

I-ReWater

Empleo de agua regenerada en el viñedo. Proyecto I-ReWater

REGENERACIÓN Y REUTILIZACIÓN DEL AGUA EN EL SECTOR DEL VINO

ONLINE



11:00am - 12:30am
25 de marzo, 2026

#SomosInnovación

Javier J. Cancela

On-line – 25 Marzo 2026



Main Objective

Increase the knowledge and experience on the **use of reclaimed water in irrigated crops**, to obtain a **transnational strategy** to implement by different entities (administration, companies, irrigation communities,...) throughout the **SUDOE area**

Specific objectives

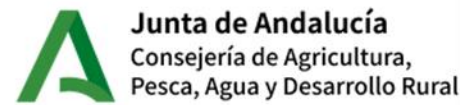
- **Transnational strategy** to incorporate the use of reclaimed water in irrigation
- **Pilot actions** in woody and horticultural crops to evaluate the use of new water sources in irrigation
- Implement a resource platform:
HUB I-ReWater

Consortium – 16 Entities

Univ. Santiago de Compostela	USC
CSIC-ICVV	ICVV
Inst. Reserca Tecnologia Agroalimentaria	IRTA
Fundación Juana de Vega	FJV
Oficina del Regante Cataluña	RCAT
Universidad de Cordoba	UCO
AMAYA	AMA
GESTAGUA	GES
Área Metropolitana de Barcelona	AMB
Pech Rouge – Exp. Unit	INRAe
Hopen Terre de Houblon	HTH
Univ. Tras-os-montes e Alto Douro	UTAD
Inst. Politécnico de Bragança	IPB
INIAV-Dois Portos	INIAV
Aguas do Norte	ADN
Gobierno Andorra	AD



Associate entities (39)



Analysis of Strategies/Policies for the Use of Reclaimed Water - SUDOE. Technical Report. I-ReWater project (S1/2.5/E0136)



<https://hdl.handle.net/10347/40809>

INRAE

USC
UNIVERSIDADE
DE SANTIAGO
DE COMPOSTELA



Table of contents

Chapter 1. Framework. Previous official International and European documents related to water reuse in agriculture	1
Chapter 2. Strategies analysis (2005-2024)	2
2.1. International	2
2.2. Europe	8
2.3. Portugal	11
2.4. Spain	14
2.5. France	17
2.6. Andorra	18
2.7. Germany	19
Chapter 3. Relevant legislation	20
3.1. International regulations	20
3.2. European regulations	22
3.3. Spanish regulations	24
3.4. Portuguese regulations	25
3.5. Andorra regulations	26
3.6. France regulations	27
Chapter 4. Methodology	29
4.1. Drivers and Barriers analysis	30
4.2. Integration of results from water resources, life cycle analysis and socio-economic analysis	34
Chapter 5. Key strategies lines, Action Plan. Disclosure and implementation process	37
5.1. Strategic lines and Action Plan	37
5.2. Divuligation and Implementation	39
References	43

I-ReWater

Pilot Action - 15

Woody crops

Vineyard (x 5)

Hop (x 4)

Almond (x 2)

Olive (x 2)

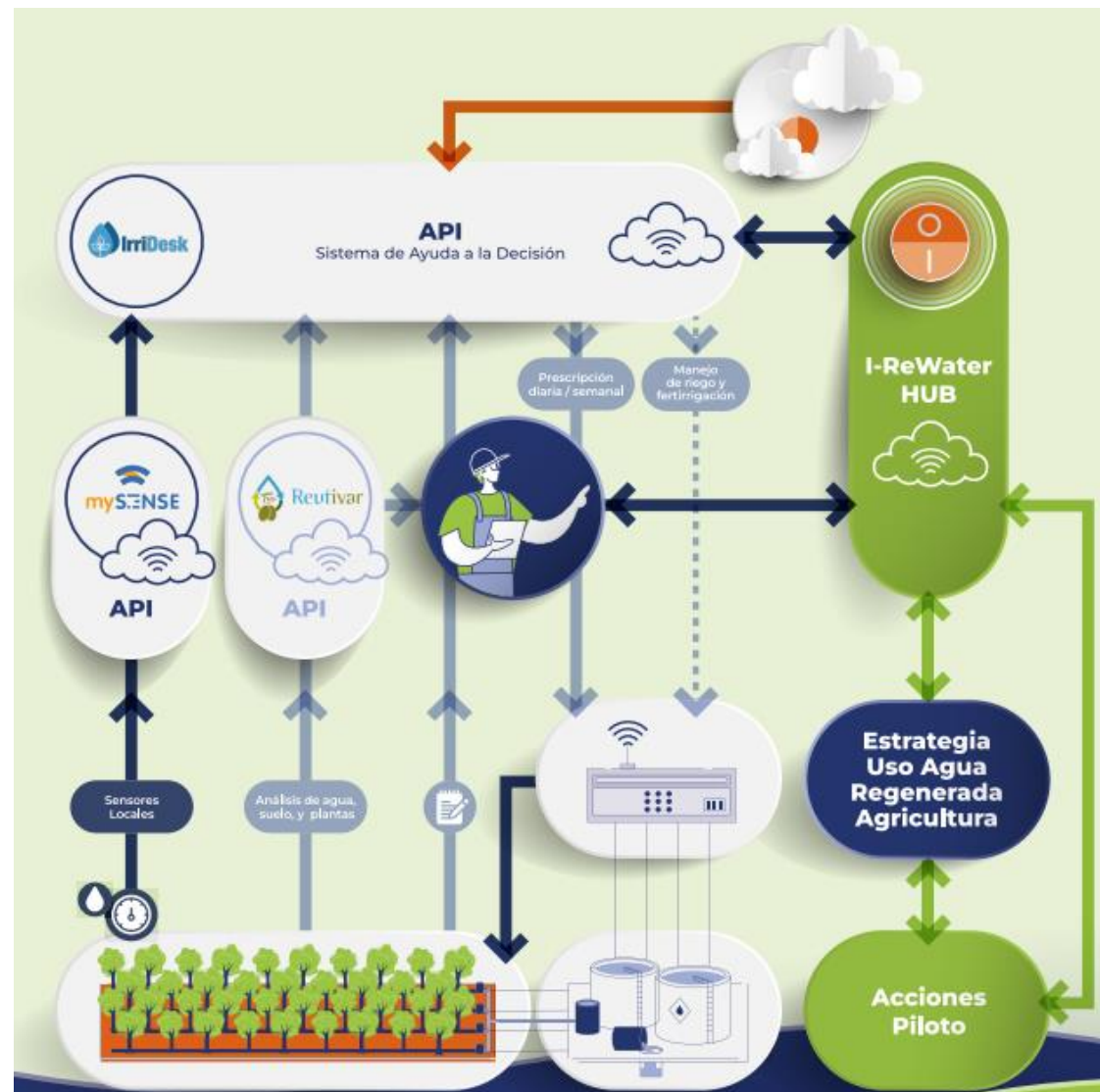
Horticultural crops

Tomato (x 1)

Watermelon (x 1)



Hub – I-ReWater



Interreg
Sudoe



Co-funded by
the European Union

I-ReWater

ICVV- Viñedo

Finca La Grajera- Logroño (La Rioja, ESP)



Instituto de
Ciencias de la
Vid y del Vino



PTV
PLATAFORMA
TECNOLÓGICA
DEL VINO



Interprofesional del
VINO
DE ESPAÑA



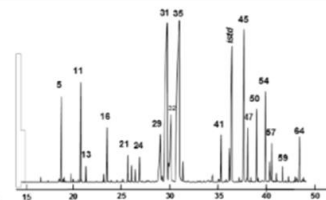
AgroBank

Datos Generales

ICVV - Tempranillo – 2018 – 1,20 x 2,90 m – Franco Arenoso

Tratamiento: Agua regenerada- EDAR La Grajera & Canal

Riego Goteo: Emisores 2,2 Lh⁻¹, separados 0,75 m.



2 tratamientos x 3 repeticiones x 10 plantas/ repetición

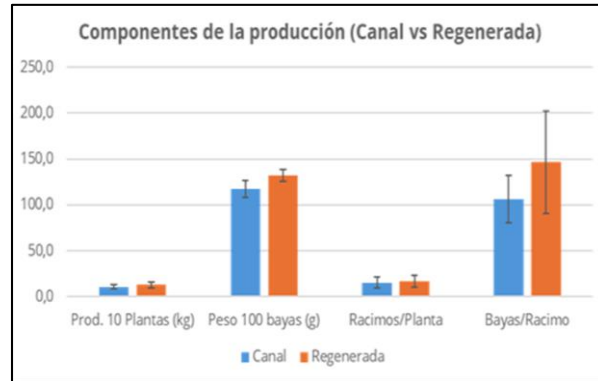
Análisis: Suelo, hojas, agua

Seguimiento: Producción y calidad

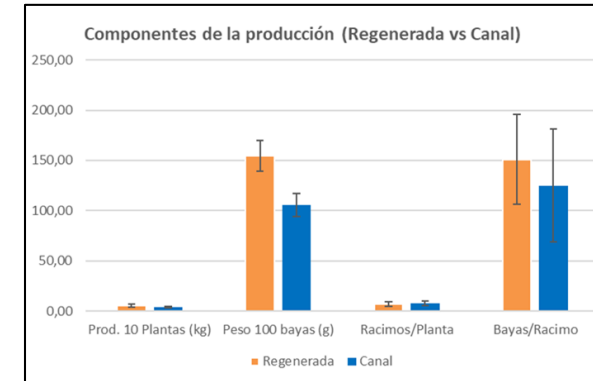
Campaña 2024

Resultados

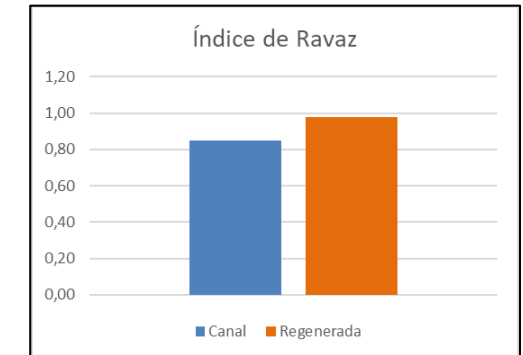
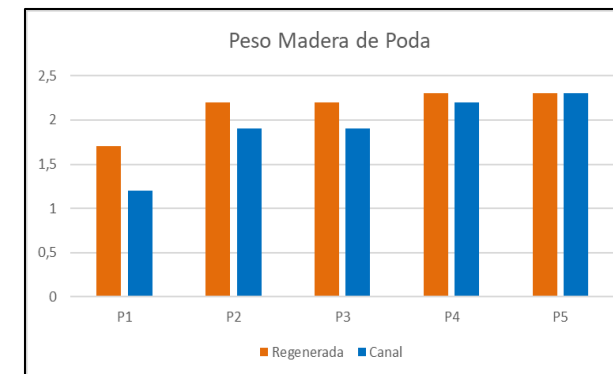
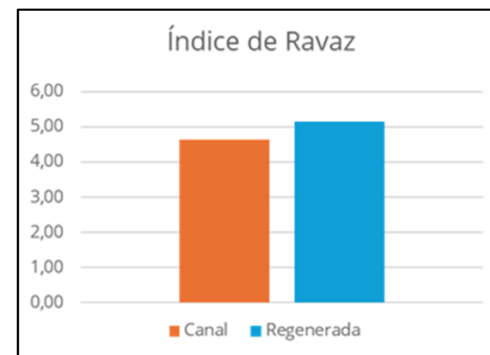
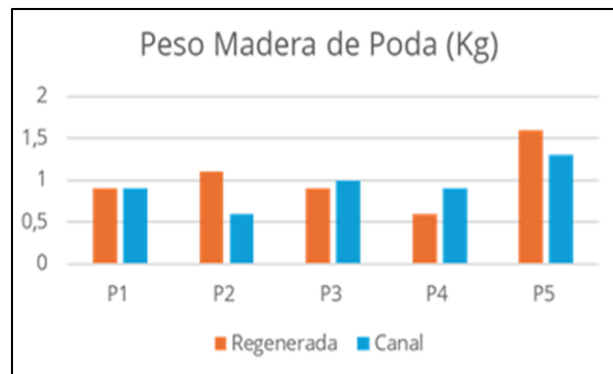
Campaña 2025



Parámetros químicos en mosto			
Parámetro	Canal	Regenerada	Sig
°Brix	24,77	24,07	ns
Grado probable	14,67	14,18	ns
Ac. Acético (g/l)	0,03	0,07	*
Ac. Málico (g/l)	2,57	2,52	ns
Potasio (mg/l)	3037,33	2953,67	ns
Ac. Tartárico (g/l)	4,65	4,58	ns
pH	3,77	3,76	ns
Ac. Total (g/l)	4,66	4,57	ns
Amonio (mg/l)	57,67	44,33	ns
PAN (mg/l)	137,67	105,00	*
FAN (mg/l)	184,67	141,33	*
Glucónico (g/l)	0,17	0,26	ns
IPT	25,67	22,67	ns



Parámetros químicos en mosto			
Parámetro	Canal	Regenerada	Sig
°Brix	24,80	23,07	ns
Grado probable	14,70	13,50	ns
Ac. Acético (g/l)	<0,004	<0,004	ns
Ac. Málico (g/l)	2,08	2,47	ns
pH	4,02	4,03	ns
Ac. Total (g/l)	3,98	4,20	ns
Amonio (mg/l)	102,00	108,00	ns
PAN (mg/l)	192,00	222,67	*
FAN (mg/l)	275,67	311,00	*
Glucónico (g/l)	0,06	0,08	ns
IPT	27,33	33,33	ns



Sin diferencias significativas

Interreg
Sudoe



Co-funded by
the European Union

I-ReWater

INIAV Vinha

Arraiolos/Reguengos de Monsaraz
(Alentejo, Portugal)



Instituto Nacional de
Investigação Agrária e
Veterinária, I.P.



Dados Gerais



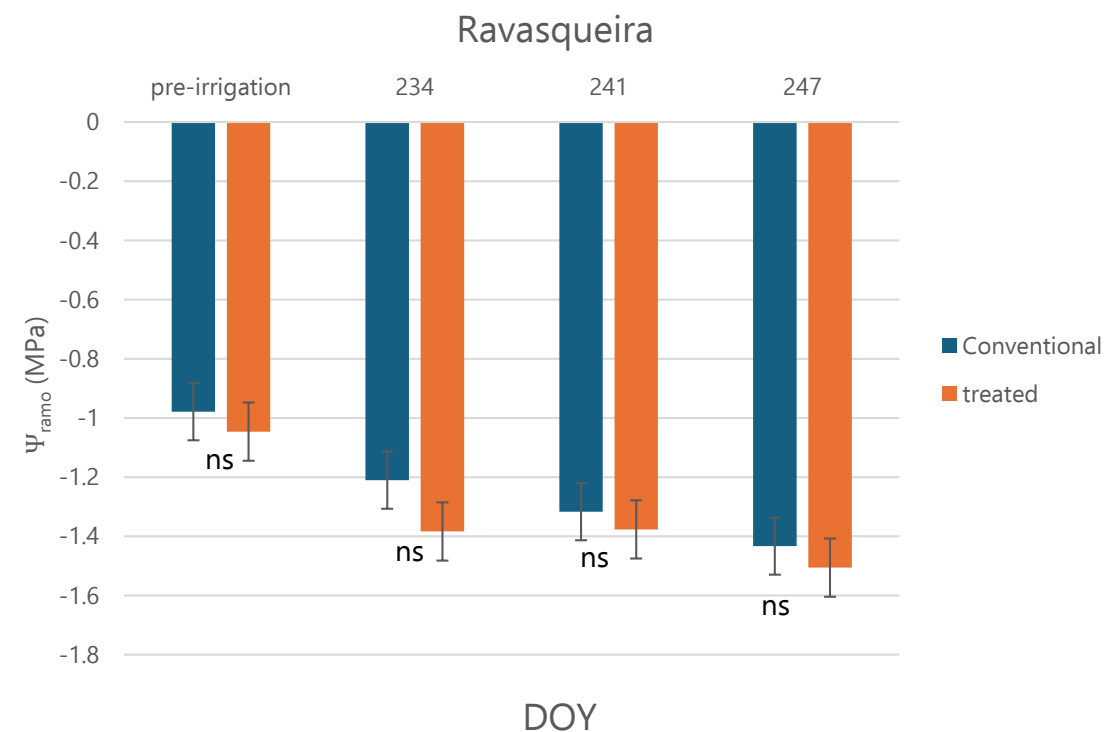
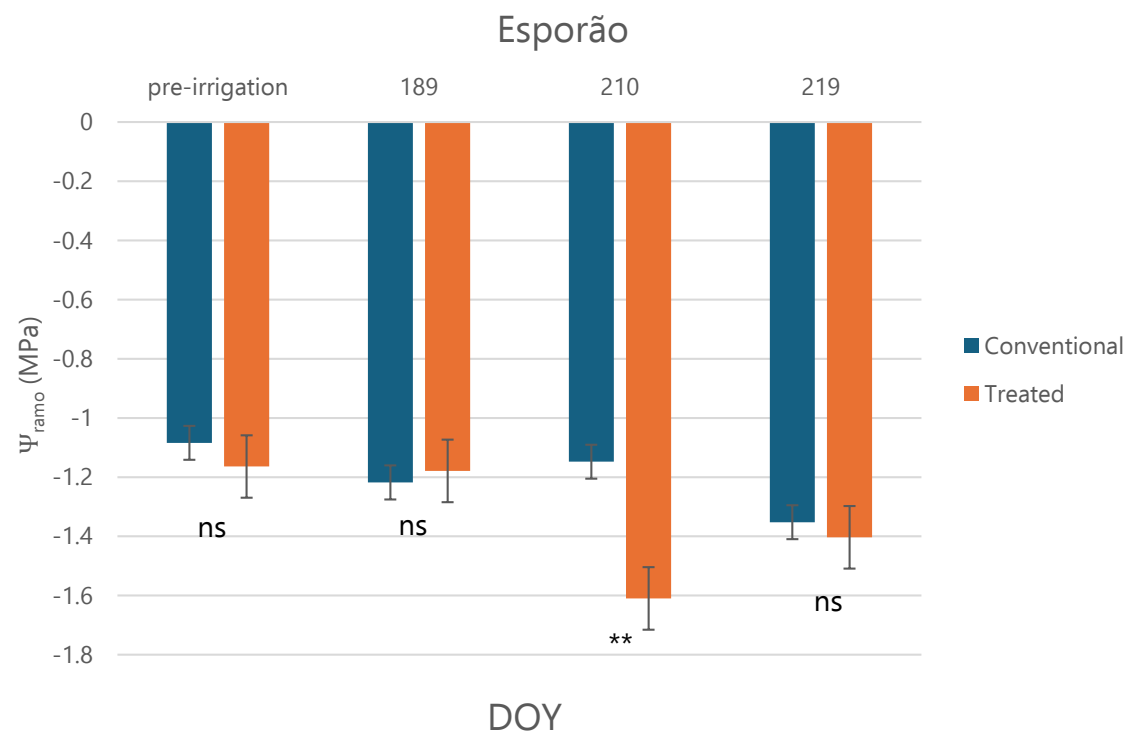
Herdade do Esporão – Reguengos de Monsaraz – Vinha – ‘Viosinho’ – 2007 – 3 x 1,5 m

- Tratamento: Água regenerada & Rega Convencional
- Rega Gotejador: Emisores $2,4 \text{ L} \cdot \text{h}^{-1}$, 1 m. Dose: $0,65 \text{ mm} \cdot \text{h}^{-1}$
- Período Rega: 1 de julho a 20 de agosto.

Monte da Ravasqueira – Arraiolos – Vinha – ‘Trincadeira’ – 2001 – 3 x 1,5 m

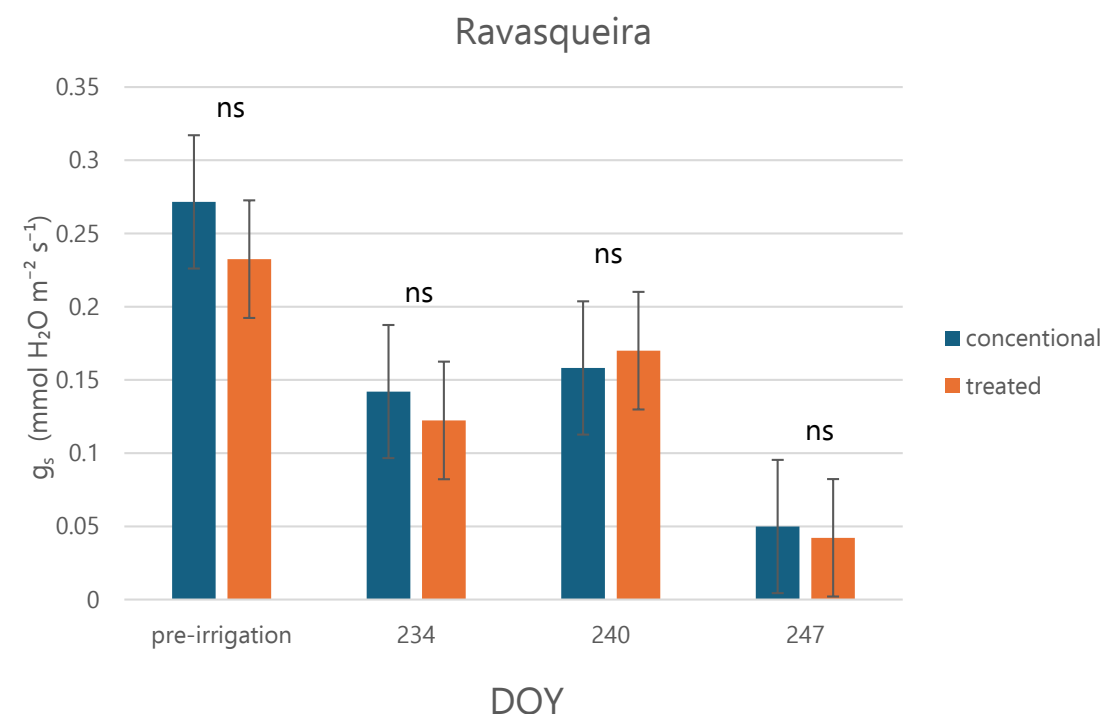
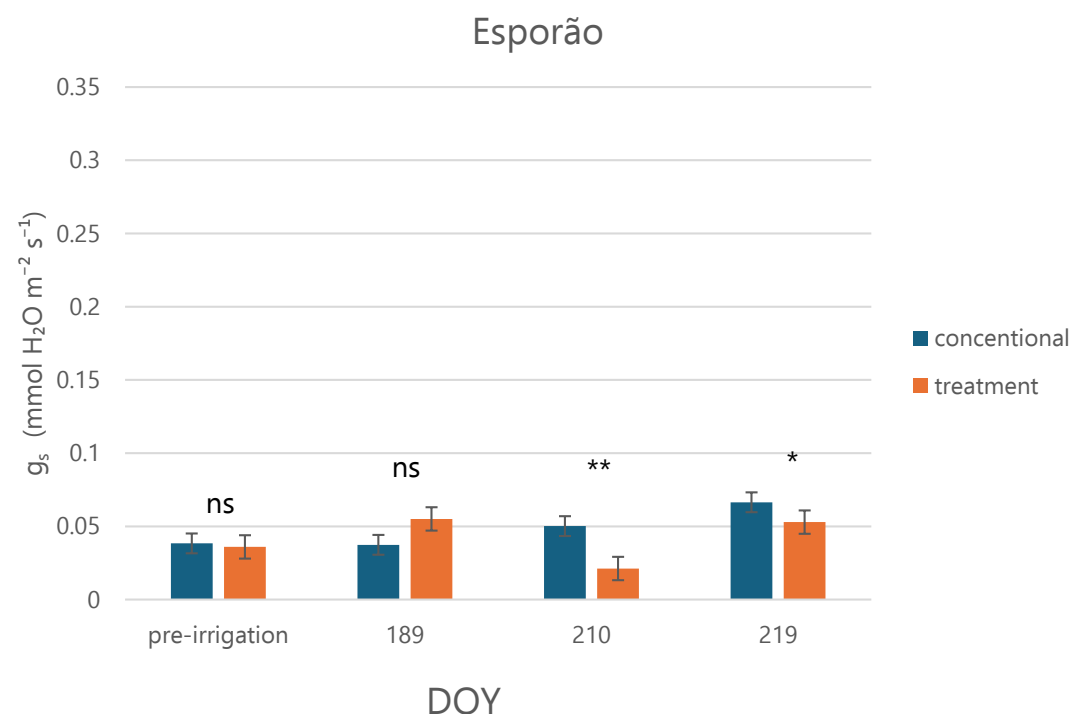
- Tratamento: Água regenerada & Rega Convencional
- Rega Gotejador: Emisores $2,4 \text{ L} \cdot \text{h}^{-1}$, 1 m. Dose: $0,65 \text{ mm} \cdot \text{h}^{-1}$
- Período Rega: 1 de agosto a 26 de setembro.

Ações Realizadas: Potencial do Ramo



Médias pré-irrigação, e 3 medições diárias
Barras representam o erro padrão, asteriscos significam diferenças significativas

Ações Realizadas: Condutância Estomática



Médias pré-irrigação, e 3 medições diárias
Barras representam o erro padrão, asteriscos significam diferenças significativas

Interreg
Sudoe



Co-funded by
the European Union

I-ReWater

INRAE Viñedo

Gruissan (FRA)

Roquefort-des-Corbières (FRA)



UNIVERSIDAD
DE
CÓRDOBA



AGENCIA DE MEDIO AMBIENTE
Y AGUA DE ANDALUCÍA
Consejería de Agricultura, Ganadería,
Pesca y Desarrollo Sostenible

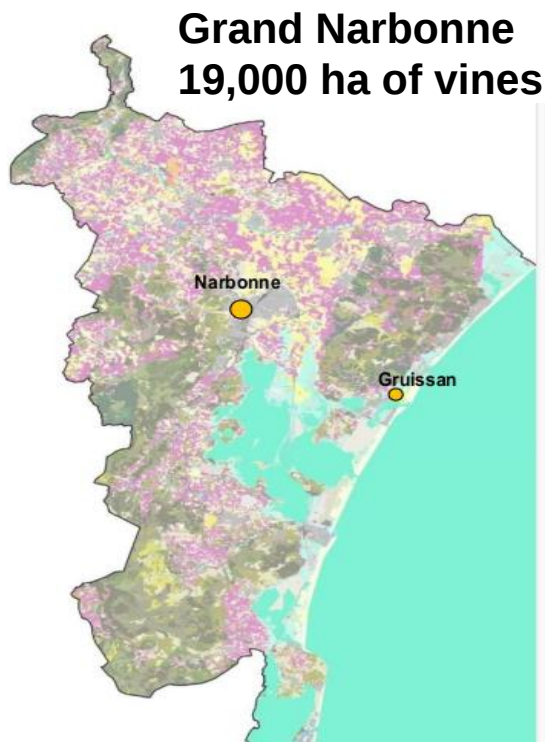


PECH ROUGE

Reuse of treated wastewater for irrigation of vines

Nicolas Saurin

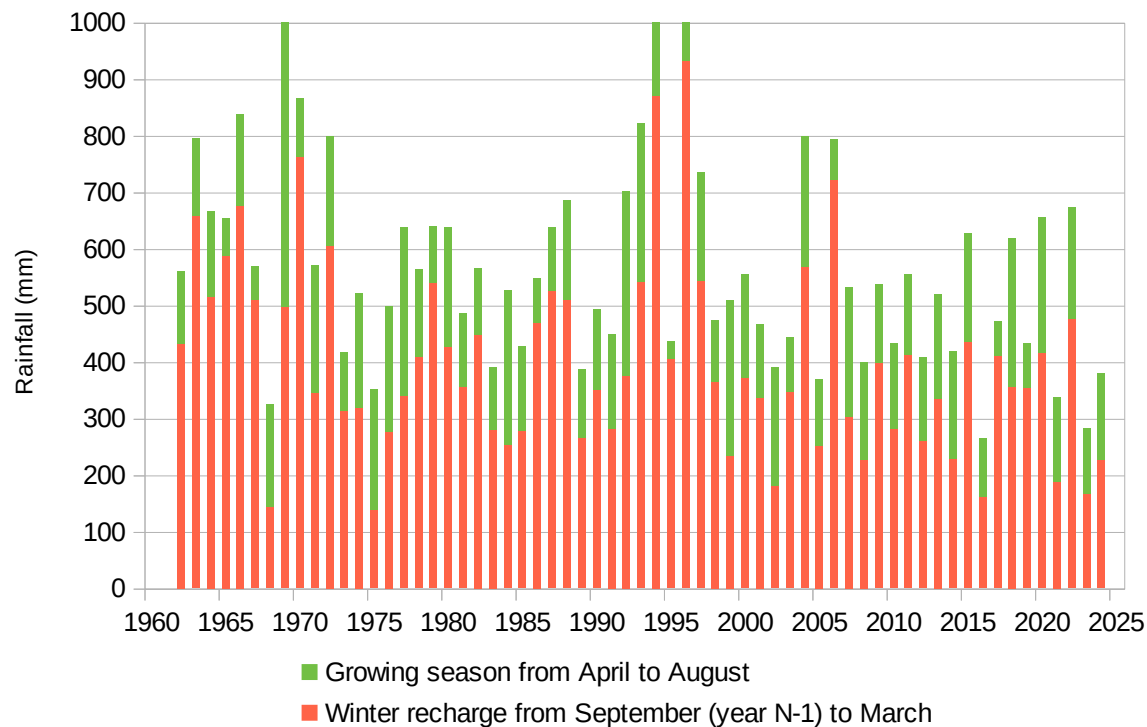
INRAE



Climatic context of the Aude coast

Changes in annual precipitation

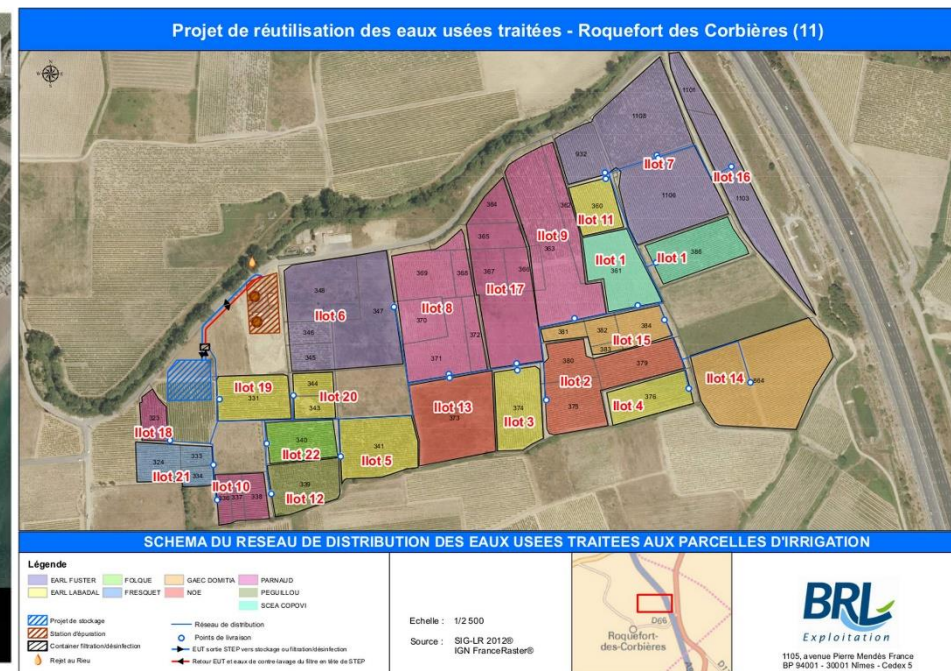
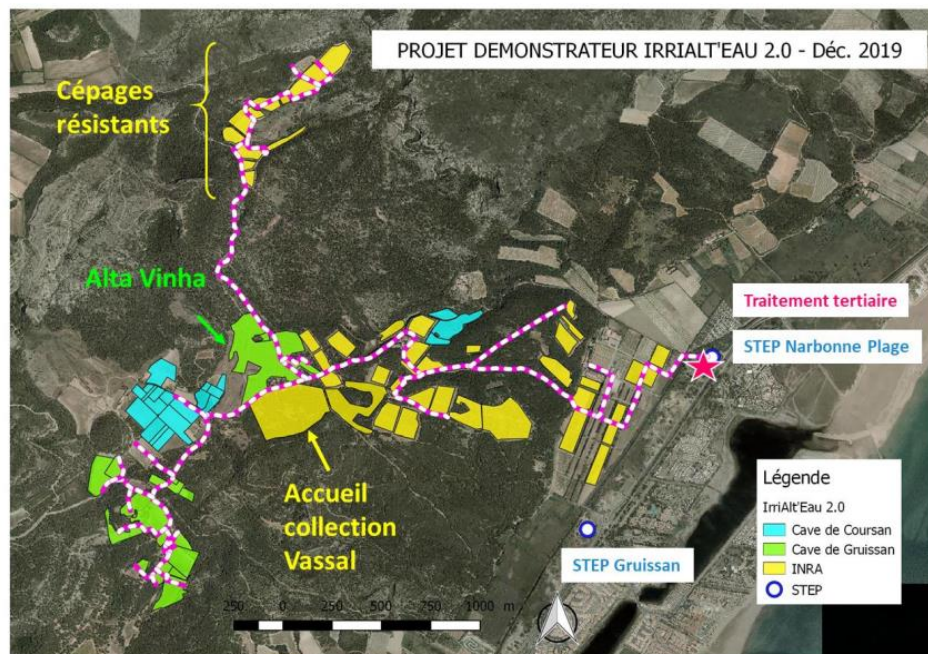
Pech Rouge weather station (INRAE Climatik data)



No access to collective irrigation networks

Questions asked: **Main results**

- 1) In light of the regulations in force at the time (2014 decree), which **treatment processes** can produce **quality B or C water**? **The [filtration + UV + chlorination] process allows the production of quality C water**
- 2) How does the regulatory microbiological quality of treated wastewater evolve between the exit of tertiary treatment and the **point of use**? **No evolution observed**
- 3) What are the **micropollutants** (PAHs, VOCs, HVOs, metal traces, pesticides, nonylphenols, drug residues) in **treated wastewater**? **Some molecules detected, but at very low concentrations**
- 4) Is there **contamination** (microbiological and nonylphenols) in the **environment (water table and/or soil)**? **No contamination detected**
- 5) Are certain **micropollutants** found in **wines**? **No, but methodological difficulties for certain dosages on wine and must (e.g.: carbamazepine)**
- 6) Does the nature of irrigation water (treated wastewater, drinking water, agricultural water) modify the **physiological** (water and nutritional status) and **agronomic behavior** of the **vine** (biomass) and the quality of the **wines**? **Slight fertigation effect on vegetative growth, berry size and assimilable nitrogen of musts with reinforced irrigation**



Macronutrients provided for 1 ha of vines

	Gruissan			Roquefort		
	Nitrogen	Phosphorus	Potassium	Nitrogen	Phosphorus	Potassium
750 m ³ (75 mm)	32 kg	1 kg	23 kg	2 kg	0,1 kg	21 kg

Cost of water: Gruissan Irrigators Association**Investment:**

- Grand Narbonne : Tertiary treatment : 542 k€ (50% subsidized)
- Gruissan Irrigators Association : Water supply network and booster pump : 750 k€ (80% subsidized)

Irrigators:

- Billing by Grand Narbonne for water consumed at cost price
 - 2022 : 0,38 € / m³
 - 2023 : 0,53 € / m³
- Electricity consumption 2023 : 0,17€ /m³
- Fee to the irrigators' association : 215 € / ha
- Long-term loan investment : 75 € / ha

Irrigation cost for a plot of one hectare and a contribution of 750 m³ in 2022: 630€



REUSE EUROMED 2026

EURO-MEDITERRANEAN CONFERENCE
ON WATER REUSE

JUNE 17-19, 2026

SAN FERNANDO DE HENARES
MADRID, SPAIN

Interreg
Sudoe



Co-funded by
the European Union

I-ReWater



International Congress

REUSE-EuroMed

17-19 June 2026

https://server.matchmaking-studio.com/en/REUSE_Euromed_Madrid_2026/

ORGANIZERS

Interreg
Sudoe



Co-funded by
the European Union

I-ReWater



PARTNERS & SPONSORS



**Interreg
Sudoe**



Co-funded by
the European Union



PTV
PLATAFORMA
TECNOLÓGICA
DEL VINO



Interprofesional del
VINO
DE ESPAÑA



AgroBank



I-ReWater

Thanks for your attention

Javier J Cancela

javierjose.cancela@usc.es

0034 678920897

**REGENERACIÓN Y REUTILIZACIÓN
DEL AGUA EN EL SECTOR DEL VINO**

ONLINE



11:00am - 12:30am
25 de marzo, 2026

#SomosInnovación



<https://www.linkedin.com/company/irewatersudoe>



<https://www.facebook.com/profile.php?id=61557531473885>



<https://www.instagram.com/irewatersudoe/>

