Australia:
Report on the influence of magnetic technologies on irrigation water and reduction in its volume usage when growing vegetables.

(University of Western Sydney, Australia)

Studies were conducted on different irrigation systems of crops of Peas and Celery and were aimed to identify the effectiveness of use of magnetic technologies.

The experiment used bottled, brackish and recycled tap waters. Part of it was treated with magnetic devices, and the other used for irrigation in its natural form. The study took place at the Sydney West Institute (Richmond campus) from April 2007 to December 2008. All experiments were performed in the laboratory.

Overall results showed a positive dynamics with the use of magnetic technology.
Magnetic treatment of recycled and brackish water (3000 ppm) increased celery yield (12%) and pea yield (23%). It also reduced consumption of add on by 12% and 24%.

Yield of peas in laboratory conditions increased by 7.8% (bottled magnetic water), 5.9% (recycled tap magnetic water) and 6.0% (brackish magnetic water 1000 ppm). Reduction in the need of irrigation water was 12% (bottled magnetic water), 7.5% (recycled tap magnetic water) and 13% (brackish water magnetic 1000 ppm).

Australia. Effect of magnetic treatment of irrigation water on yield parameters of celery, of water and reduction of its volume requirements.

	Water			
	potable	STP	1500 ppm	3000 ppm
Mean yield fresh weight	0.0	**12.4**	9.6	**22.9**
Mean yield dry weight	-2.0	**12.0**	4.3	**26.9**
Mean root dry weight	-3.2	2.9	-0.4	**14.7**
Water use	-4.3	-0.6	-1.5	-0.8
Water productivity	4.4	**11.7**	**11.1**	**23.7**

There was significant increase in water productivity based on fresh weight by applying magnetically treated 3000 ppm saline water, 1500 ppm saline water and recycled water when compared with the controls. Similar trends were also observed for the water productivity based on dry weight, but the increase for 1500 ppm saline water was not significant.

Australia. Effect of magnetic treatment of irrigation water yield parameters of peas, of water and reduction of its volume requirements.

	Water			
	potable	STP	500 ppm	1000 ppm
Mean yield fresh weight	**7.9**	**6.0**	1.1	**6.1**
Mean yield dry weight	**10.8**	**6.9**	1.7	**8.2**
Mean shoot dry weight	0.4	0.5	-0.4	2.6
Mean root dry weight	-3.7	-3.1	4.2	8.7
Water use	-3.8	-1.4	-0.3	-5.8
Water productivity	**12.1**	**7.5**	-0.1	**12.6**

For water productivity based on fresh weight basis, the effects of the magnetic treatment were significant for potable water, recycled water and 1000 ppm saline water. Similar trends were also observed for water productivity based on dry weight basis, but the effect of magnetic treatment was non-significant for recycled water.

Australia. Effect of magnetic treatment of irrigation water yield parameters of celery, of water and reduction of its volume requirements.

	Water			
	potable	STP	1500 ppm	3000 ppm
Mean yield fresh weight	1.25	8.1	-1.9	5.7
Mean yield dry weight	0.0	9.7	-1.9	4.8
Water use	-4.8	0.1	-2.2	-2.1
Water productivity	5.2	6.7	0.0	4.2

Australia. Change in parameters of irrigation system of vineyard using magnetic systems.

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	UNMAGNETIZED	MAGNETIZED
VINEYARD MAIN LINE RUNNING PRESSURES (kPa)	420	480
VINEYARD MAIN LINE VOLUMES (m^3/hr)	520	570
DRAW OF CURRENT ON 2 X100HP PUMPS (Hz)	50	45

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Magnetic treatment of irrigation water used for growing of peas.

Improvements in nutritional value indicators and overall growth increase.

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Seedling Emergence and Emergence Rate Index (ERI)

Treatments	Emergence, %		ERI, %	
	Snow Pea	Chickpea	Snow Pea	Chickpea
Control	62.5	68.8	0.375	0.455
MTW	75.0 (20.0)	93.8 (36.4)	0.532 (41.6)	0.688 (51.0)
MTS	68.8 (10.1)	81.3 (18.2)	0.500 (33.2)	0.625 (37.3)
MTWS	93.8 (50.1)	87.5 (27.3)	0.688 (83.3)	0.652 (43.2)
	S	*NS*	*S*	*S*

Effect of magnetic treatment of irrigation water on average germination rate and dry mass of seedling roots.

Treatments	Shoot weight, mg/plant		Root weight, mg/plant	
	Snow Pea	Chickpea	Snow Pea	Chickpea
Control	62.3	46.3	38.62	89.4
MTW	77.6 (24.7)	55.5 (19.8)	43.11 (11.6)	90.8 (1.6)
MTS	69.1 (11.0)	48.2 (4.1)	38.95 (0.8)	89.8 (0.5)
MTWS	67.1 (7.8)	49.3 (6.5)	37.10 (-3.9)	88.7 (-0.7)
	S	*S*	*S*	*NS*

Effect of magnetic treatment of irrigation water and seeds on increase of nutritional values of peas 20 days after seeding.

Nutrients	Magnetic Treatment of		
	water	seeds	water and seeds
N	22.56	11.31	8.37
P	7.25	3.97	1.73
K	14.43	8.76	3.34
Ca	33.33	27.78	16.67
Mg	14.45	9.83	5.20
S	13.11	8.99	5.62
Na	36.99	15.07	6.85
Zn	17.34	19.06	16.49
Cu	20.20	12.12	5.05
Fe	14.65	14.37	6.25
Mn	36.98	25.26	20.05
B	19.17	17.50	5.00