

Improved Flower Hydration with BioPhoton-X™ by Engeenuity

Water in a mass production flower crop is not only the vehicle for the nutrients that plants absorb from the soil, but also a management tool throughout the entire phenological cycle of each of the species and varieties that are planted, to obtain high quality stems with the characteristics that the end customer is looking for.

When referring to field management, the water must meet specific characteristics that allow the plants to follow the desired development. For example, at a nutritional level, it is sought that the water meets conditions of low concentration of solids of the three types, (dissolved, sediments and suspended), the hardness of the water, the presence of bacteria, among other parameters; to reduce the clogging of pipes for drip irrigation, and a better physiological activity of the conducting vessels of the plant. On the other hand, water also functions as a transport for the molecules of active ingredients that are applied to achieve control, whether of diseases caused by fungi and pathogenic bacteria in each case, or for the control of insects and other arthropods that affect the development of the plant.

For a flower producer, the world is split in two, the world of handling the plant in cultivation and the world of the flower in postharvest after cutting. Two worlds that are connected by managing each one step by step. If it is achieved in good management of the plant in the field, it is possible to harvest flowers that will develop in the best way in a vase, omitting possible pathogens or saprophytic organisms that take advantage of the physiological state of the plant. The next step would then be based on taking care of the flowers from the right moment of the cut. When a stem is cut, an opening is generated to the environment of the conducting vessels of the flower stem, an opening that must be carefully cared for, to avoid the plugging of the stems by solids, Fe, Mn,

Good quality hydration managed from cutting, reception in postharvest and, where applicable, from the finished bouquet to the dispatch of the flower, leads to the flower obtaining an optimal water supply for the development of characteristics such as turgor, opening and color maintenance.

The implementation of our technology "BioPhoton-X™" For the treatment of water with our pulsed light system Photonic Multiphase Modulators (PMM), Air / water exchangers and Photonic Screens, we managed not only to improve the characteristics of the water, breaking the surface tension, to reduce the presence of solids that affect all production processes, also generates a bacteriostatic effect and a better movement of molecules through plant tissues, which indicates savings in the supplementation of flocculating and coagulant substances for the treatment of the water source for hydration, as well as that of substances for bacterial management and pH stabilization.

If the implementation is achieved at each level, it could be said that it improves the nutritional process, by providing the nutrients that the plant demands for each of its biochemical and physiological processes, having plants that increase their "immune" response against external organisms that can affect, achieving a better use of fertilizers without exceeding in applications that are wasted and lost by washing or leaching, and saving then in the routine application of active control ingredients, thus achieving a more stable management of the action thresholds for having plants with a more optimal nutritional state. This can be extrapolated to the life of the stem after being harvested, since it can even reduce the presence of saprophytes due to the good physiological state of the plant and therefore of the stem,

If the water recovers the characteristics that nature provides, it is optimally incorporated into the metabolism of the plants, which leads to the development of healthy plants and therefore a saving in the additional tools necessary in production.

