

H2FLOW

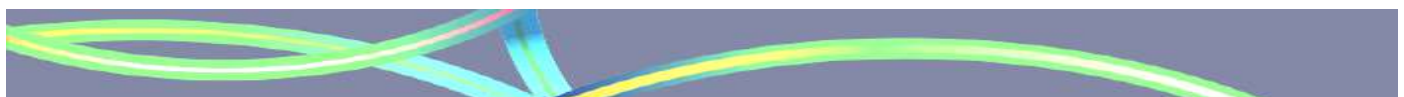
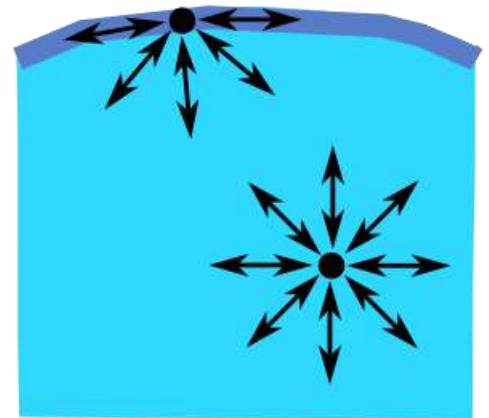
**Decrease your usage of water
& fertilizers**



What is the surface tension :

Surface tension is the effect that causes the surface layer of any liquid to behave like an elastic sheet. This is the effect that allows insects to walk on water, and small metallic objects such as needles, or pieces of tin foil from floating on water, and is also the cause of capillary action. The reason for these phenomena is the surface phenomenon of liquids known as surface tension, as the surface molecules of a water drop differ from the internal molecules that make up it. This difference in the forces of attraction between the molecules of the two surfaces is what results in the so-called surface tension. As the water molecules inside are subjected to equal forces in all directions, while the molecules on the surface of the water are subjected to forces that attract them towards the depth of the liquid, which makes the surface molecules behave like a stretched membrane

This makes the soil absorb water slowly, and thus water becomes vulnerable to loss through runoff or evaporation, which increase irrigation and operating costs.



What is H2Flow :

- 1) H2Flow is a mixture of emollients that reduce the surface tension of irrigation water with a technology called Multi Matrix, which in turn helps the penetration of water into the root area faster.
- 2) H2Flow also contains stimulators for the growth of root hairs and improve their performance.
- 3) H2flow also improves both horizontal and vertical movement of water in the soil, especially in sandy soils.

This leads to better development of the root system of the plant and thus to better absorption of water and nutrients, while it can also significantly reduce the amount of irrigation water.

- 4) H2Flow tops the water conservation products with the highest concentration of active ingredient 88% compared to other advanced soil moistening products

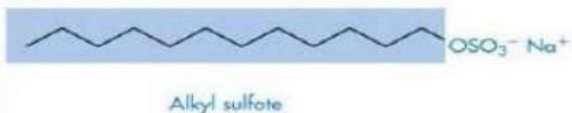
How do substances that reduce the surface tension work:

Some compounds have a distinctive shape that allows them to sit on the surface separating two objects. These compounds are called surfactants.

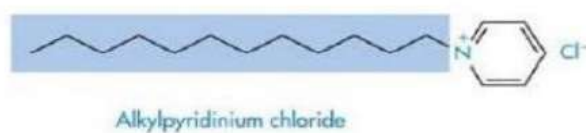
The active substances on the surface are characterized by containing two ends, the hydrophilic end and the hydrophobic end, and the hydrophobic end is a saturated or unsaturated hydrocarbon chain, as it may sometimes be an aromatic ring or a heterogeneous ring. As for the hydrophilic end, it may be a cationic, negative, anionic, bipolar, or non-anionic atom, and according to the type of this hydrophilic end, the materials that reduce the surface tension of water in the market are classified into strong or weak materials effect.

Box 5.1 Classification of surfactants^a

Anionic



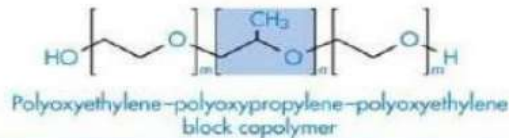
Cationic



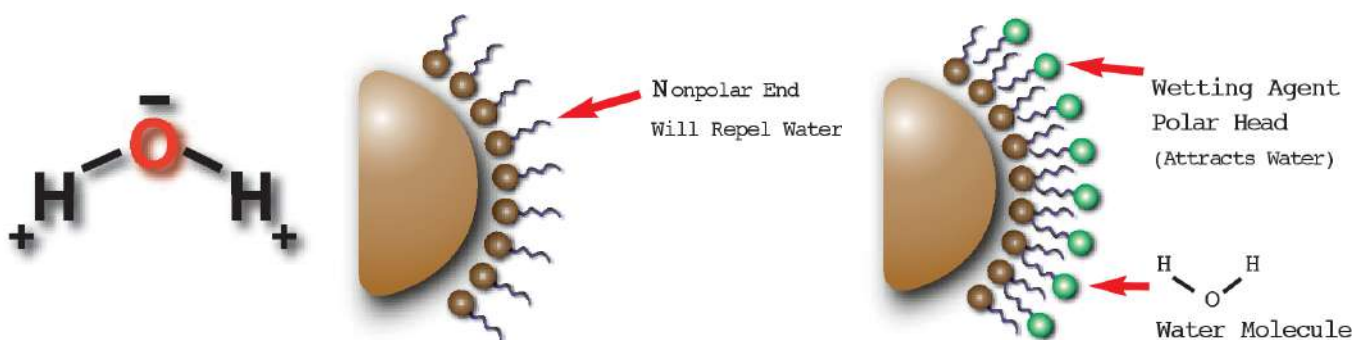
Zwitterionic



Nonionic

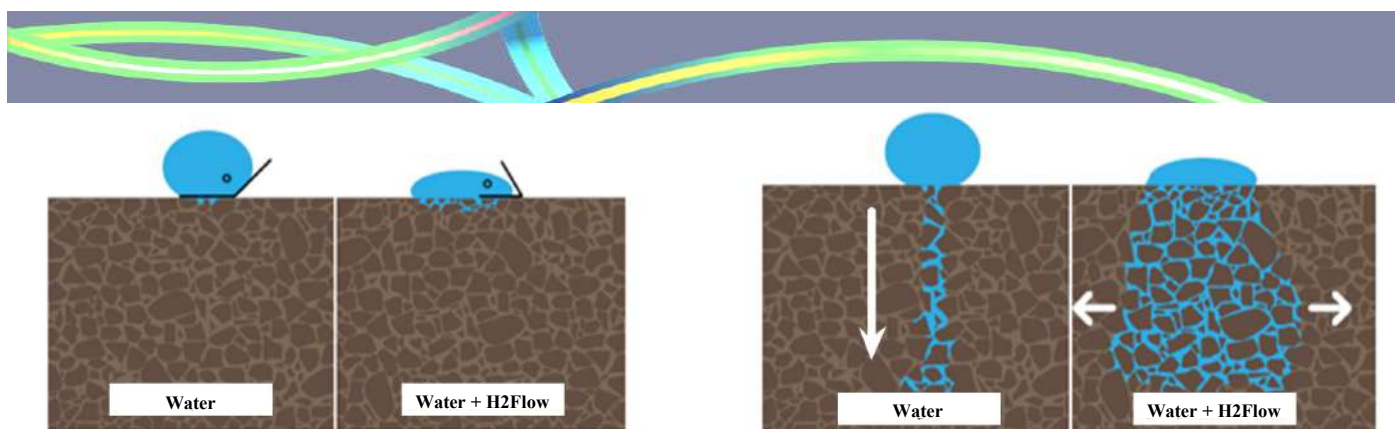


^a Hydrophobic areas of the molecules are shaded.



Why H2Flow :

- Surface tension is one of the challenges and physical properties of water that limit the penetration of water into the soil, which reduces the efficiency of irrigation water.
- The accumulation of water on the surface of the soil leads to its loss due to evaporation and surface water run-off.
- In the case of coarse soils such as sandy, the high surface tension of water causes rapid vertical infiltration and incomplete wetting of the soil layers.
- Sandy soils do not retain water well, causing a loss of approximately 80% of water due to seepage in the deep layers or evaporation.
- This is what makes the soil dry out quickly and requires more frequent irrigation to moisten the soil and avoid plant thirst and thus low production.
- Therefore, the frequency and increase of irrigation automatically increases the costs of water, pumping and labor costs.
- Many experiments have proven that the use of H2Flow which moisturizes the soil and preserves water, helps reduce irrigation water up to 25% without any real negative impact on productivity.
- H2Flow has shown excellent results in increasing production in areas that do not suffer from water scarcity when used in regular irrigation programs.

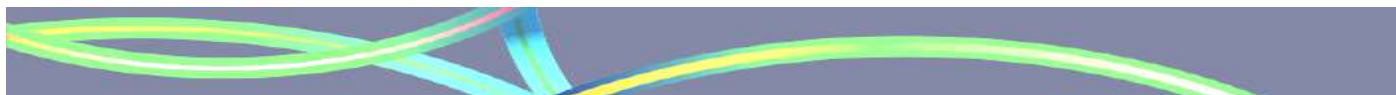


Soil humectants reduce the surface tension of water and reduce the angle of inclination of water droplets on the surface of the soil, which leads to the rapid absorption of irrigation water by the soil and its rapid spread.

Moisturizing water facilitates the movement of water between the soil particles. It also accelerates the lateral movement of irrigation water, thus always providing sufficient quantities of water around the root hairs, thus reducing the quantities of irrigation water and nutrients lost by surface runoff or drainage.

Benefits of using H2Flow:

- 1) **It can save up to 25% of irrigation water without reducing production**
- 2) **It can be added and used with fertilizers**
- 3) **It is easily absorbed in all types of agricultural media, especially in seedling soils**
- 4) **Effective in different soil layers, not just on the surface**
- 5) **Makes the water penetrate the soil well**
- 6) **It improves the lateral and vertical movement of water into the soil**
Flexible use in different irrigation programs and dosages
- 7) **Significantly improves the growth of root hairs of plants**
- 8) **Reducing the cost and quantity of irrigation water**
- 9) **Reducing the cost and quantities of fertilizers used with irrigation water**



How to use and dosage :

Crop	Dose	Water Q.	Notes
Pre planting or with the first irrigation / wetting up of growing media	1.2 - 2.4 L/Hectare	1000 - 2000 L	Before planting
First application	1.2 - 2.4 L/Hectare	1000 - 2000 L	-
Monthly applications	0.6 - 1.2 L/Hectare	1000 - 2000 L	2 - 4 times / month

Usage Recommendations :

**Mixing it into the tank is easy and cannot clog the equipment.
Easy to use with all drip, pivot and immersion irrigation devices.**

Packing

Available in 5 Liter