

## Water saving

### Water saving in agriculture

Often a great part of water drawn for irrigation purposes doesn't reach crops due to leaks along the pipes that transport water from the withdrawal point to the fields. Only part of the water reaching fields is used to grow crops, the rest is lost due to evapotranspiration and infiltration in the soil. Different strategies exist to save water in agriculture which, when integrated among them, can increase water saving.

One of the most effective ways to avoid wasting water is irrigating crops according to real necessities of a plant and in the right moment. A precise evaluation of the water volumes and times of irrigation make the use of water more efficient as the volumes necessary to the achievement of the best productions decrease. The estimate of the water balance of crops is the most accurate, low-cost and simple method to evaluate the amount of water necessary to bridge the gap between water consumed by crops due to evapotranspiration and water reaching plants when it rains or from superficial groundwater or capillary resurgence through the soil. This method, even if it's accurate, is laborious and often difficult to apply, especially at the times of greatest work in an agricultural enterprise. For this reason have been invented softwares that show on a daily basis to farmers when and how much they should irrigate each crop.

Reusing waste water for irrigation is an opportunity offering great benefits, especially in the face of growing urbanization. Urban waste water, conveniently treated, can be channelled towards agricultural areas for irrigation. Waste water, moreover, supplies crops with nitrogen and part of phosphorus and potassium needed for agricultural production. Reusing waste water limits withdrawal of superficial and subterranean water, reduces the impact of discharging in rivers and favours water saving.

Drip irrigation represents one of the most efficient and sustainable irrigation methods as it allows to direct water only where it's needed, that means on the base of the plant, close to the roots. It's a much more efficient system than common sprinkler systems, which spread water on the whole field, even where it's not necessary with consequent waste of the water resource. In places where this technique has been introduced a decrease in water consumption between 30% and 60% has been registered.

The transition from a method characterised by high losses to a system capable of determining the greatest efficiency of use represents, hence, an indispensable strategy for agricultural water saving. Matching an irrigation system to the characteristics of crops and land is never accidental, in fact, no irrigation system adapts perfectly to all situations as each requires special attention to identify the optimal irrigation system. In the reality of a field, hence, not all crops are, for example, practicably irrigable through sprinkling and for many others it's difficult or uneconomic passing to drip irrigation. Every system can and must be used in the correct manner, adopting all possible precautions to allow achievement of their best efficiency.

### Industrial water saving

It is estimated that by 2050 the industrial sector will increase its water demand by 150%. Saving water not only means saving a precious resource at an environmental level but also entails a real costs saving. Besides specific technological measures for every type of industry, tactics as reuse and recycle can be put into practice. Reusing means using waste water after treating it, for example, municipal waste water which is treated for irrigation of green areas. Recycling, instead, means reusing water for the same application for which it was employed. Many water discharges could be used

for: final rinsing of cisterns, soaking and rinsing water of containers and bottles, cold water flows, pastozized and sterilized water, final rinsing in washing cycles, adequate use of cooling and defrosting tools, adequate use of cleaning equipment for pavements and drainage channels.

Recycled water could be used for other industrial uses and irrigation of green areas, agricultural irrigation, fire-extinguishing purposes, etc.

## **Give your contribution to water saving**

There are many things we can do to save water and give our contribution to save and preserve water resources. Here are some suggestions:

### ***I drink tap water!***

Prefer tap water to bottled water. Tap water, infact, doesn't need packaging. Drinking it means reducing the use of petrol to produce plastic bottles. Water then reaches directly our houses without covering not even one metre on the roads: it's hence "zero kilometre", saving the environment from emissions of pollutants produced by transport of bottled water on trucks.

### ***Wash, thinking it over!***

If you can, prefer showers to having a bath: every time we have a bath we consume up to 150 litres of water; when we have a shower we consume only 50. Use shampoos and soaps sparingly and, if you can, choose the less polluting.

### ***Let's be clever: avoid wastes***

Just one tap left open, as you're brushing your teeth, brings to a useless consume of about 2,500 litres/per year per person. It's better therefore to close the tap when you're brushing your teeth.

Moreover, applying "aerators" which mix air and water to taps you can save up to 6,000 litres per year. Controlling taps and pipes you can avoid dripping and water leaks. A hole of one millimeter in a pipe over 24 hours can entail the loss of 2000 litres of water!

### ***Keep your drain under control!***

At home about a third of drinking water ends, literally, in the WC drain. At every flush about 6 litres of water are consumed, often, only to discharge a small piece of paper. Hence, use low-flush every time you can or reduce the capacity of the tank. Finally, don't use WCs as a waste basket for rubbish and avoid throwing cotton buds, paper tissues, absorbent cotton, etc. inside.

### ***Watchword: don't pollute.***

Remember that any type of rubbish thrown in the sea, rivers or lakes can pollute. Don't throw in the WC polluting substances as medicines, varnishes, solvents or any other type of waste.

### ***ECO: economy or ecology?***

In the kitchen we can save from 40 to 80 litres per day using dihswashers only at full load. The same principle can be applied to washing machines unless they have programmes tailored for different loads.

***A green thumb for a light blue planet***

At home to water flower and plants we can reuse the same water used to wash fruit and vegetables saving 6,000 litres of water per year. In summer it's better to water plants in the evening as in the hotter hours water would evaporate immediately.