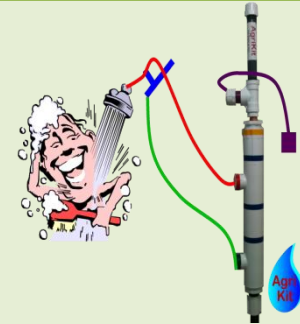
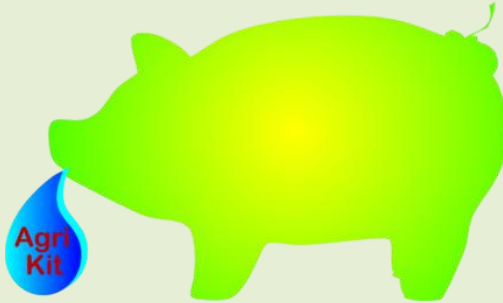




AgriKit-III Operation Instructions






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Main Components

Agri Kit Electrodes Basic	Housing Fixture	Support Leg
		
L: abt 22.5" (57.1 cm) Purple point: DC power	L: abt 14.25" (36.2 cm) Green point: in-feed Dia.= 3/4" Red point: out-feed Dia.= 3/4"	L: abt 14" (35.5 cm)

Main Accessories

AC x DC Adapter	Nipple (3/4" D x 2" L)	HDPE Adapter (3/4" x 5/8")
		
AC 110/240V x DC 3-12V Normal output: 12 V Disconnect power after use	Qty: 2 For in-feed and out-feed points, 3/4" pipe or hose	Qty: 4 For 5/8" or 1/2" hose

Clamp (Fastener)

Qty: 4 For clamping hose

Plastic pipe (3/4") and hose (1/2", 5/8", 3/4") are furnished by user and dealer.

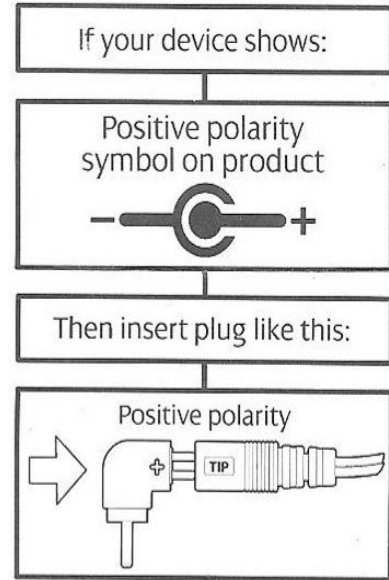


Instructions for AC x DC Adapter

Agri Kit electrode basic has a purple type point. It is for DC power connector. Its pin center (Dia. = 2.1 mm) is positive (+), and its outer ring is negative (-). The plug of AC x DC adapter usually has light blue mark, and plug face-down to have positive polarity as shown in figures.



Following above instructions, Agri Kit has positive electrode (+) at upper copper and negative electrode (-) at lower copper.



Agri Kit Assembled

- Assemble housing fixture and support leg
- Set up support leg
Ex: in 5-gal bucket, add two 1-gal plastic bottles filled with water
- Connect in-feed and out-feed hose
Ex: in-feed hose is 3/4", and out-feed is 5/8".
- Assemble Agri Kit electrode basic portion
- Connect DC plug when it is in use



Operation Principle

Agri Kit generates ionized particles which have various applications. In electrolysis operation, the lower copper negative electrode releases electrons, hydroxyl (OH), and hydrogen. Upper copper positive electrode releases copper ions. Water flows into housing fixture through green tape point, receives hydroxyl and hydrogen, receives copper ions when passing through upper copper, and discharges at red tape point. The unique vertical design of Agri Kit can avoid generated copper ions to be attached to negative electrode, can achieve high energy efficiency. If water has chloride, this arrangement can avoid the generation of chlorine.

Copper ion is one of few allowed pathogen-inhibitor in organic farming. Hydroxyl and other ionized particles such as nitrate (NO₃), carbonate (CO₃), can be used as plant's nutrients and other applications.

Remark: If distilled water is used to flow through Agri Kit, there will be no electrolysis reaction. For actual application, especially in agriculture, **adding small amount to fertilizer in water, or adding lime stone inside the support leg** in order to increase water EC (Electrical Conductivity).





EC/TDS/PPM Meter

EC (Electrical Conductivity) meter is a common instrument used in agriculture. Its measurement unit is $\mu\text{S}/\text{cm}$.

Conversion between EC and TDS (Total Dissolved Solids):

1 ppm of TDS = $2 \mu\text{S}/\text{cm}$ of EC = 1 mg/L

1 ms/cm = 1000 $\mu\text{S}/\text{cm}$ = 0.1 S/m

Ex: Assume a sample of water has EC value =10, after process, EC value changes to 104. This means water having 4 EC equivalent copper ions, $4 \mu\text{S}/\text{cm}$ = 2 ppm of copper ions. Additionally, water has extra 4 ionized particles. These could be hydroxyl (OH), nitrate (NO_3), or carbonate (CO_3). In common application, 2 ppm of copper ions can be fungicide.



Foliar Feed Application

- If in-feed water EC value is lower than 200, and a water tank is available:
Add lime stone (CaO) or fertilizer in water to increase EC value over 200, and then pump water through Agri Kit.
- If in-feed water EC value is lower than 200, and no water tank is available:
Add lime stone (CaO) into the support leg to increase water's EC value, and pump water through Agri Kit.
- If in-feed water EC value is over 200:
The user can decide whether adding lime stone in support leg or not.
Remark: EC value increasing 4 = 2 ppm Copper ions
- If 5-10 ppm of copper ions are needed, place Agri Kit electrode basic directly into a water tank:
Connect power until EC value increasing about 10-20, then perform foliar feed.
PLEASE NOTE: This operation usually is used for soil with fungi or plant has root rot problems.
It is suggested not to apply this often.
UK Soil Association suggests the amount of copper in soil is not over 6 kg per ha per year.

Functions:

Copper ions are for pathogen inhibitor and fungicide, and also are for nutritional mineral for plant.

Ionized particles are for nutrients, and also for reducing soil static charge, loosening bound up soil.

Loosening soil can release hidden nutrients and maintaining soil sustainability.

If water contains parasites, larvae, worms, algae and pathogens, most of them are exterminated through electrode and electrical field in housing fixture.

Agri Kit basically is to convert electrical energy through electrolysis into chemical energy. Portion is for plant's nutrients, stimulating plant's growth. Portion is for improving soil and its sustainability. Daily foliar feed can maintain soil and increase overall productivity.

Vegetable Washing

Water with 2 ppm (EC=4) copper ions is for washing vegetables and fruits, reducing pathogens and pesticides.

Hog (Pig) Farm Cleaning

Water with 1-2 ppm (EC=2-4) is for hog (pig) farm cleaning, and skin washing.