

WHAT IS STRUCTURED WATER AND HOW IT IS PRODUCED

The term structured water appears in early 20th Century writings referencing Victor Schauberger as an observer of moving natural water such as a stream increasing the viability of water in plants and humans and Albert Szent-Gyorgyi a physicist and chemist who early on postulated (accurately as recently proven) water with a liquid crystalline structure enhanced by light (photon) energy. Other scientists and keen observers by the dozens realized that such water felt smoother, made plants flourish and produce larger and higher quality yields.

The definition of exactly what this special water consisted of was not pursued as much as means to take standard tap water and replicate nature's effects on it by utilizing vortexes, crystals of various minerals, magnetic fields, the Golden (Fibonacci) Ratio, egg shaped glass vessels, colored lights, acoustic waves, etc.. Nothing harmful being done but the true process and the definition was missed entirely.

In 2013 a brilliant and of equal importance an unconventionally inquisitive biomedical engineering professor at the University of Washington named Dr. Gerald H. Pollack published *The Fourth Phase Of Water*. The book is a summary of years of study and scientific testing on an unusual phase of water that we are convinced is the long sought structure of water. This water occurs naturally in limited quantities in the right environment simply by the action of photons as supplied by sunlight and infrared energy. This water consists of a hexagonal shaped array of water (H_2O) molecules occupying a plane. During its production some hydrogen (H^+) ions are displaced so that additional hex planes of water molecules can stack upon one another with every other plane being horizontally slightly offset so that the planes ionically bond to one another as the stack grows. The longer the stack (structure) grows and the more stacks there are the higher the percentage of structured water. The missing hydrogen (H^+) from the structured columns ends up in the surrounding water where it combines with H_2O to form H_3O (hydronium). The removal of hydrogen slightly raises the pH of the structures and increases the oxygen percentage. Additionally, the structures become more dense (increased specific gravity) than regular water and because of the plane to plane bonding and quite probably stack to stack bonding also the viscosity increases. Summed up, structured water is denser (more of it in a drop), more viscous (said to be more like intercellular water), richer in oxygen percentage, increased surface tension and a naturally raised pH.

Producing this water actually consists of giving nature a boost. The first thing to accomplish is to reduce the TDS as much as possible because the presence of dissolved solids disrupts structural formation. So a reverse osmosis unit preferably with a TDS polishing filter is the starting point. Added should be vortexes for memory erasure, crystals for imparting frequencies and magnetic fields constructed to the Golden Ratio. This preparatory water is placed into pressurized storage until water is withdrawn from the RO faucet. On its way to the faucet the water passes through the Patent Pend. STRUCTURED WATER CELL. To convert the RO water to structured water requires exposing the water in sheets on super hydrophillicity surfaces. The water on the surface must maintain a contact angle of near zero. Infrared energy at 850nm wave length produced by multiple LED emitters is applied and is aided with titanium dioxide reflective surfaces to maximize structural growth. The energy source (less than 5 watts) is always on, so there is a large buildup of structured water between uses of water. The process works in

the absence of power input, but more slowly utilizing ever present infrared energy only. Data is incomplete on how long the structures maintain their integrity, so consumption is recommended as soon as possible.

Virtually all products currently being offered primarily on line include everything from modified food blenders to blown glass funnels to cylinders containing plastic balls. Efficacy of structured water production is claimed based on its feel, smoothness, wetness, etc. All good but nothing measureable offered. The science behind our system is based on actual measurements of surface tension using the Du Nouy ring method with a tensiometer, density measurement by isothermal weight/ volume comparisons and viscosity by the falling ball technique as related to Stokes Law. Capillary rise techniques using meniscus shape and level changes are avoided because recent studies question their validity.