

The effect of magnetic water in biological performance of honey bee colonies *Apis mellifera* L. (hymenoptera: apidae) - A mini review

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ABSTRACT:

Magnetized water is obtained by passing through or nearer to a specific magnetic field for a period of time. The benefit of this process is that it works to re-activate and improve many of its lost properties, including electrical conductivity and increase in the concentration of oxygen dissolved in water and increasing the ability to dissolved salts, acids polymerization, surface tension, change in the speed of chemical reactions, evaporation, wetness, softness, optical properties, electrical insulation, and increased permeability to become more energy and speedy than without magnetic treatment. The magnetization process re-organizes the water charges correctly while the shape of these charge is random and irregular in non-magnetized water. This magnetic field also works to reduce the viscosity of water because it increases the liquidity of water and makes it magnetized by magnetic properties through its ability to dissolve various components such as minerals and vitamins. It retains magnetic qualities up to 200 h. Magnetized water plays an important role in the biological performance of honey bees and that Honey bee colonies treated with magnetized water have improved as they reduce their agitation and increase their activity in the collection of honey as well as their daily needs of water, brood breeding storage of honey and pollen increase in their ability to produce royal food and secretion of wax in the collection of nectar, pollen and propolis as well as increased amounts of Bio-iron granules beneficial to the human body in honey bees. The effect of feeding the dissolved sucrose with magnetized water led to an increase in the area of brood, honey and pollen, and increased the rate of weight of wax frames and an increase in the number of workers, the number of frames occupied by workers and increased food stocks of honey and pollen.

Keywords:

Magnetic water, Honey bees, *Apis mellifera* L.