



# Irrigation strategies for efficient water management in irrigated lands

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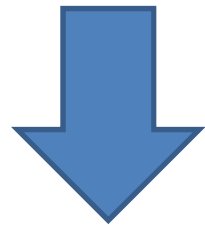
## Centro de Investigaciones Científicas y Tecnológicas de Extremadura

- Finca La Orden
- Valdesequera
- Instituto del Corcho, la Madera y el Carbón Vegetal
- Instituto Tecnológico Agroalimentario de Extremadura
- Centro de Agricultura Ecológica y de Montaña



# Success Case

Some proposals to improve the use of water and fertilizers in irrigated crops



knowledge transfer to commercial farms

AGROS PROJECT



# Irrigation Scheduling

Irrigation advice service



Red de Asesoramiento al Regante de Extremadura



Red SIAR



Efficiency in the Use of Water

# Irrigation Strategies in Fruit Trees

Crop (Experimental years)	Irrigation according to crop water needs (mm)	Yield (t/ha)	Recommended irrigation (mm)	Yield (t/ha)	EUW (l/kg) needs/recommended
Early Nectarine (4)	786	26,5	415	26,1	296/159 (-46%)
Summer Pear (6)	826	29,5	640	33,9	280/189 (-32%)
Early Plum (8)	596	11,9	344	12,4	501/276 (-44%)
Late Plum (9)	686	28,5	534	31,0	240 / 171 (-28%)

# Irrigation Strategies in vineyard

Cultivar (Experimental years)	Irrigation according to crop water needs (mm)	Yield (t/ha)	Recommended irrigation (mm)	Yield (t/ha)	EUW (l/kg) Needs/recommended
Tempranillo (7)	390	23,0	152	19,1	169/58 (-65%)
Doña Blanca (3)	337	16,8	181	15,6	200/116 (-42%)

# Irrigation strategies in olive orchards

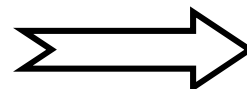
Orchard system (años)	Irrigation according crop water needs (mm)	Oil Yield (kg/ha)	Recommended Irrigation (mm)	Oil Yield (t/ha)	EUW (l/kg) Needs/recommended
Intensive orchard (3)	450	2.581	270	2.599	1.743/1.039 (-40%)
Hedgerow orchard (5)	500	2.749	320	2.719	1.819/1.177 (-35%)
			140	2.228	1.819/628 (-65%)

# Irrigation Strategies in Processing Tomato

Crop objective (años)	Irrigation (mm)	Yield (t/ha)	EUW (l/kg)
High yield (3)	688	114	60
High Soluble Solids (3)	516	111	46 (23 % saving)



**Upper limit allowed for the application of nitrogen fertilisers in vulnerable areas of Extremadura (Orden 9 de marzo de 2009)**



**200 FU/ha**

TREATMENTS	FERTILISER N (UF/ha)		
	2012	2013	2014
N1	0	0	0
N2	125	87	204
N3	174	162	267
N4	232	245	334

TREATMENTS	YIELD (t/ha)		
	2012	2013	2014
N1	111 b	73 b	74 b
N2	140 a	97 ab	98 ab
N3	135 ab	103 a	114 a
N4	130 ab	116 a	119 a
P	0.062	0.002	0.021

## **Proposed Indicators**

Common result indicators used for reporting in the APR

R12 Adaptation to climate change

R19 Improving air quality

R.20 Protecting water quality

R.22 Sustainable water use

1.- Use of devices to record the volumes of water applied.

**Hectares for which there is a periodic record of the water applied throughout the irrigation campaign.**

2.- Irrigation Scheduling applying necessary and sufficient water volumes to cover crop water needs. REDAREX.

**Hectares Under Irrigation Scheduling.**

3.- Use of Deficit Irrigation Strategies.

**Hectares under Deficitary Irrigation Strategies.**

4.- **Irrigation license.**

To pass a tests of level basic skills for an efficient use of the irrigation water.

5.- To follow a fertilization scheduling with nitrogen fertilizer applications lower than the limits established by the Regulation of Zones Vulnerable to Nitrate Contamination.

**Underfertilized Hectares**



Thanks