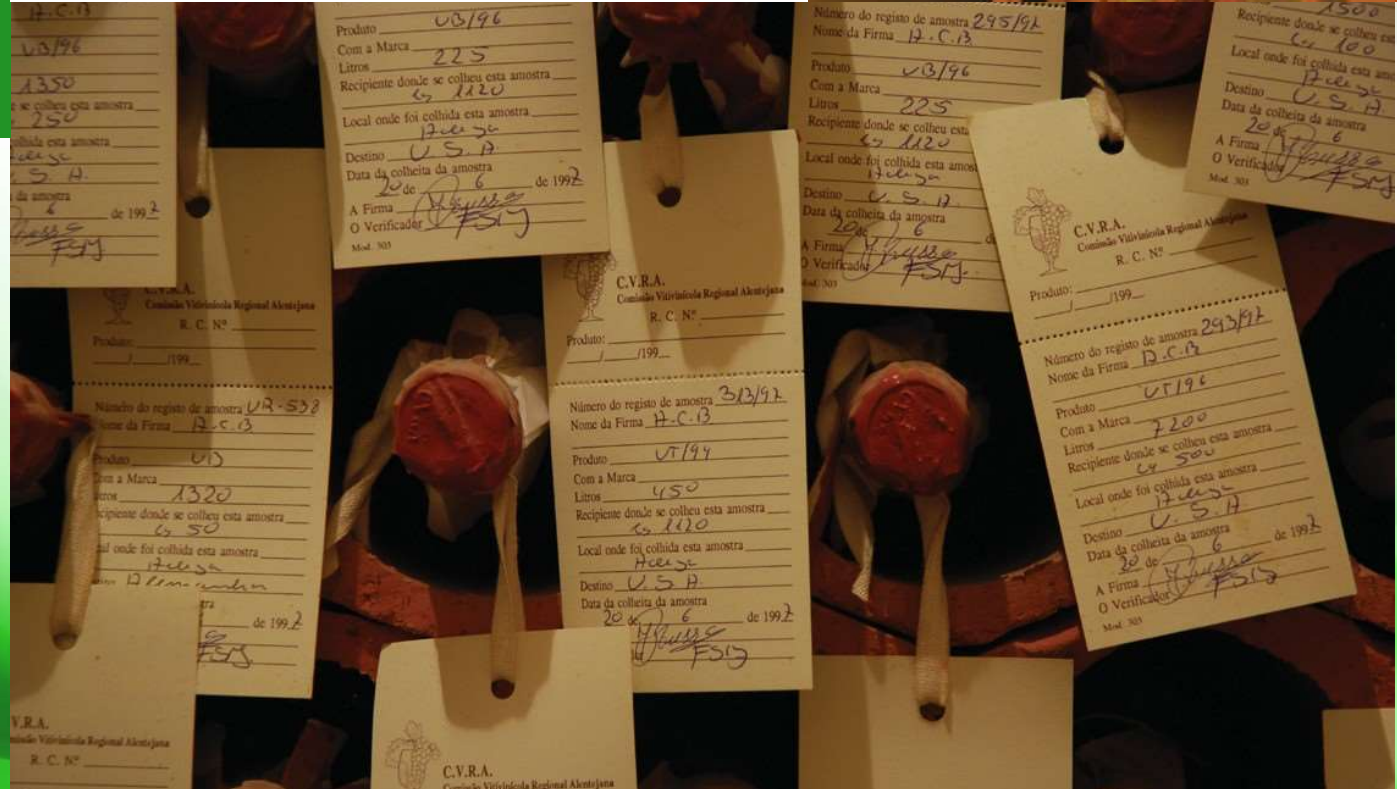


Adega de Borba

Founded in 1955 the Adega de Borba was one of the first wineries to be established in Alentejo



- 1 - BORBA
- 2 - ÉVORA
- 3 - ALANDROAL
- 4 - MOURA
- 5 - PORTALEGRE
- 6 - REDONDO
- 7 - REGUENGOS
- 8 - VIDIGUEIRA



ADEGA
DE BORBA
Established 1955



Adega de Borba

Owens 2.300 hectares of vineyards with 30 different grape varieties. Represents and it owns 10% of the total Alentejo vineyard area





Adega de Borba

The average annual production is 13.000.000 liters.

Average annual production is 11.000.000 units

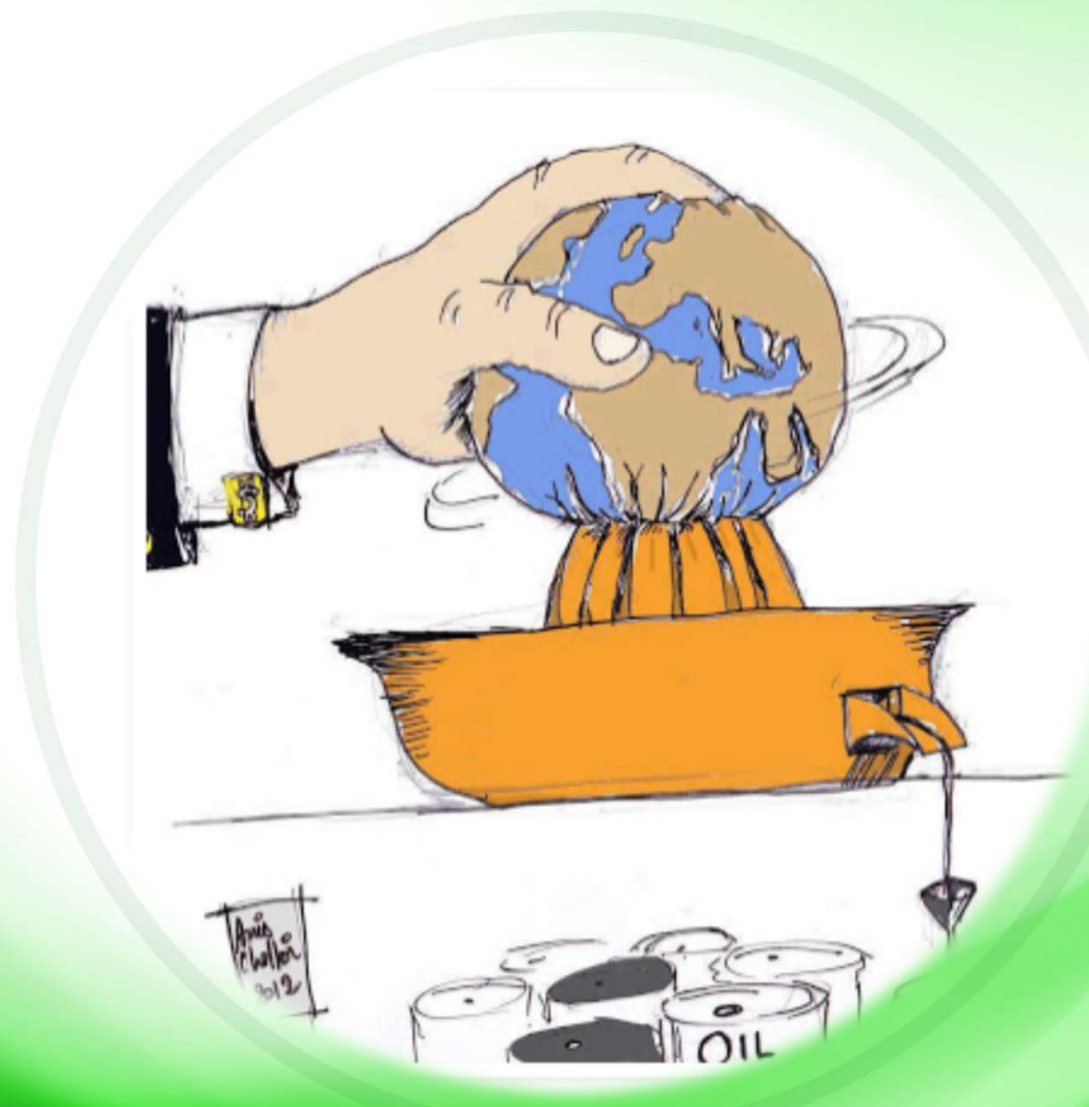


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Circular Economy?

Resources are not unlimited





Circular Economy?

What Happens? (If we do nothing)



Resources are less and less

Soil, water, fossil energies and raw materials



Raw Materials prices will continue to rise

In last years, card boxes (for wine transport) cost went up more than 20%



Environmental pressures increase

Clima changes, loss of biodiversity, oceans pollution, land degradation tend to intensify



Economy costs tend to going up

Mobility, food, construction



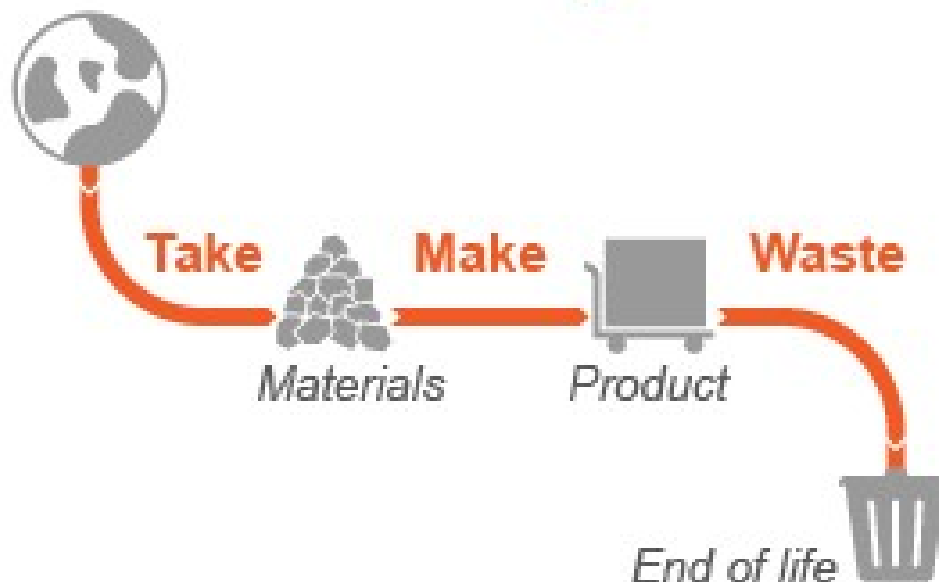
Circular Economy

Sustainable development model that allows materials to be returned to the production cycle through reuse, recovery, repair and recycling, ensuring greater efficiency in their use and management of resources, greater sustainability on the planet and greater well-being of the populations

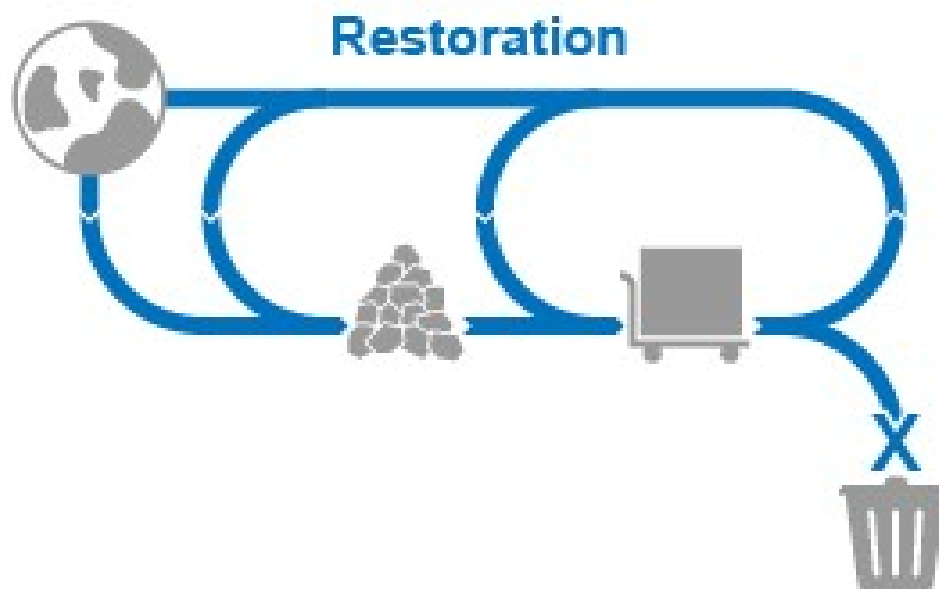


ADEGA
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The linear economy



The circular economy





Adega de Borba Práticas Sustentáveis

Committed to produce grapes and wines sustainably preserving our environmental resources and promote the social well-being of our employees in surrounding communities.

Water Use
Energetic Efficiency
Vineyard Integrated Production
Packaging, Transport and Waste Footprint



BORBA+SUSTAINABILITY

BEST PRACTICES

In order to decrease Energy and Water consumption:

- A) The roofing of the new winery is entirely covered by 12 thousand m² plants in a combination of Sedum, planted on a waterproof substrate (Figure 1).
- B) Use of "Ganimede ®" stainless steel tanks. This tanks use the energy from the carbon dioxide produced by the fermentation process, allowing re-stirring cycles without the use of pumps (Figure 2).
- C) Executing Simple Ideas, like installing a recovery and recycling system to rinse water from bottling lines, to the winery wash network. (Figure 3A).
 Install skylights in bottling lines to reduce energy consumption and improve working environment with natural light (Figure 3C).
 Traditional light lamps replacement by LED spotlights, with higher brightness and lower power consumption.
 Solar panel installation to heat bottling lines washing water and filtration equipment water (Figure 3B).

In order to produce sustainable Grapes for our Wines:

- D) Promotion and technical advice to our vine growers to develop integrated farming and sustainable practices in the vineyards (ex. natural cover cropping systems between the rows, using organic compound produced by vine steems. (Figures 4A e 4B).



Figure 1: Green Roof



Figure 2: "Ganimede ®" Tanks – Energy Recyclers

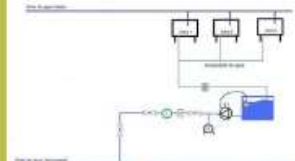


Figure 3A: Rinse Water recovery & recycling system – Bottling Lines



Figure 3B: Solar Panels



Figure 3C: Skylights installation – Reducing Energy Consumption and Improving Working Environment



Figure 4A: Natural Vineyard Cover Cropping Systems



Figure 4B: Organic Compound Fertilizer from Vine Stems

RESULTS

By adopting Best Practices

- A) O Green Roof allows:
 - Duplicate the lifetime of the building's roofing;
 - Increase the sound isolation above 8 dB;
 - Contribute to the reduction of the temperature in the building above 3 °C;
 - Reduces energy costs above 14,5 Kwh/m²/year.
- C) Water Recovery and recycling saves 360 m³ water/year.
 With the skylights we want to reduce the number of hours of artificial light in 50% in two years.

B) Use of "Ganimede ®" stainless steel tanks allows to recycle energy - Produced CO₂ during fermentation (40-50 L CO₂/L must) is used to re-stirring must during fermentation saving 3 times more energy than with traditional pumps.

D) Integrated Farming Certification of 117 winegrowers, corresponding 1.657 vineyard hectares.



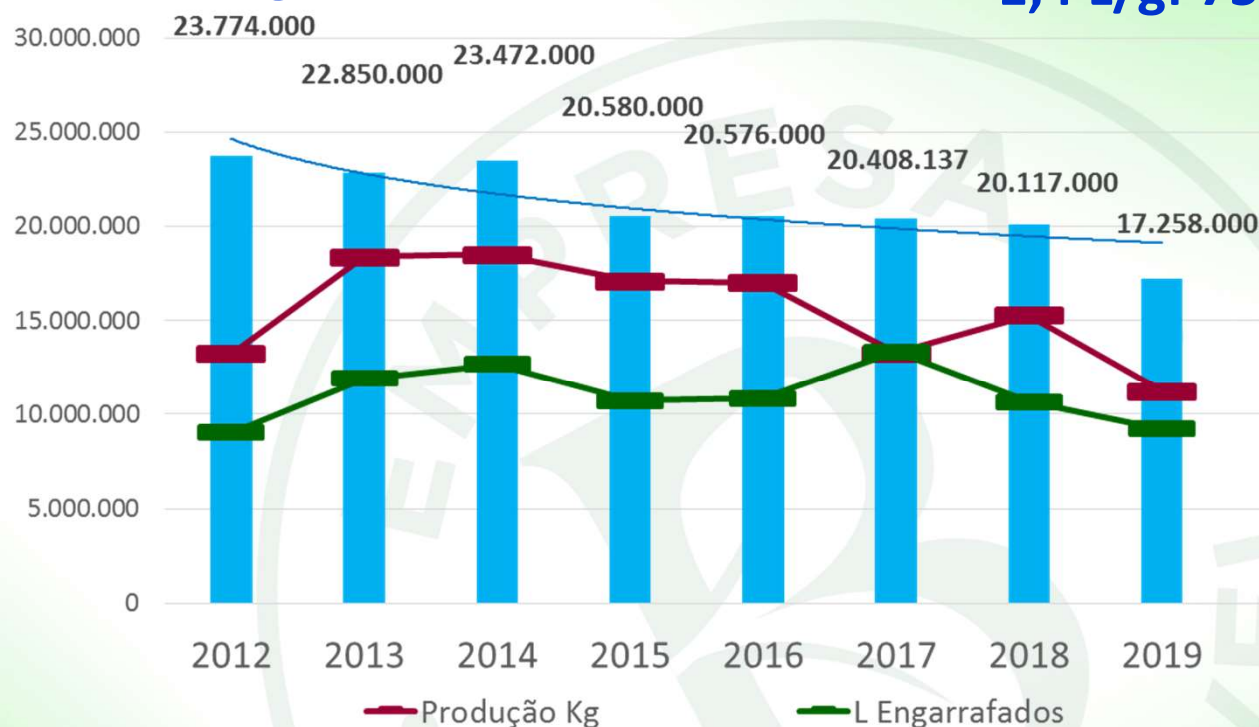
Water Efficiency

A água é um recurso essencial e limitado que é necessário gerir com sabedoria



2,0 L/gf 75cL

1,4 L/gf 75cL



EVOLUÇÃO CONSUMO TOTAL DE ÁGUA NA ADEGA (Litros)

-28% (in total consumption in 8 years)

-23% L/gf 75cL (in L/bottle 75cL ratio in 8 years)



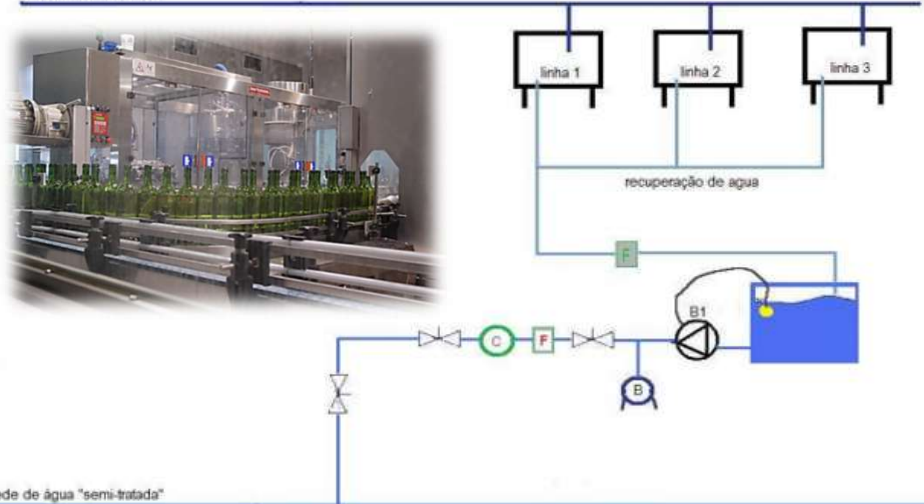
Water efficiency

Reusing waste waters

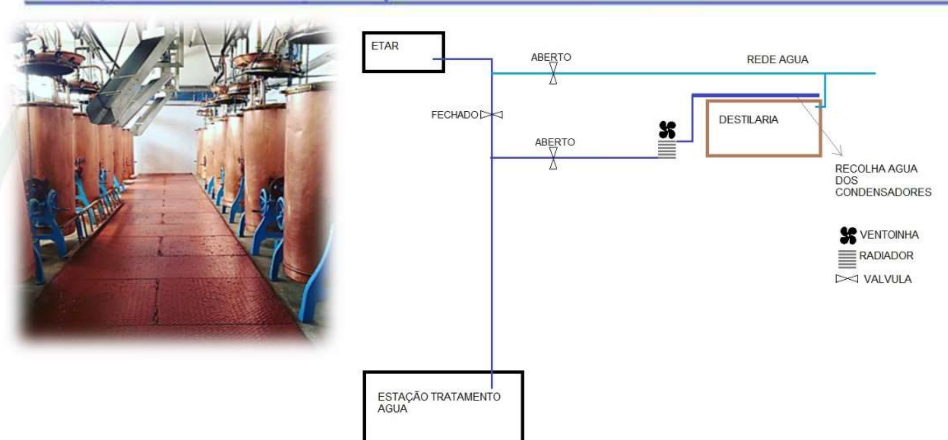
+ 800.000L H₂O em 2019



Rede de água tratada



Rede de água "semi-tratada"





Water efficiency

Rainwater recovery and use
= 135.000L H₂O 2018/2019





Energetic Efficiency

Energy is expensive and has an impact greenhouse gases emission => Adoption of practices to reduce consumption, use of renewable energy and energy reuse





Waste

Reduce Environmental Impact





Waste

Composting => Incorporation of materials in the environment





Resíduos

Compostagem => Incorporação dos materiais no ambiente

Produção anual 120 Ton /ano => Manutenção espaços verdes Adega





Vineyards-Integrated Production

Adoption of practices with less environmental impact



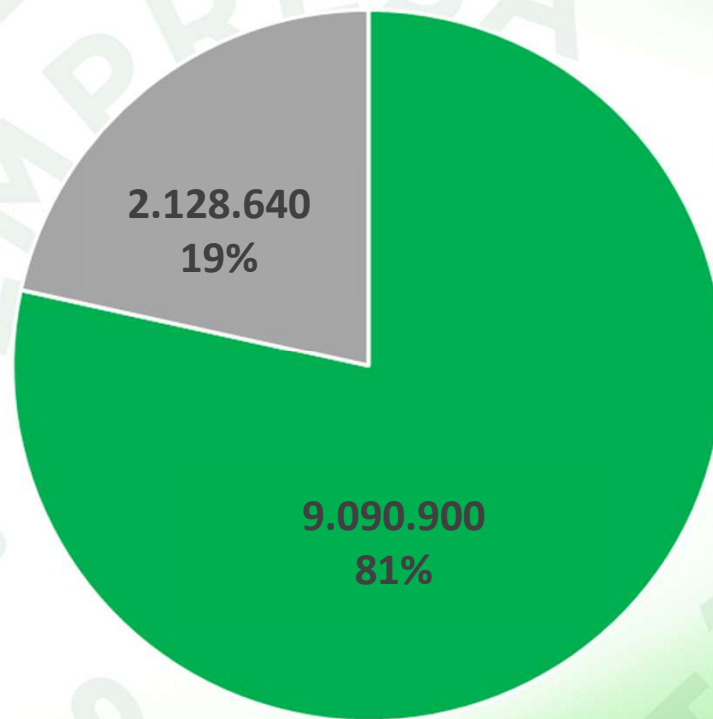
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Vineyards-Integrated Production

Adoption of practices with less environmental impact

Kg Uva 2019 – Sistema de Produção



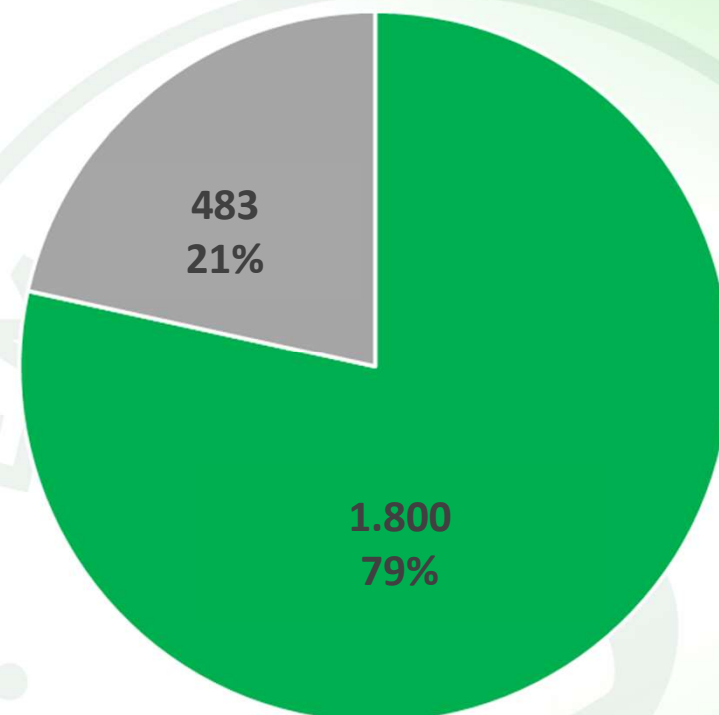
■ PRODI ■ Convencional



Área Vinha 2019 (Ha) – Sistema de Produção

Vineyards-Integrated Production

Adoption of practices with less environmental impact



■ PRODI ■ Convencional



Muito Obrigada...

