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SOLUTIONS TEMPLATE

TITLE: Waste Water Treatment Plant: Casa Relvas

KEYWORDS: (Water recycling and reuse, water use reduction, wastewater treatment)

APPLIED TO: (Winery, Vineyards)

INFORMATION SOURCE: Casa Relvas. Casa Relvas is a family company based and managed in Alentejo. For 5 generations the Relvas Family has cultivated over 1300 ha in the region: 350 ha of vineyards, 350 ha of olive groves and 900 ha of forest. Casa Relvas is today one of the main wine producers in Alentejo exporting more than 5M bottles of wine to the 5 continents.

Address: n/a

Website: <https://casarelvas.pt/>

Email contact: n/a

Date: 01/09/2017

COUNTRY: Spain

REGION: Alentejo

EXECUTIVE SUMMARY:

To deal with low water availability, water flow meters were installed to understand water consumption and identify opportunities to reduce water use before it reached the Waste Water Treatment Plant. Secondly, waste water is treated on site to transform it from industrial to domestic effluent. This is then channelled to the municipal waste water treatment plant (WWTP) where it is further treated before being discharged for reuse for vineyard irrigation.

SGD (SUSTAINABLE DEVELOPMENT GOAL):



REASON WHY/MOTIVATION/BACKGROUND:

Water is scarce in Alentejo and in years of drought the water reserves at Herdade da Pimenta cannot fully support a good irrigation in the vineyards. Therefore, the ability to recycle water to irrigation is valuable.



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PROJECT DESCRIPTION:

Being in a dry region such as Alentejo, water management is one of the main concerns of Casa Relvas. After implementing measures that allowed us to reduce the amount of water used per bottle produced to 1.5L, we had the opportunity to develop with Águas do Centro Alentejo a water recycling project.

This project had two phases of implementation:

- The first one was continuous. Included the installation of flow meters at various production points to evaluate the water consumption and the implementation of strategies aimed at reducing the use of water as well as its reuse before it reaches the (Waste Water Treatment Plant) WWTP;
- The second one was to use the water from São Miguel de Machede Municipal Wastewater Treatment Plant to irrigate the vineyards at Herdade da Pimenta, which had the following trial period.

In our WWTP, to do the initial treatment, before sending the effluent to the municipal outfall that will take it to the São Miguel WWTP, we have the following processes:

- Elevation of the effluent;
- Refine the pH;
- Equalization;
- Primary decanters;
- Biological reactor;
- Secondary decanter;
- Sludge thickener

Basically, this Water Waste Treatment Plant has a biological treatment process. There are several phases of treatment in order to homogenize the effluent and create constant and favorable conditions of nutrition, pH and organic matter for the microorganisms responsible for decomposing and treating the effluent.

Casa Relvas WWTP receives between 30 to 60 cubic meters of effluent, performs a first treatment that allows transforming the industrial effluent into domestic effluent. Afterwards, it is rejected in a municipal branch line that gathers both the effluent from our WWTP and the one from Aldeia de São Miguel de Machede.

This effluent is channelled to the municipal WWTP operated by Águas de Portugal, which treats it so that it can be discharged into the hydric environment.



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Given the proximity of the Herdade da Pimenta water reserves and the WWTP, we decided to receive the water in the water reserve first and then use it for irrigation of the vineyards.

BENEFITS/ACHIEVEMENTS:

Reuse of about 80 cubic meters of water per day to irrigate the vineyards

LESSONS LEARNED:

n/a

NEXT STEPS:

Officialise and effectively operationalise the reuse of water from the WWTP

POTENTIAL FOR REPLICATION:

The use of flow meters to understand water use is highly replicable.

Replication for wastewater recycling is possible whenever there is storage capacity and options for reusing this type of water.

SOURCES OF INFORMATION/SUPPORT:

ADDITIONAL COMMENTS:

INDEPENDENT COMMENTS (WC, RS)

The author says they have reduced the amount of water used per bottle produced to 1.5L. It would be interesting to know the value before the project.

It is difficult to visualise the project from the description. For example, how far away is the Municipal Waste Water Treatment plant from the vineyard or the water reserve. Were they already connected or how much work was required e.g. pipes installed to be able to use this water in the vineyard. How difficult/expensive was it to set up what I assume was an on site winery waste water treatment plant to convert what I assume is winery waste water – industrial effluent, to domestic effluent – so it could be diverted to the municipal treatment plant for further treatment and re-use. It seems it was a joint project, but detail is lacking. However, in principle, the use of treated winery waste water for irrigation is environmentally very sound

A good suggestion about the use of flow meters to understand water consumption.



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Regardless of the lack of some detail, this solution does provide some good ideas that could be adopted by many wineries.