FUNCTIONAL ELECTROLYZED WATe^-R

WHAT IS IT?

As noted by the Nobel Chemist, Albert Szent-Gyorgyi……..

- "Since the molecular structure of water is the essence of all life, the man (or woman*) who can control that structure in cellular systems will change the world."

- * added by the speaker

There are three categories of Functional Electrolyzed Water

- Mild electrolysis producing two streams of mildly restructured pH waters
- Intense electrolysis producing two streams of intensely restructured pH waters
- Intense, non-membrane electrolysis, producing a single stream of intensely restructured water properties with a fairly neutral pH

- **Today, we will speak about the two stream process and its properties and benefits**

A water with restructured properties bringing about functional abilities.

- As an antimicrobial food safety water
- As an organic agricultural water
- As an antimicrobial hygienic water
- As a wellness introducing drinking water

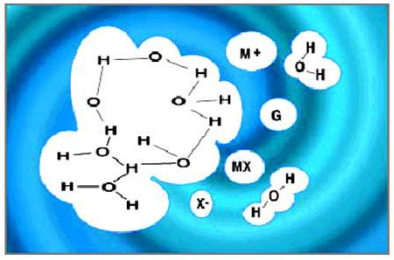
How is this water produced?

- Municipal tap water is used as a source water
- A small amount of salt is added
- The water is then processed through an electrolysis process
- The properties of pH, ORP, Ionic Product and Free Active Chlorine are redefined
- Two streams of ***functional*** water are produced

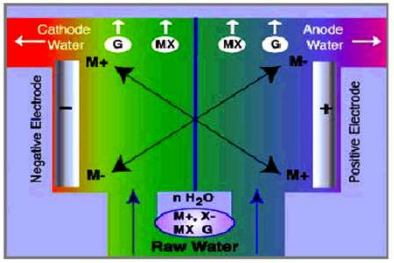
How Functional Water is Produced

The Process of Structuring Functional Electrolytic Water

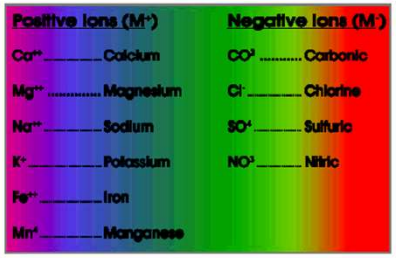
- Cluster of Water Molecules
- Electrolysis Chamber
- Electrolytes Found In
- Water Molecules



Molecular Structure Of Water



The Electrolysis Process



Separation Of Ions After Electrolysis

- Positive and Negative Ions
- Positive and Negative Electrical Charge
- Resultant Ion Separation

Instilled Properties After Electrolytic Ion Separation

ALKALINE ION CONCENTRATION

5 ~ 6 WATER MOLECULES

REDUCED OXIDATION

INCREASED HYDROGEN

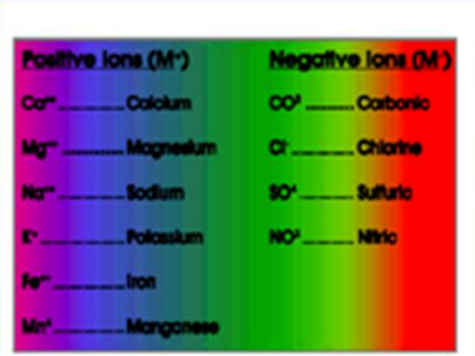
IMPROVED PERMEABILITY

IMPROVED SOLUBILITY

EFFECTIVE CATALYST

ELECTRON DONATING

HIGHLY ENERGIZED



Separation Of Ions After Electrolysis

ACIDIC ION CONCENTRATION

6 ~ 7 WATER MOLECULES

INCREASED OXIDATION

REDUCED HYDROGEN

IMPROVED PERMEABILITY

IMPROVED SOLUBILITY

EFFECTIVE CATALYST

ELECTRON SCAVENGING

HIGHLY ENERGIZED

Two streams of water

- A primary stream of water with an alkaline pH, smaller water clusters, electron donating ability and highly energized
- A secondary stream of water with an acidic pH, smaller water clusters, electron scavenging ability and highly energized

Unique properties of Functional Electrolyzed Water

- Water with smaller clusters on account of the separation of alkaline and acidic electrolytes
- Water with a lower surface tension
- Water with either an alkaline electrolyte concentration or an acidic electrolyte concentration
- Water with an ability to either donate (reduced) electrons or to scavenge (oxidize) electrons

- **Water with a higher ability to create a positive reaction at a cellular or surface level**

Functional Alkaline Water and its properties

- pH range of 7.0 (mild) ~ 12.0 (intense)
- Oxidation Reduction Potential of <–800 mV
- Improved permeating ability
- Effective nutrient carrier
- Effective electron donor
- Effective emulsifier

Functional Acidic Water and its properties

- pH range of 6.5 (mild) ~ 2.3 (intense)
- Oxidation Reduction Potential of >+1000 mV
- Improved permeating ability
- Effective electron scavenger
- Effective antimicrobial

Low pH acidic water as an antimicrobial water

- There are 5 properties within Functional Electrolyzed Low pH Water that contribute to its antimicrobial abilities

- Lower surface tension (ensures efficacious permeation)
- pH of 2.3 ~ 2.5 (softens the outer membrane of a microbe)
- Oxidation Reduction Potential of >+1000 mV (oxidizes the life sustaining electron from the microbe)
- Free Active Chlorine of 20~30ppm (ensures the kill)
- Higher state of energized ionic product

Benefits in its use

- Non-toxic, non-chemical, water based medium
- Safe to the handler and environment - GRAS
- On site preparation
- Highly efficacious against a wide array of microbes, fungi, virus and certain spores
- A very flexible medium in a wide array of uses
- FDA-EPA-USDA recognized active ingredient ~ hypochlorous acid

- **A totally new paradigm in thinking**

Antimicrobial food safety water

- A non-toxic, user and eco friendly, highly antimicrobial food washing water - GRAS
- Highly effective against E.Coli, Salmonella and Listeria
- No special handling or disposal requirements
- Produced on site and on demand

- **Builds consumer and regulatory confidence**

Abstract from WSU on food safety

(combined and abridged)

- The combined abstracts read: The ability of electrolyzed water (EW) to inactivate foodborne pathogens on the surfaces of lettuce, spinach, green onion and tomatoes were investigated. These produce items were inoculated with a cocktail of three strains each of *Escherichia coli* O157:H7, *Salmonella* Typhimurium, and *Listeria monocytogenes* and treated with acidic electrolyzed water, alkaline electrolyzed water, alkaline electrolyzed water followed by acidic electrolyzed water, deionized water followed by acidic electrolyzed water for 15 sec, 30 sec, 1 min, 3 min and 5 min at room temperature (22+/-2°C). For all three pathogens, the same pattern of microbial reduction on four produce items were apparent. Results suggest that the acidic electrolyzed water treatment was able to significantly reduce populations of the three tested pathogens from the surfaces of the produce with increasing time of exposure.

Non-chemical agricultural water

- Low pH water:
  - Anti-fungal, anti-bacterial
  - Non toxic, user and eco friendly
  - Organic
- High pH water:
  - Root and foliage nutrient

Combined usage establishes a stronger plant's immune system, better health and a state of homeostasis

User friendly antimicrobial hygienic water

- A non-toxic, non-allergenic, user and eco friendly hygienic water
- A medium that can be delivered in liquid, mist, gauze and gel forms
- Highly effective against S.Aureus ATCC2592, MRSA, MRSE, Pseudomonas Aeruginosa

- **Improved staff and patient care**

ADVANTAGES OF FUNCTIONAL WATER OVER OTHER COMMONLY-USED DISINFECTANTS

NEGATIVE EFFECTS ON:				DISINFECTANT EFFECTS ON:					
Disinfectant	Environment	Instrument	Hand & Skin	Standard Bacteria	MRSA	Resistant Cell	Fungi	Spore	HIV
Glutaral	Safe	Safe	Caution	Good	Good	Good	Good	Good	Good
Sodium Hypo-Chlorous Acid	Caution	Safe	Caution	Good	Good	Good	Good	Non Effective	Good
Ethanol	Caution	Safe	Safe	Good	Good	Good	Good	Non Effective	Good
Wellpass	Caution	Caution	Safe	Good	Good	Good	Good	Non Effective	Good
Isopropanol	Caution	Safe	Safe	Good	Good	Good	Good	Non Effective	Good
Provodine Iodine	Caution	Caution	Safe	Good	Good	Good	Good	Non Effective	Good
Dilute Iodine Tincture	Caution	Caution	Safe	Good	Good	Good	Good	Non Effective	Good
Cresol Soap Liquid	Caution	Caution	Caution	Good	Good	Good	Non Effective	Non Effective	Non Effective
Benzethonium Chloride	Safe	Safe	Safe	Good	Non Effective	Non Effective	Non Effective	Non Effective	Non Effective
Chlorohexidine	Safe	Safe	Safe	Good	Non Effective	Non Effective	Non Effective	Non Effective	Non Effective
Amphoteric Detergent	Safe	Safe	Safe	Good	Non Effective	Non Effective	Non Effective	Non Effective	Non Effective
Bio Tech-e	Safe	Safe	Safe	Good	Good	Good	Good	Good	Good

Mild alkaline pH water as a drinking water

- **Today, there is a wide variety of drinking water:**
  - Tap Water
  - Bottled Water
    - Purified water
    - Mineral water
    - Spring water
    - Sparkling water
    - Artesian water

Definition of a good drinking water

- Water that is safe for consumption
- Water that tastes good
- Water that has a good balance of minerals
- Water that is alkaline in pH
- Water that has improved permeability
- Water that has a higher level of dissociation activity

Why a mild alkaline pH water is a good drinking water

- Aligns closely with the alkaline pH of the blood of 7.3 while acting as an anti acid
- Improved hydration through a lower surface tension
- Excellent carrier of alkaline minerals
- Minimizes oxidation and provides electrons
- Assists in strengthening the immune system

FUNCTIONAL ELECTROLYZED WATER

- **IN SUMMARY**

- **A new paradigm ~ *functional***
- **A medium for upstream and downstream use**
- **Highly efficacious and flexible in its use**
- **User and eco friendly = socially responsible**
- **Cost effective**

THANK YOU!