

# BIOHP® Application Rates

BIOHP AS INGREDIENT SOLUTION	
FERTILIZER / USE RATE	BIOHP INCORPORATION RATE
UAN @ 20 GPA or 200 L/ha	0.5%
UAN @ 10 GPA or 95 L/ha	1%
Starter @ 5 GPA or 50 L/ha	2%
Starter @ 3 GPA or 30 L/ha	3.5%

BIOHP STAND ALONE APPLICATIONS		
CROPS	METHOD OF APPLICATION	APPLICATION RATE (US / Metric)
<b>Berries and Small Fruits:</b> Blackberries, Blueberries, Currants, Elderberries, Gooseberries, Huckleberries, Loganberries, Raspberries, Strawberries, Grapes	Pre-plant Application	16 oz - 32 oz in 35 to 50 gals of water per acre / 1.2 L – 2.3 L in 325 to 475 L of water per ha to allow soil saturation
	Cuttings and Bare Root	32 oz - 64 oz in 50 gals of water/ 1 L – 2 L in 200 L of water for dipping
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha every two to four weeks through growing season
	Tank Spray Mix	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
<b>Bulb Vegetables:</b> Garlic, Leeks, Onions, Shallots, Ornamental Bulbs	Pre-plant Application	16 oz. - 32 oz. in 35 to 50 gals of water per acre / 1.2 L – 2.3 L in 325 to 475 L of water per ha to allow soil saturation
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Tank Spray Mix	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Greenhouse and Nursery	Pre-mix 24 oz to 32 oz in 5 to 8 gals of warm water and agitate well – inject @ 1:100 dilution per 20,000 sq. ft. / 750 mL to 1,000 mL in 20 L to 30 L of warm water and agitate well – inject @ 1:100 dilution per 2,000 sq. m and apply through drip or spray.
<b>Cereal Grains:</b> Buckwheat, Corn (grain, seed, sweet corn, silage, popcorn, high oil), Rye, Wheat, Sorghum, Millet, Oats, Alfalfa	Pre-plant Application	16 oz. - 32 oz. in 35 to 50 gals of water per acre / 1.2 L – 2.3 L in 325 to 475 L of water per ha to allow soil saturation
	In-Furrow	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Banded	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Tank Spray Mix	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
<b>Citrus Fruits:</b> Citrus Hybrids, Grapefruit, Kumquat, Limes, Oranges, Pummelos	Cuttings and Bare Root	32 oz - 64 oz in 50 gals of water / 1 L – 2 L in 200 L of water for dipping
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha monthly through drip or microjet
	Tank Spray Mix	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Greenhouse and Nursery	Pre-mix 24 oz to 32 oz in 5 to 8 gals of warm water and agitate well - inject @ 1:100 dilution per 20,000 sq. ft. / 750 mL to 1,000 mL in 20 L to 30 L of warm water and agitate well - inject @ 1:100 dilution per 2,000 sq. m. and apply through drip or spray monthly.
	Transplant Drench	Mix 24 oz to 32 oz in 50 gals of water / 750 mL to 1,000 mL in 200 L of water and soak root ball prior to backfilling hole. Utilize 1 quart (32 oz) of finished product to 5 gals of plant material / 1 L of finished product to 20 L plant material.
<b>Conifer Tree Seedlings, Conifer Trees:</b>	In-Furrow	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Tank Spray Mix	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Greenhouse and Nursery	Pre-mix 24 oz to 32 oz in 5 to 8 gals of warm water and agitate well - inject @ 1:100 dilution per 20,000 sq. ft. / 750 mL to 1,000 mL in 20 L to 30 L of warm water and agitate well - inject @ 1:100 dilution per 2,000 sq. m. and apply through drip or spray monthly.
	Transplant Drench	Mix 24 oz to 32 oz in 50 gals of water / 750 ml to 946 ml in 200 L of water and soak root ball prior to backfilling hole. Utilize 1 quart (32 oz) of finished product to 5 gals of plant material / 1 L of finished product to 20 L plant material.

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<b>Cucurbit Vegetables:</b> Cucumbers, Melons, Musk Melons, Gourds, Pumpkins, Squash	Pre-plant Application	For application when preparing seed bed – Inject 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha through drip or with pre-plant herbicide
	At-plant Application	Apply 32 oz of product per acre / 2.3 L per ha with transplant water
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha through drip
	Tank Spray Mix	Apply 16 oz – 32 oz of product per acre foliarly / 1.2 L – 2.3 L of product per ha
	In-Furrow	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Banded	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
<b>Fruiting Vegetables:</b> Eggplant, Sweet and Hot Peppers, Tomatillos, Tomatoes	Pre-plant Application	16 oz. - 32 oz. in 35 to 50 gals of water per acre / 1.2 L – 2.3 L in 325 to 475 L of water per ha to allow soil saturation
	At-plant Application	Apply 32 oz of product per acre with transplant water
	Cuttings and Bare Root	32 oz - 64 oz in 50 gals of water / 1 L – 2 L in 200 L of water for dipping
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Tank Spray Mix	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Greenhouse and Nursery	Pre-mix 24 oz to 32 oz in 5 to 8 gals of warm water and agitate well - inject @ 1:100 dilution per 20,000 sq. ft. / 750 mL to 1,000 mL in 20 L to 30 L of warm water and agitate well - inject @ 1:100 dilution per 2,000 sq. m. and apply through drip or spray monthly.
<b>Herbs, Spices, and Mints:</b>	Cuttings and Bare Root	32 oz - 64 oz in 50 gals of water / 1 L – 2 L in 200 L of water for dipping
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Tank Spray Mix	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Greenhouse and Nursery	Pre-mix 24 oz to 32 oz in 5 to 8 gals of warm water and agitate well - inject @ 1:100 dilution per 20,000 sq. ft. / 750 mL to 1,000 mL in 20 L to 30 L of warm water and agitate well - inject @ 1:100 dilution per 2,000 sq. m. and apply through drip or spray monthly.
<b>Hydroponic Crops:</b>	Cuttings and Bare Root	32 oz - 64 oz in 50 gals of water / 1 L – 2 L in 200 L of water for dipping
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Substrate Mix	Mix 16 oz – 32 oz per cubic yard / 750 mL to 1,500 mL per cubic meter of substrate
<b>Leafy and Brassica (Cole) Leafy Vegetables:</b> Arugula, Celery, Chervil, Endive, Fennel, Lettuce (head and leaf), Parsley, Radicchio, Rhubarb, Spinach, Swiss Chard, Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Collards, Kale, Kohlrabi, Mustard Greens  <b>Asparagus</b>	Pre-plant Application	16 oz. - 32 oz. in 35 to 50 gals of water per acre / 1.2 L – 2.3 L in 325 to 475 L of water per ha to allow soil saturation
	In-Furrow	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Banded	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Tank Spray Mix	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Greenhouse and Nursery	Pre-mix 24 oz to 32 oz in 5 to 8 gals of warm water and agitate well - inject @ 1:100 dilution per 20,000 sq. ft. / 750 mL to 1,000 mL in 20 L to 30 L of warm water and agitate well - inject @ 1:100 dilution per 2,000 sq. m. and apply through drip or spray monthly.
<b>Legume Vegetables (Succulent or Dried):</b> Beans (soybean, snap, dry), Lentils, Peas	Pre-plant Application	16 oz. - 32 oz. in 35 to 50 gals of water per acre / 1.2 L – 2.3 L in 325 to 475 L of water per ha to allow soil saturation
	In-Furrow	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Banded	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Tank Spray Mix	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
<b>Oilseed Crops:</b> Cotton, Canola, Safflower, Sunflower	Pre-plant Application	16 oz. - 32 oz. in 35 to 50 gals of water per acre / 1.2 L – 2.3 L in 325 to 475 L of water per ha to allow soil saturation
	In-Furrow	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Banded	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Tank Spray Mix	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha

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<b>Peanuts:</b>	Pre-plant Application	16 oz. - 32 oz. in 35 to 50 gals of water per acre / 1.2 L – 2.3 L in 325 to 475 L of water per ha to allow soil saturation
	In-Furrow	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha with rhizobia inoculant
	Banded	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Tank Spray Mix	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
<b>Pome Fruits:</b> Pears, Quince, Apples	Cuttings and Bare Root	32 oz - 64 oz in 50 gals of water / 1 L – 2 L in 200 L of water for dipping
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Tank Spray Mix	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Greenhouse and Nursery	Pre-mix 24 oz to 32 oz in 5 to 8 gals of warm water and agitate well - inject @ 1:100 dilution per 20,000 sq. ft. / 750 mL to 1,000 mL in 20 L to 30 L of warm water and agitate well - inject @ 1:100 dilution per 2,000 sq. m. and apply through drip or spray monthly.
	Transplant Drench	Mix 24 oz to 32 oz in 50 gals of water / 750 mL to 1,000 mL in 200 L of water and soak root ball prior to backfilling hole. Utilize 1 quart (32 oz) of finished product to 5 gals of plant material / 1 L of finished product to 20 L plant material.
<b>Root and Tuber Vegetables:</b> Beets, Sugar Beets, Carrots, Celeriac, Chicory, Horseradish, Parsnip, Radish, Salsify, Turnips Potatoes, Sweet Potatoes, Yams, Jerusalem Artichoke, Cassava, Ginger	Pre-plant Application	16 oz. - 32 oz. in 35 to 50 gals of water per acre / 1.2 L – 2.3 L in 325 to 475 L of water per ha to allow soil saturation
	In-Furrow	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Banded	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Tank Spray Mix	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
<b>Shadehouse and Outdoor Nursery Crops:</b> Deciduous trees (Maple, Oak, ect.), Ornamentals, Grapes, Citrus, Pine	Cuttings and Bare Root	32 oz - 64 oz in 50 gals of water / 1 L – 2 L in 200 L of water for dipping
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Greenhouse and Nursery	Pre-mix 24 oz to 32 oz in 5 to 8 gals of warm water and agitate well - inject @ 1:100 dilution per 20,000 sq. ft. / 750 mL to 1,000 mL in 20 L to 30 L of warm water and agitate well - inject @ 1:100 dilution per 2,000 sq. m. and apply through drip or spray monthly.
	Transplant Drench	Mix 24 oz to 32 oz in 50 gals of water / 750 mL to 1,000 mL in 200 L of water and soak root ball prior to backfilling hole. Utilize 1 quart (32 oz) of finished product to 5 gals of plant material / 1 L of finished product to 20 L plant material.
<b>Stone Fruits:</b> Apricots, Cherries, Nectarines, Peaches, Plums, Prunes	Cuttings and Bare Root	32 oz - 64 oz in 50 gals of water / 1 L – 2 L in 200 L of water for dipping
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Tank Spray Mix	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Greenhouse and Nursery	Pre-mix 24 oz to 32 oz in 5 to 8 gals of warm water and agitate well - inject @ 1:100 dilution per 20,000 sq. ft. / 750 mL to 1,000 mL in 20 L to 30 L of warm water and agitate well - inject @ 1:100 dilution per 2,000 sq. m. and apply through drip or spray monthly.
	Transplant Drench	Mix 24 oz to 32 oz in 50 gals of water / 750 mL to 1,000 mL in 200 L of water and soak root ball prior to backfilling hole. Utilize 1 quart (32 oz) of finished product to 5 gals of plant material / 1 L of finished product to 20 L plant material.
<b>Tree Nuts:</b> Almonds, Beech Nuts, Brazil Nuts, Butternuts, Cashews, Chestnuts, Filberts, Hickory Nuts, Macadamia Nuts, Pecans, Pistachios, Walnuts	Cuttings and Bare Root	32 oz - 64 oz in 50 gals of water / 1 L – 2 L in 200 L of water for dipping
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Tank Spray Mix	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Greenhouse and Nursery	Pre-mix 24 oz to 32 oz in 5 to 8 gals of warm water and agitate well - inject @ 1:100 dilution per 20,000 sq. ft. / 750 mL to 1,000 mL in 20 L to 30 L of warm water and agitate well - inject @ 1:100 dilution per 2,000 sq. m. and apply through drip or spray monthly.
	Transplant Drench	Mix 24 oz to 32 oz in 50 gals of water / 750 mL to 1,000 mL in 200 L of water and soak root ball prior to backfilling hole. Utilize 1 quart (32 oz) of finished product to 5 gals of plant material / 1 L of finished product to 20 L plant material.

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<b>Tropical Fruits:</b> Avocado, Mango, Papaya, Pineapple, Bananas, Plantains	Cuttings and Bare Root	32 oz - 64 oz in 50 gals of water / 1 L – 2 L in 200 L of water for dipping
	Fertigation	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Tank Spray Mix	Apply 16 oz – 32 oz of product per acre / 1.2 L – 2.3 L of product per ha
	Greenhouse and Nursery	Pre-mix 24 oz to 32 oz in 5 to 8 gals of warm water and agitate well - inject @ 1:100 dilution per 20,000 sq. ft. / 750 mL to 1,000 mL in 20 L to 30 L of warm water and agitate well - inject @ 1:100 dilution per 2,000 sq. m. and apply through drip or spray monthly.
	Transplant Drench	Mix 24 oz to 32 oz in 50 gals of water / 750 mL to 1,000 mL in 200 L of water and soak root ball prior to backfilling hole. Utilize 1 quart (32 oz) of finished product to 5 gals of plant material / 1 L of finished product to 20 L plant material.

<b>Amendment Application:</b> Improves poor soil conditions, preparing the soil for plant development; Apply where soils have traditional pH issues, where soils have low CEC, where soils lack organic matter; where soils have lack of percolation, where soils have lack of water holding capacity.	<b>Method of Application:</b> <ul style="list-style-type: none"> <li>▪ Tank Mix – Mechanically Applied</li> <li>▪ Fertigation</li> <li>▪ Substrate Mix</li> </ul>
<b>At Planting Application:</b> Populates the beneficial microbes in the rhizosphere where the root is first exposed to its growth environment. The environment where the critical plant – microbe symbiotic relationship is established; triggering germination; promotes faster and stronger rooting.	<b>Method of Application:</b> <ul style="list-style-type: none"> <li>▪ Cutting and Bare Root</li> <li>▪ In Furrow</li> <li>▪ Banded</li> <li>▪ Transplant Drench</li> <li>▪ Greenhouse and Nursery Application</li> </ul>
<b>Foundation Application:</b> Apply at critical growth stages, supporting microbial growth patterns and populations allowing the beneficial microbial functions to continue to colonize the roots, improving root architecture, and rejuvenating soil structure.	<b>Method of Application:</b> <ul style="list-style-type: none"> <li>▪ Tank Mix – Mechanically Applied</li> <li>▪ Fertigation</li> <li>▪ Greenhouse and Nursery Application</li> </ul>
<b>Maintenance Applications:</b> A continuation of supporting early stage applications; improve soil conditions, mineralize and hold nutrients, reinforcing the plant - microbial symbiotic relationship all the way through harvest.	<b>Method of Application:</b> <ul style="list-style-type: none"> <li>▪ Tank Mix – Mechanically Applied</li> <li>▪ Fertigation</li> <li>▪ Greenhouse and Nursery Application</li> </ul>