Soysoap Restructures Water, Soils and Chemicals and Spray Rig Pressure Drops by 19%.

Wakeup was a private label of Soysoap below.

Incidentally, my customer just called with this: Question: Is there something about the SoySoap which keeps a Hy-pro centrifuge pump from developing the full amount of pressure it does with "normal" water?

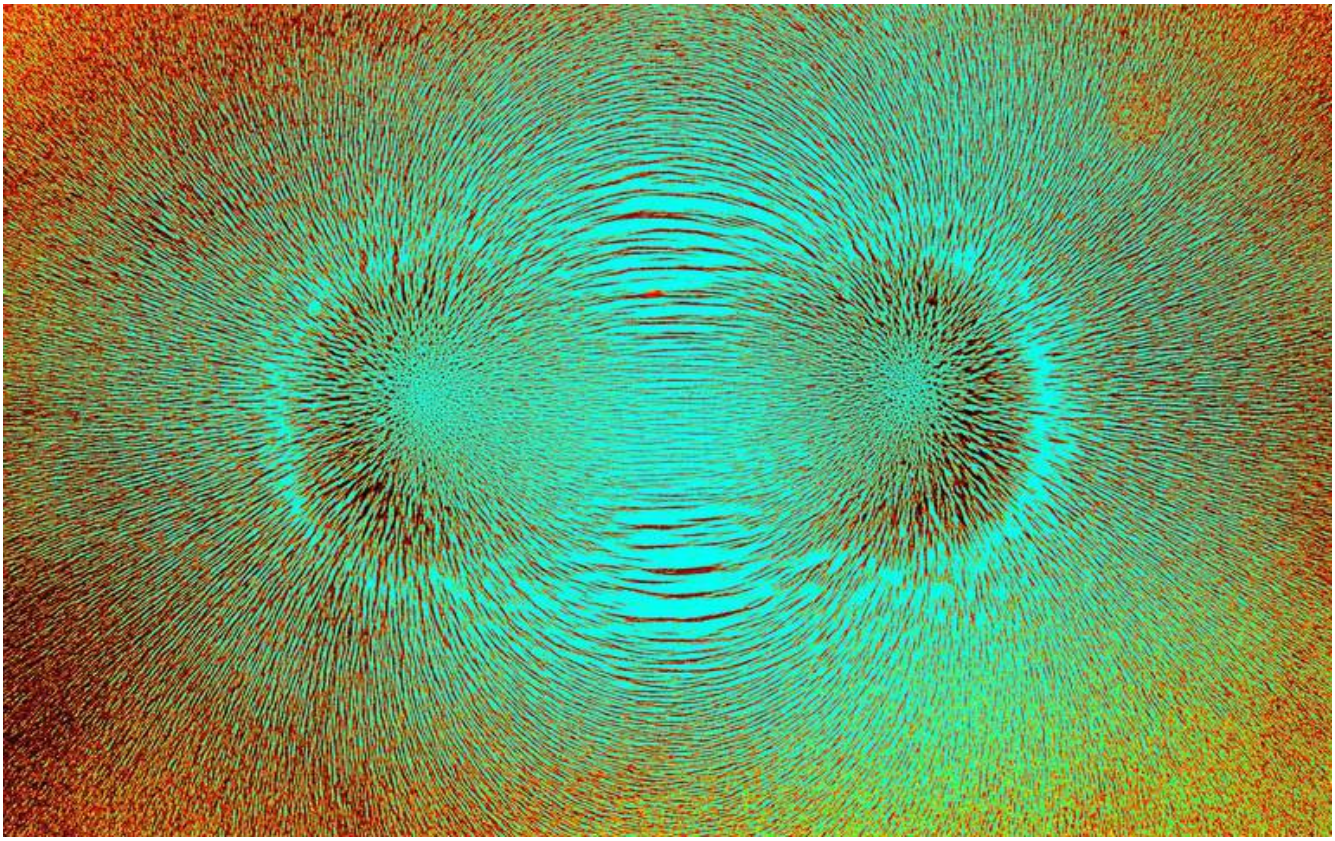
The farmer said that normally, his spray monitor set to deliver 10 gallons of spray mix per acre allows him to generate 35 to 37 lbs. of pressure, and run at 8.5 miles per hour with a 90-foot boom. He has a Hy-pro centrifuge pump driven hydraulically. But on repeated occasions, when he puts SoySoap in the tank mix, the pump generates only 28 to 30 lbs. of pressure and he can run at only 7.5 miles per hour to deliver 10 gallons per acre.

He wants to know: Is the "wetness" or "more slippery" nature of the water causing this? And if so, how could that physically occur in a centrifuge pump? Has anyone else noticed this? I said I'd ask you, and perhaps some other users have an answer. Maybe a piston pump wouldn't have the same change in performance.

Answer: Soysoap can modify the dynes/draves from 70 to 30 and restructures the water which does change the properties shape and size of the water molecules. In this case the farmer has seen a 19% change in pump pressure. He has compensated for this by slowing down his tractor 12%. What appears to be happening is the water molecules are being distorted into another shape therefore changing the pressure.

Answer : Yes the Soysoap will change the viscosity and or Microsiemens of liquids. The centrifugal pumps due to design always cavitate hence foam in tanks. The soap lubricates and makes water and fertilizer flow different which in turn relieves internal pressure in spray systems. Soysoaped Water Foliar Feeds, Urea, Ammonium Sulfate (AMS), Pesticides, Herbicides, Surfactants and Fertilizer especially should show a pressure drop as well makes 4 to 6 lbs. difference in a sprayer. But the benefit is you should get more product into the plants to achieve "Maximum Genetic Potential" or be able to help a herbicide kill weeds or other tasks at hand.

Para magnetism: Definition and Examples How Paramagnetic Materials Work



by Anne Marie Helmenstine, Ph.D. Updated July 17, 2018

Paramagnetism refers to a property of materials that are weakly attracted to a magnetic field. When exposed to an external magnetic field, internal induced magnetic fields form in the material that are ordered in the same direction as the applied field. Once the applied field is removed, the material loses its magnetism as thermal motion randomizes the electron spin orientations.

Materials that display paramagnetism are called **paramagnetic**. Some compounds and most chemical elements are paramagnetic. However, true paramagnets display magnetic susceptibility according to the Curie or Curie-Weiss laws and exhibit paramagnetism over a wide temperature range. Examples of paramagnets include the coordination complex myoglobin, other transition metal complexes, iron oxide (FeO), and oxygen (O2). Titanium and aluminum are metallic elements that are paramagnetic.

Superparamagnets are materials that show a net paramagnetic response, yet display ferromagnetic or ferrimagnetic ordering at the microscopic level. These materials adhere to the Curie law, yet have very large Curie constants. Ferrofluids are an example of

superparamagnets. Solid superparamagnets may also be known as mictomagnets. The alloy AuFe is an example of a mictomagnet. The ferromagnetic coupled clusters in the alloy freeze out below a certain temperature.

How Paramagnetism Works

Paramagnetism results from the presence of least one unpaired electron spin in the material's atoms or molecules. So, any material that possesses atoms with incompletely filled atomic orbitals is paramagnetic. The spin of the unpaired electrons gives them a magnetic dipole moment. Basically, each unpaired electron acts as a tiny magnet. When an external magnetic field is applied, the spin of the electrons aligns with the field. Because all the unpaired electrons align the same way, the material is attracted to the field. When the external field is removed, the spins return to their randomized orientations.

The magnetization approximately follows Curie's law. Curie's law states that the magnetic susceptibility χ is inversely proportional to temperature:

$$M = \chi H = CH/T$$

Where M is magnetization, χ is magnetic susceptibility, H is the auxiliary magnetic field, T is the absolute (Kelvin) temperature, and C is the material specific Curie constant

In a paramagnetic material, the magnetization of the material is (approximately) directly proportional to an applied magnetic field. However, if the material is heated, this proportionality is reduced: for a fixed value of the field, the magnetization is (approximately) inversely proportional to temperature. This fact is encapsulated by Curie's law, after Pierre Curie:

$$\mathbf{M} = C \cdot \mathbf{B}\, T\,,$$

where

$\mathbf{M}$ ***is the resulting magnetization in amperes/meter (A/M),***
$\mathbf{B}$ ***is the magnetic field density, measured in teslas (T),***
T ***is absolute temperature, measured in kelvins (K),***
C ***is a material-specific Curie constant (K).***

Comparing Types of Magnetism

Magnetic materials may be identified as belonging to one of four categories: ferromagnetism, paramagnetism, diamagnetism, and anti-ferromagnetism. The strongest form of magnetism is ferromagnetism.

Ferromagnetic materials exhibit magnetic attraction that is strong enough to be felt. Ferromagnetic and ferrimagnetic materials may be remain magnetized over time. Common iron-based magnets and rare earth magnets display ferromagnetism.

In contrast to ferromagnetism, the forces of paramagnetism, diamagnetism, and antiferromagnetism are weak. In antiferromagnetism, the magnetic moments of molecules or atoms align in a pattern in which neighbor electron spins point in opposite directions, but the magnetic ordering vanishes above a certain temperature.

Paramagnetic materials are weakly attracted to a magnetic field. Antiferromagnetic materials become paramagnetic above a certain temperature.

Diamagnetic materials are weakly repelled by magnetic fields. All materials are diamagnetic, but a substance isn't called diamagnetic unless the other forms of magnetism are absent. Bismuth and antimony are examples of diamagnets.

Biobased USA and PicoTechnology LLC Adaptation for Agriculture

PicoAG Experience with Paramagnetic and PicoAG and Additives:

The basalt rock dust we use has not only up to 70 trace elements but big paramagnetic power. (not all rock dusts are the same!)

We mix 1250kg rock dust at a time in 3500 liters water to foliar feed our pasture.
This will only work in a Tow and Fert multi 4000 spray rig; it has a propeller built in to stir the contents, necessary to mix products and to keep fine particles in suspension,
and only 2 discharge nozzles to spray a 25 meter width (We are focussed on doing wet mix plant food application to eliminate dust loss -
the best and finest dust with biggest surface area end up on our plants and not the neighbors place!)

The dust must be screened to 100 mesh or greater (smaller particle). Surface area of product is important for fast results.

We also mix elemental S powder, fish hydrolysate, soluble humic acid, calcium nitrate and molasses with the rock dust.

We have discovered the benefit of soysoap as a wetting agent. Watching it break up the S powder and disperse it into the water (Sulphur doesn't mix easily in water, it just floats) and the other dry powders is a great sight, and it is clearly reacting with the ingredients before it gets applied to the plant. Who knows what is going on!

We use 10 liters soap added to 3000 liters water first, then S, then humic, then N, then molasses, then rock powder, then fish last.

The liquid when mixed is becoming almost a gel, very heavy with fine particles and reactions. This is no problem for the Tow and fert multi 4000 to spray.

PicoAg 25B works wonders on soils. More Soap more Particles!

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Fecha : **1 de abril 2008**
Informe número : 351801 / 0803403
N° análisis : 08-08746
Fecha toma muestra : 18 de marzo 2008
Muestra tomada por :
Fecha análisis : 27 de marzo 2008
Identif. muestra : 1 Sin producto
Situación : Virgen
Cultivo : Broccoli
Código referencias : G04
Código agua riego :
Agua alternativa :

Hacienda Limache
att.Sr. X.E. Alarcon

MULALO
Ecuador

Análisis químico de : Suelo

			Cationes: ppm (millimoles/l)						Aniones: ppm (millimoles/l)					Microelementos: ppb (micromoles/l)					
Análisis	pH	EC	NH_4^+	K^+	Na^+	Ca^{2+}	Mg^{2+}	Si	NO_3^-	Cl^-	SO_4^{2-}	HCO_3^-	$H_2PO_4^-$	Fe	Mn	Zn	B	Cu	Mo
	KCl	mS/cm 25°C	Amonio	Potasio	Sodio	Calcio	Magnesio	Silicio	Nitrato	Cloro	Sulfato si S	Bicarbonato	Fosfato si P	Hierro	Manganeso	Cinc	Boro	Cobre	Molibdeno
Resultado	**6.6** Alto	0.3	<3.6 (<0.2)	**31** (0.8) Bajo	<6.9 (<0.3)	**16** (0.4) Bajo	**7.3** (0.3) Bajo	8.4 (0.3)	99 (1.6)	<11 (<0.3)	**<19** (<0.2) Bajo	18 (0.3)	13 (0.13)	**78** (1.4) Bajo	**<11** (<0.2) Bajo	**<13** (<0.2) Bajo	**104** (9.6) Bajo	19 (0.3)	<9.6 (<0.1)

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Fecha : **1 de abril 2008**
Informe número : 351801 / 0803403
N° análisis : 08-08747
Fecha toma muestra : 18 de marzo 2008
Muestra tomada por :
Fecha análisis : 27 de marzo 2008
Identif. muestra : 2 con aplicacion
Situación : 0.05 conc
Cultivo : Broccoli
Código referencias : G04
Código agua riego :
Agua alternativa :

Hacienda Limache
att.Sr. X.E. Alarcon

MULALO
Ecuador

Análisis químico de : Suelo

			Cationes: ppm (millimoles/l)						Aniones: ppm (millimoles/l)					Microelementos: ppb (micromoles/l)					
Análisis	pH	EC	NH_4^+	K^+	Na^+	Ca^{2+}	Mg^{2+}	Si	NO_3^-	Cl^-	SO_4^{2-}	HCO_3^-	$H_2PO_4^-$	Fe	Mn	Zn	B	Cu	Mo
	KCl	mS/cm 25°C	Amonio	Potasio	Sodio	Calcio	Magnesio	Silicio	Nitrato	Cloro	Sulfato si S	Bicarbonato	Fosfato si P	Hierro	Manganeso	Cinc	Boro	Cobre	Molibdeno
Resultado	**6.8** Alto	0.2	<3.6 (<0.2)	**20** (0.5) Bajo	<6.9 (<0.3)	**<8.0** (<0.2) Bajo	**<4.9** (<0.2) Bajo	8.4 (0.3)	**<25** (<0.4) Bajo	<11 (<0.3)	**19** (0.2) Bajo	24 (0.4)	14 (0.14)	296 (5.3)	**27** (0.5) Bajo	150 (2.3)	**82** (7.6) Bajo	32 (0.5)	<9.6 (<0.1)

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Fecha : **1 de abril 2008**
Informe número : 351801 / 0803403
N° análisis : 08-08748
Fecha toma muestra : 18 de marzo 2008
Muestra tomada por :
Fecha análisis : 27 de marzo 2008
Identif. muestra : 3 con aplicacion
Situación : 0.3 conc
Cultivo : Broccoli
Código referencias : G04
Código agua riego :
Agua alternativa :

Hacienda Limache
att.Sr. X.E. Alarcon

MULALO
Ecuador

Análisis químico de : Suelo

			Cationes: ppm (millimoles/l)						Aniones: ppm (millimoles/l)					Microelementos: ppb (micromoles/l)					
Análisis	pH	EC	NH_4^+	K^+	Na^+	Ca^{2+}	Mg^{2+}	Si	NO_3^-	Cl^-	SO_4^{2-}	HCO_3^-	$H_2PO_4^-$	Fe	Mn	Zn	B	Cu	Mo
	KCl	mS/cm 25°C	Amonio	Potasio	Sodio	Calcio	Magnesio	Silicio	Nitrato	Cloro	Sulfato si S	Bicarbonato	Fosfato si P	Hierro	Manganeso	Cinc	Boro	Cobre	Molibdeno
Resultado	**6.7** Alto	0.3	<3.6 (<0.2)	**31** (0.8) Bajo	<6.9 (<0.3)	**8.0** (0.2) Bajo	**<4.9** (<0.2) Bajo	8.4 (0.3)	**<25** (<0.4) Bajo	<11 (<0.3)	**48** (0.5) Bajo	31 (0.5)	**16** (0.16) Alto	**570** (10) Alto	60 (1.1)	**353** (5.4) Alto	**90** (8.3) Bajo	38 (0.6)	<9.6 (<0.1)

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Fecha	**: 1 de abril 2008**
Informe número	: 351801 / 0803403
N° análisis	: 08-08749
Fecha toma muestra	: 18 de marzo 2008
Muestra tomada por	:
Fecha análisis	: 27 de marzo 2008
Identif. muestra	: 3 con aplicacion
Situación	: 0.5 conc
Cultivo	: Broccoli
Código referencias	: G04
Código agua riego	:
Agua alternativa	:

Hacienda Limache
att.Sr. X.E. Alarcon

MULALO
Ecuador

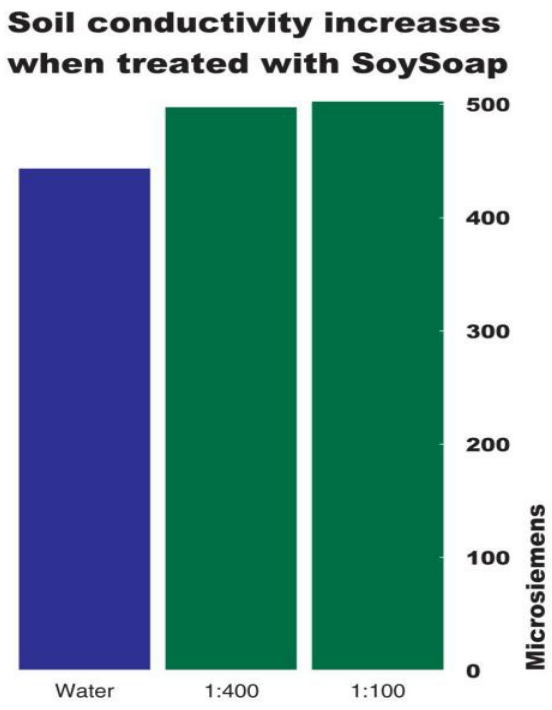
Análisis químico de : Suelo

			Cationes: ppm (millimoles/l)						Aniones: ppm (millimoles/l)					Microelementos: ppb (micromoles/l)					
Análisis	pH	EC	NH_4^+	K^+	Na^+	Ca^{2+}	Mg^{2+}	Si	NO_3^-	Cl^-	SO_4^{2-}	HCO_3^-	$H_2PO_4^-$	Fe	Mn	Zn	B	Cu	Mo
	KCl	mS/cm 25°C	Amonio	Potasio	Sodio	Calcio	Magnesio	Silicio	Nitrato	Cloro	Sulfato si S	Bicarbonato	Fosfato si P	Hierro	Manganeso	Cinc	Boro	Cobre	Molibdeno
Resultado	**6.8** Alto	0.2	3.6 (0.2)	**20** (0.5) Bajo	<6.9 (<0.3)	**<8.0** (<0.2) Bajo	**<4.9** (<0.2) Bajo	5.6 (0.2)	**<25** (<0.4) Bajo	<11 (<0.3)	**<19** (<0.2) Bajo	37 (0.6)	**16** (0.17) Alto	**1190** (21) Alto	93 (1.7)	**510** (7.8) Alto	**78** (7.2) Bajo	38 (0.6)	<9.6 (<0.1)

PicoAg 25B Helps Nutrient Translocation, the Missing Link

Don- Very impressive. Awhile back when I did analysis on your product you sent me I remember my comment was "it very definitely resembled soap!" Results look good. Mechanism for increased production would appear to be soap ingredients act as a vehicle for plant nutrient entry and assimilation. Thanks for information. Good Luck on your Biobased Products. John Noakes, Ph. D., Director, Center for Applied Isotope Studies, The University of Georgia, and Athens, Georgia 30602.

Than comments from Jerry Pritchard who helped start Monsanto AG back in the 60's. He made the comments and said they been trying for 30 years after selling fertilizers into the plants as it would always be there the following years.



Electrical conductivity of soil rises about 10% when a soil sample is moistened with SoySoap

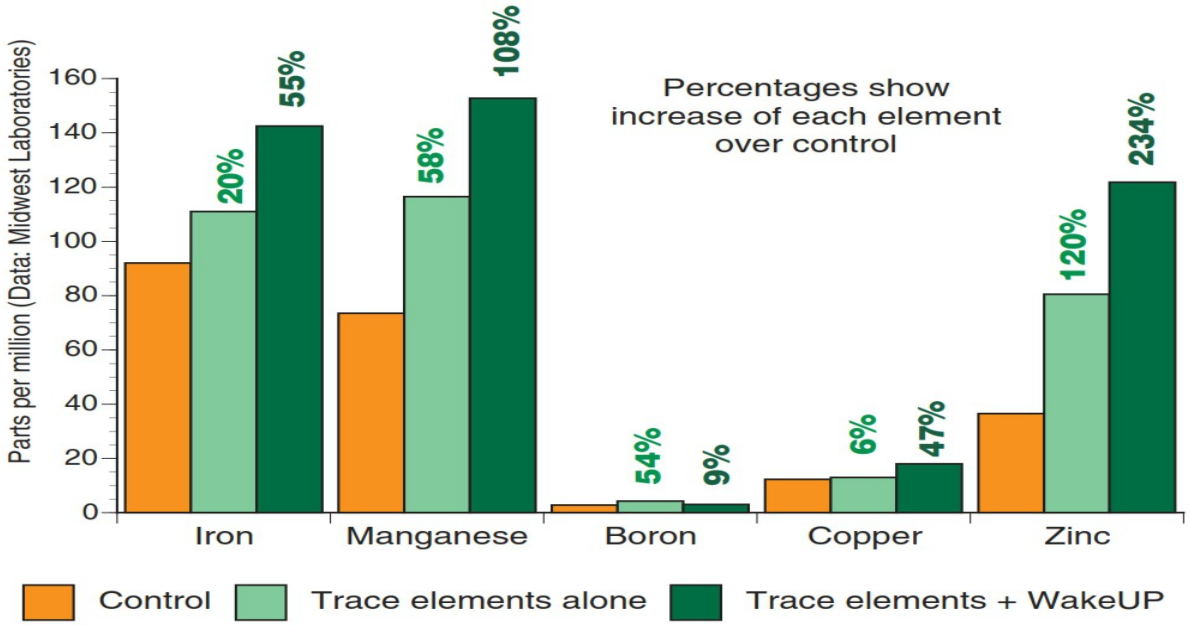
This test attempted to simulate soil electrical conductivity response to in-furrow treatment of SoySoap solution alone. In general, higher EC enables more active nutrient transfer from soil to crops.

60 milliliters of test solution were added to 500 grams of moist topsoil in a Ziplock bag. Soil was mixed, then stored 12 hours to become uniform in moisture by capillary action. Soil treated with either a 1:100 or 1:400 ratio of SoySoap in water averaged about 10% higher in electrical conductivity than soil moistened with distilled water.

Test was done with an ECTestr 11+ with stainless steel probe.

We also got the same kinds of comments from Tom Harris when he theorized that we were getting nutrients into the plants through what he called the back door. There has to be a simple explanation why in leaves analysis we get more nutrients into leaves.

Trace element content of new winter wheat growth 11 days after foliar spray with trace elements, with and without WakeUP surfactant/transporter



Trace element content of new alfalfa growth 11 days after foliar spray with trace elements tank-mixed with surfactant/transporter