



RJJ Forensic Consulting

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Experiment 9 – Food Dye in Water

Part 1 - This experiment involved adding food dye to water then treating the water with the Aqua-Chi® for approximately 20 minutes and observing the results.

Part 2 - This experiment involved adding two different colored food dyes to the water then treating the water with the Aqua-Chi® for approximately 20 minutes and observing the results.

Part 3 - This experiment involved comparing the effects of the Aqua-Chi® and the IonCleanse® (**mode 3**) on water with two different colored food dyes added.

Part 4 - This experiment involved adding food dye to water then treating the water with the Cell Spa (**mode 3**) for approximately 20 minutes and observing the results.

Part 5 - This experiment involved adding food dye to water then treating the water with the Aqua-Chi® module connected to the IonCleanse® power supply for approximately 20 minutes and observing the results.

Experiment 9 – Food Dye in Water

- Aim**
- Part 1** - To add food dye to water, treat the water with the Aqua-Chi® for approximately 20 minutes and then observe the results.
- Part 2** - To add two different colored food dyes to water, treat the water with the Aqua-Chi® for approximately 20 minutes and then observe the results.
- Part 3** – To compare the effects of the Aqua-Chi® and the IonCleanse® on water with two different colored food dyes added.
- Part 4** - To add food dye to water, treat the water with the Cell Spa (**mode 3**) for approximately 20 minutes and then observe the results.
- Part 5** – To add food dye to water, treat the water with the Aqua-Chi® module connected to the IonCleanse® power supply for approximately 20 minutes and then observe the results.

- Materials**
- Aqua-Chi®
 - Ammeter (Tenma 72-7277 DC Current Meter)
 - 2 x glass jars
 - Blue, red, yellow, green food dye
 - Video recorder
 - Digital still camera

Method

Part 1

A glass jar was filled with 2L of city water and sufficient salt was added to produce a 2.0amp power flow (see **Diagram 1**). The video recorder was turned on and 20 drops of blue dye was added to the water. The water was stirred to mix the dye in evenly. The Aqua-Chi® was then placed in the water and turned on and the water was treated for approximately 20 minutes. **NOTE:** The ammeter was attached to the Aqua-Chi® during use and the amperages for each treatment of Aqua-Chi® water were approximately 2.0amps. This was repeated using 20 drops of the red dye, again with 20 drops of yellow dye and again

with 20 drops of green dye. The treated water was allowed to stand for approximately 1 hour and photos were taken to show the results.

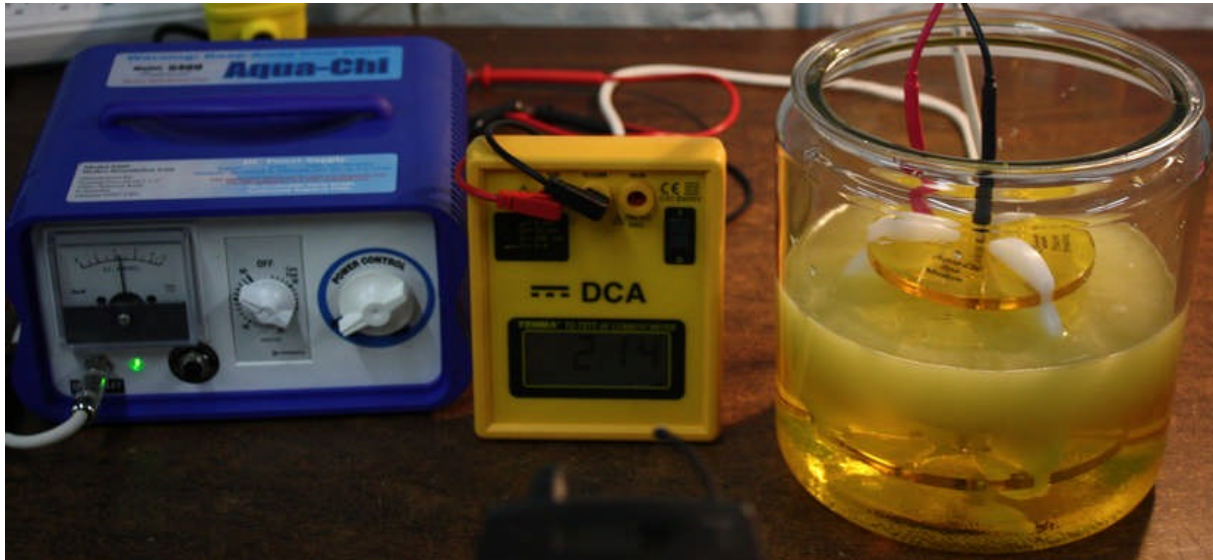


Diagram 1: Aqua-Chi® set up and running with an ammeter attached in water with yellow dye.

Part 2

A glass jar was filled with 2L of city water and sufficient salt was added to produce a 2.0amp power flow for the Aqua-Chi®. The video recorder was turned on and 10 drops of blue dye and 10 drops of red dye were added to the water. The water was stirred to mix the dye in evenly. The Aqua-Chi® was then placed in the water and turned on and the water was treated for approximately 20 minutes. **NOTE:** The ammeter was attached to the Aqua-Chi® during use and the amperages for each treatment of Aqua-Chi® water were approximately 2.0amps. This was repeated using 10 drops of the red dye and 10 drops of yellow dye. The treated water was allowed to stand for approximately 1 hour and photos were taken to show the results.

The above was repeated using 3.5L of water instead of 2L. 20 drops of blue dye and 10 drops of red dye were added to the water. The treated water was also left overnight undisturbed and photos were taken the next day.

Part 3

2 glass jars were filled with 2L of city water and sufficient salt was added to one to produce a 2.0amp power flow for the Aqua-Chi® and to the other to produce a 2.0amp power flow for the IonCleanse® **mode 3** (see **Diagram 2**). The video recorder was turned on and 10 drops of blue dye and 10 drops of red dye were added to the water in each of the jars. The water was stirred to mix the dye in evenly. The Aqua-Chi® was then placed in the water and turned on and the water was treated for approximately 20 minutes. **NOTE:** The ammeter was attached to the Aqua-Chi® during use and the amperages for each treatment of Aqua-Chi® water were approximately 2.0amps. The IonCleanse® was then placed in the water in the other jar and turned on and the water was treated for approximately 20 minutes. **NOTE:** The ammeter was attached to the IonCleanse® during use and the amperages for the treatment were approximately 1.8amps - 2.2amps. The treated water was allowed to stand for approximately 1 hour and photos were taken to show the results.



Diagram 2: Aqua-Chi® set up and running on the left and IonCleanse® set up and running on the right.

Part 4

A glass jar was filled with 2L of city water and sufficient salt was added to produce a 2.0amp power flow for the Cell Spa **mode 3** (see **Diagram 3**). The video recorder was turned on and 10 drops of blue dye and 10 drops of red dye were added to the water. The water was stirred to mix the dye in evenly. The Cell Spa was then placed in the water and turned on and the water was treated for approximately 20 minutes. **NOTE:** The ammeter was attached to the Cell Spa during use and the amperage for the treatment was approximately 1.6amps. The treated water was allowed to stand for approximately 1 hour and photos were taken to show the results. The treated water was also left overnight undisturbed and photos were taken the next day.



Diagram 3: Cell Spa set up and running with ammeter attached.

Part 5

A glass jar was filled with 2L of city water and sufficient salt was added to produce a 2.0amp power flow for the Aqua-Chi® module connected to the IonCleanse® power supply on **mode 3** (see **Diagram 4**). The video recorder was turned on and 10 drops of blue dye and 10 drops of red dye were added to the water. The water was stirred to mix the dye in evenly. The Aqua-Chi® module was then placed in the water and turned on and the water was treated for approximately 20 minutes. **NOTE:** The ammeter was attached to the Aqua-Chi® module during use and the amperage was approximately 1.8amps. The treated water was allowed to stand for approximately 1 hour and photos were taken to show the results. The above was repeated using the Aqua-Chi® module attached to the IonCleanse® power supply on **mode 2** (amperage was approximately 1.8amps).

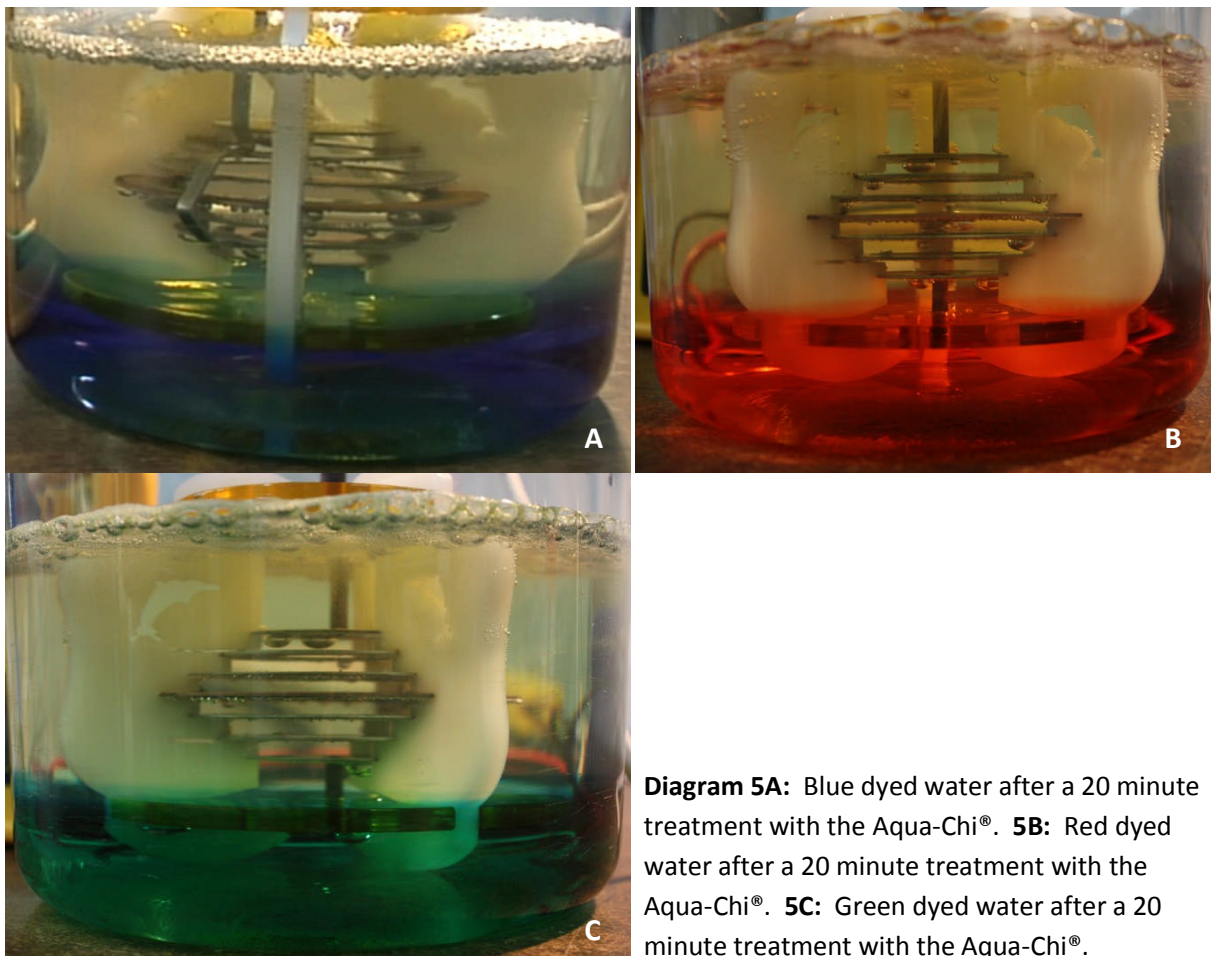


Diagram 4: Aqua-Chi® module connected to the IonCleanse® power supply.

Results

Part 1

The blue dye was uniform throughout the water but after approximately 20mins of treatment with the Aqua-Chi[®], the water became layered with the blue dye at the bottom and clear water at the top. The line where the bottom layer and the top layer met was slightly underneath the bottom plate of the Aqua-Chi[®] spa module array. The color of the blue water at the bottom was considerably paler than the blue water before it was treated. The results were the same for the red dye, yellow dye and green dye (see **Diagram 5**).



Part 2

The results were the same as above for the red dye/ blue dye and the red dye/ yellow dye (see **Diagram 6**). The undisturbed water after 24hrs was completely clear with a small amount of green colored residue on the bottom of the glass jar.

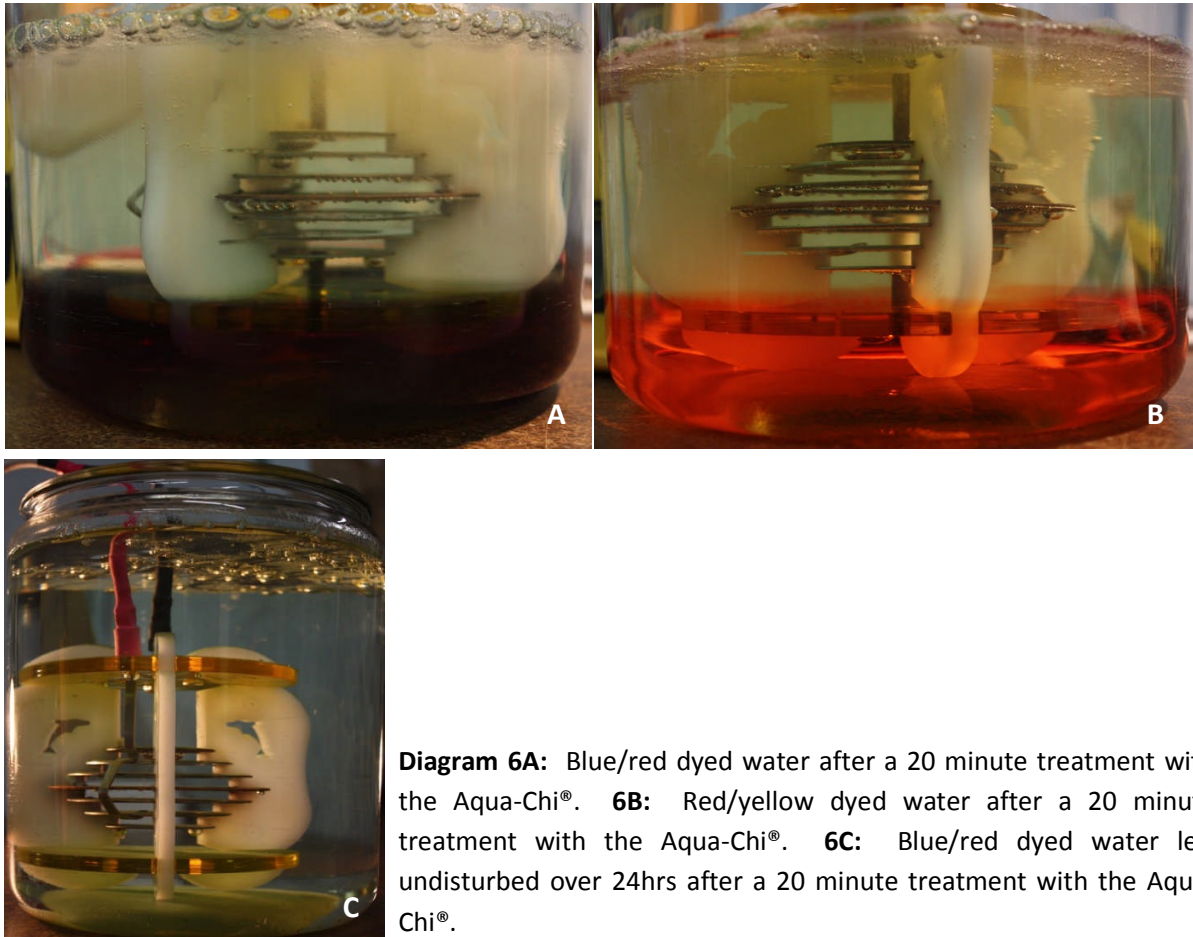


Diagram 6A: Blue/red dyed water after a 20 minute treatment with the Aqua-Chi®. **6B:** Red/yellow dyed water after a 20 minute treatment with the Aqua-Chi®. **6C:** Blue/red dyed water left undisturbed over 24hrs after a 20 minute treatment with the Aqua-Chi®.

Part 3

The water treated with the Aqua Chi® became layered with the blue dye at the bottom and clear water at the top. The water treated with the IonCleanse® became a rusty orange in color with a tinge of purple. There was no separation of the dye from the water in the IonCleanse® water (see **Diagram 7**).

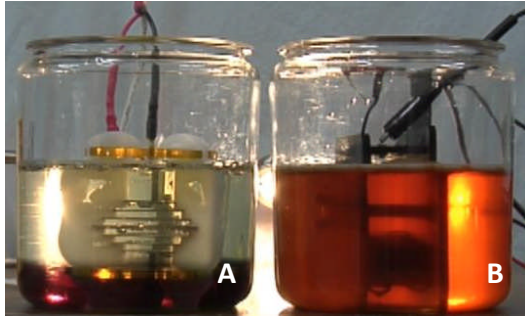


Diagram 7: Aqua-Chi® on left (**7A**) and IonCleanse® on right (**7B**) after 20 minute treatments.

Part 4

The water treated with the Cell Spa became layered with the blue dye at the bottom and clear water with a brown tinge at the top (see **Diagram 8**). There was a layer of brown/black sludge on the top of the water. The undisturbed water after 24hrs was clear with a large layer of brown precipitate on the bottom of the glass jar and at the top of the water.

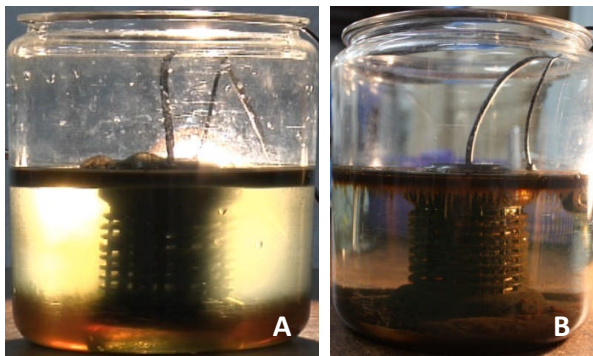


Diagram 8A: Water after 20 minutes of treatment with the Cell Spa. **8B:** Water left undisturbed over 24hrs after a 20 minute treatment with the Cell Spa.

Part 5

The water treated with the Aqua Chi® module attached to the IonCleanse® power supply became layered with the blue/red dye at the bottom and water tinged brown at the top (see **Diagram 9**). The results were the same with the IonCleanse® power supply on mode 2 and on mode 3.

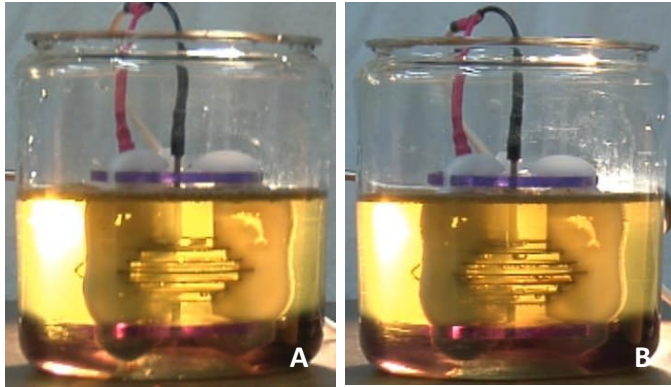


Diagram 9: Water after 20 minutes of treatment with the Aqua-Chi® module attached to the IonCleanse® power supply. The photo on the left (9A) had the IonCleanse® power supply on mode 2 and the photo on the right (9B) was on mode 3.