Improve **5x1®**

ADJUVANT FOR IMPROVING THE EFFICACY AND PERFORMANCE OF PESTICIDES AND FOLIAR NUTRIENTS. PH AND WATER HARDNESS REGULATOR.

Benefits of use

Pesticide and foliar fertilisers efficacy depend mainly on the hardness and pH value of water. So, **IMPROVE®** was specially prepared to maintain and increase the performance and efficacy of pesticides and foliar fertilisers by:

1- pH stabilisation: the use of water with pH>7 can lead to lose the efficacy of certain foliar fertilisers or pesticides by dissolution of its components. In some cases, when the obtained results are not as the expected, we wrongly judged for their inefficacity or the pathogens have developed immunity against those products. The use of **IMPROVE®** leads to maintain an optimum pH value to increase the efficacy of fertilisers. Furthermore, **IMPROVE®** contains pH indicator, that goes from white for pH alkaline to pink for pH value between 4.5 and 5.5 (optimum value for the majority of pesticides and foliar fertilisers).

Composition

	(%w/w)
Total Nitrogen	2,0
Octal phenol ethoxylat	12.5
Neutralising Agent	8,0
Surfactant Agent	9,0

2- Surfactant and penetrant: The characteristic of surface-active agent, or "surfactant" is to allow more contact between the spray droplet and plant leaf. It does so by reducing the surface tension of the water in the surface solution, which spread more readily on plant leaf surface. **IMPROVE®** enlarge the area of foliar fertiliser coverage, helping to improve the absorption and penetration of foliar nutrients. **IMPROVE®** also helps in penetrate the cuticle and deliver the intended nutrient or pesticide dose, without **IMPROVE®** the spray droplet often runs off or fail to adequately cover leaf plant surface.

3- Neutralising: Hard water contains high levels of calcium carbonate or bi-carbonate, magnesium and other salts that inactive pesticides and fertilisers. The water capacity to conduct electricity (EC) is related with its concentration of dissolved salts. **IMPROVE®** can neutralise the presence of these salts in the spraying water (hardness).

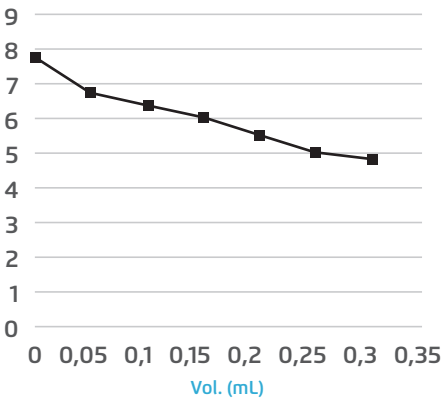
4- Humectant: IMPROVE® have the ability to lowers the point of deliquescence and prolongs the process of solution drying which is especially important to increase the efficacy of foliar sprays in arid and semi-arid regions.

5- Retention: Some plants have surface that naturally repels spray droplets. That can be resulted in poor droplet retention and a reduction of intended foliar fertiliser or pesticide dose. **IMPROVE®** retain more droplets on the leaf surface, so the applied product can do its work adequately.

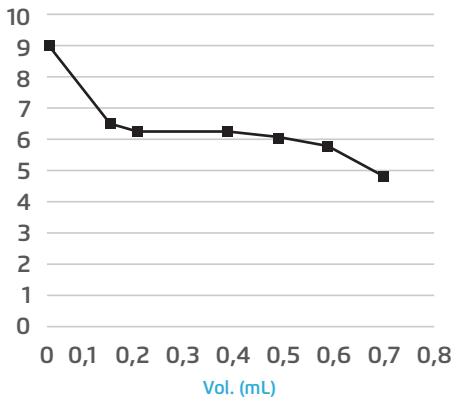
Efficacy trials

Sample	Initial pH	Conductivity (µS/cm)	Quantity of IMPROVE (µL) to obtain pink color	Final pH
1	7.82	1704	250	5.12
2	5.93	7.3	<50	3.68
3	8.97	45.4	4200	5.30
4	9.07	38.3	1300	4.78
5	6.09	2440	100	3.72
6	6.13	739	50	3.62
7	9.04	746	900	5.14

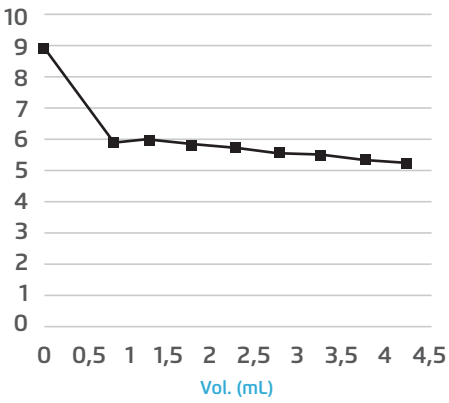
Sample 1.
Water with pHi: 7,82 and EC: 1704 µS/cm.
250 µL of IMPROVE® until pHf: 5.12



Sample 4.
Water with pHi: 9,07 and EC: 38,3 µS/cm.
1300 µL of IMPROVE® until pHf: 4,78



Sample 3.
Water with pHi: 8,97 and EC: 45,4 µS/cm.
4200 µL of IMPROVE® until pHf: 5.30



System and time of application

First, mix **IMPROVE®** with the sprayed water to obtain the optimum pH value, after we add the amount of fertiliser of foliar nutrient desired.

IMPROVE® must be added in small quantities to the spraying water with continuous agitation to obtain the desired pH.
If the tank content cannot be visualised, take a sample and add IMPROVE drop by drop in a graduated container, Measure the quantity of IMPROVE added to get optimum pH and add the same proportion to aspersion tank.

The quantity of **IMPROVE®** added depend on the hardness of water. Harder water requires higher amount of IMPROVE. To prevent overdosing, and independently of the amount added, **IMPROVE®** does not lead to pH values lower than 3.

Stability and storage

IMPROVE® is stable at least 3 years from the manufactured date.
Keep in a fresh and ventilated place with temperatures below 50C.
Do not store for long periods under direct sunlight.
Keep away from children.
De not eat, drink, or smoke while manipulating the product.

Water hardness	Conductivity (µs/cm)	Dose (ml/100 L)
Soft	< 150	40-50
Medium	200-300	50-60
Medium hard	300-400	100-120
Hard	400-450	180-200
Very hard	>500	>220

Compatibility

IMPROVE® is compatible with most crop protection products and fertilisers. For mixing with any other product, it is necessary to conduct a test in a small volume to assess compatibility. For further information, technical advice or any other enquiries, please contact your local distributor.