



Application Guidance for Pacific Gro Hydrolysate Products

Pacific Gro is an organic source of a great range of nutrients that improves soil health and builds humus. Fish oil is a preferred food source for soil microorganisms, particularly beneficial fungi. Farmers notice a proliferation of soil life and restoration of a healthy fungal-bacterial balance. It's often applied with microbial products. It's also used as a foliar with other inputs – the fish oil acts as a sticker, there's plant-available calcium and the amino acids chelate nutrients.

This is a highly bio-active product which works well in fertigation, sprayed onto the soil and as a starter or pop-up, and also by foliar spray. Stabilized with acid at pH 3.5, and double-screened at 165 mesh (90 microns). Jar test mixtures with high pH irrigation water and with other products. Do not mix with phosphorus fertilizer. Rinse out tanks that had 10-34 or other high phos. products.

Produced from Ocean-caught salmon, shrimp and crab that are ground and enzymatically digested without removal of any of the natural oils or proteins. It is naturally high in fish oil. Most of the nitrogen is in amino acid form. The raw material is collected from seafood processors. The naturally occurring enzymes and vortex action in our breaking tanks digest the shells, fish bones and fish scrap into a fine colloidal suspension.

Recommended usage rates vary greatly depending on the crop, farming style and many factors:

- Soil condition: e.g. organic matter content, health of the soil microbiology, soil texture and cation balance, rooting depth
- Fertility program: e.g. What other NPK is used? Is 'fish' the primary source of nutrients or a supplement? Is there a foliar program?

Post-harvest application can be very effective, in both perennial and annual crops – to feed the soil biology, digest crop residue, and help the plant uptake nutrients for next season.

Please consult with an agronomist, crop consultant, experienced farmer or other professional for specific guidance. The best general advice we can offer is to get a good soil analysis, address issues of unbalanced nutrients, and use Pacific Gro in a program that will increase organic matter content and yield higher brix produce.

Both products contain digested crab shell and plant-available calcium.

Pacific Gro Oceanic is a general-purpose fertilizer useful in any situation.

Pacific Gro Sea Phos is a similar product for use when extra phosphorous is advised – particularly at planting of annuals (for root development) and mid-season to provide reproductive energy for flowering and fruiting. Its use replaces some of the Oceanic in the recommended seasonal use.

DISCLAIMER Please consult with an agronomist, crop consultant or other professional for specific guidance. Pacific Gro Oceanic Hydrolysate is an approved input for organic farming and a natural product that promotes healthy soil biology. It is intended for use in combination with other fertility inputs. There are many variables to consider in farming; the farmer or customer assumes responsibility for use of these products in his/her conditions and practices, which are not controlled by and cannot be foreseen by Tidal Grow AgriScience. The buyer accepts and uses these products, recognizing that Tidal Grow AgriScience does not accept responsibility or any liability for the use of its products, whether or not used according to application guidance.



Application Guidance for Row Crops and Annual Crops

Mix product well before use, best done by circulation pump. Separation of oil and water does occur, but the product returns to a colloidal suspension upon mixing.

Use up all product that has been diluted. When pH exceeds 4 the biology gets active and will cause diluted product to foam and expand. Fungal mycelia may grow in diluted product.

This is a bio-active product. Flush drip lines well after use. Thoroughly clean and rinse out any tanks before filling.

Protect drip lines from clogging by jar testing mixtures with other inputs and high pH irrigation water, and use a screen downstream injection. Do not mix with synthetic forms of phosphorus.

Ground Application Sprayers To avoid screen clogging: Circulate product, dilute at least 10:1 in water, change main pump screen to 40 – 50 mesh, remove screens from valves and tips, use 15 – 20 gal/acre tips, reduce pump pressure to 40 – 50 psi.

Dilution Rates by Type of Application	Dilution (parts water per part of product)
Minimum dilution, if no plant contact (Starters, pop-up)	4:1
Soil use, pre-planting and near established trees and shrubs	10:1
General use in season with foliar contact (1/2 cup per gal)	30:1
Drip fertigation (1/2 to 2 oz./gal)	50:1 or more dilute
Foliar spray (1/2 to 2 oz./gal)	50:1 or more dilute

Pacific Gro Oceanic Hydrolysate and Sea Phos				
These quantities refer to the amount of product prior to dilution				
Use <u>Pacific Gro Oceanic Hydrolysate</u> to establish healthy soil biology and also to chelate and provide nutrients for plant uptake. Apply both to soil and to foliage with foliar nutrient applications. Use <u>Pacific Gro Sea Phos</u> to provide phosphorous with new plantings (for root development), and at flowering to provide energy for grain set. Consult with a professional agronomist or consultant for specific guidance for your crop and particular conditions.				
	Professional Program		Product	Simpler Program
Corn Total use per year: 3 – 10 gal/acre (can cut N use 20% - 40% at 8+ gal/acre)	Pre-plant Starter/Pop-up Foliar, 1 or 2 times Side dress	3 – 10 gal/acre 2 gal/acre 1 gal/acre (at V4 – V8) 2 – 10 gal/acre	Sea Phos at planting, Oceanic mid-season	3 – 5 gal/acre Sea Phos at planting
Soybeans Total use per year: 3 – 10 gal/acre	Pre-plant Starter/Pop-up Foliar	3 – 8 gal/acre 2 gal/acre 1 gal/acre	Sea Phos at planting, either product as foliar	3 – 5 gal/acre Sea Phos at planting
Wheat, irrigated Total use per year: 10 – 20 gal/acre (can cut N use 20 - 40% at this rate)	Pre-plant Starter/Pop-up Dormancy break Stem elongation Boot stage	2 – 8 gal/acre 2 gal/acre 4 – 6 gal/acre 4 – 6 gal/acre 2 – 4 gal/acre	Sea Phos at planting, Oceanic mid-season	3 gal/acre either product at planting
Dryland Wheat, Legumes Total use per year: 3 – 5 gallons per acre	In furrow Foliar, 1 or 2 times	2 - 3 gal/acre 1 gal/acre	Oceanic, unless there is no other source of phosphorous	3 gal/acre either product at planting
Alfalfa Total use per year: 5 – 15 gallons per acre	At green-up After each cutting	5 gal/acre 3 – 5 gal/acre		Sea Phos at green-up, Oceanic at other times
Cover Crops and Pasture Total use per year: 3 – 10 gal	At green-up Mid-season	5 gal/acre 3 – 5 gal/acre		Either product

Wash off with water any contact with skin. Please refer to general guidance and disclaimer of liability on pg 1. - 2 -



Application Guidance for Orchards, Berries and Vineyards

Mix product well before use, best done by circulation pump. Some settling of solids and separation of oil and water does occur. The product returns to a colloidal suspension upon mixing.

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Protect drip lines from clogging by jar testing mixtures with other inputs and high pH irrigation water, and use a screen downstream of injection. Do not mix with synthetic forms of phosphorus.

Ground Application Sprayers To avoid screen clogging: Circulate product, dilute at least 10:1 in water, change main pump screen to 40 – 50 mesh, remove screens from valves and tips, use 15 – 20 gal/acre tips, reduce pump pressure to 40 – 50 psi.

Dilution Rates by Type of Application	Dilution (parts water per part of product)
Minimum dilution, if no plant contact	4:1
Soil drench, pre-planting and near established trees and shrubs	10:1
General use in season with foliar contact (1/2 cup per gal)	30:1
Drip fertigation (1/2 to 2 oz./gal)	50:1 or more dilute
Foliar spray (1/2 to 2 oz./gal)	50:1 or more dilute

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Use <u>Pacific Gro Oceanic Hydrolysate</u> to establish healthy soil biology, to chelate and provide nutrients for plant uptake, and also post-harvest to uptake nutrients for the next season and feed soil biology during winter.				
Use <u>Pacific Gro Sea Phos</u> to provide phosphorous with new plantings (for root development), and during or after harvest to provide energy for next year's fruit set (and avoid weak alternate years).				
Both products can be applied both to soil and to foliage.				
Consult with a professional agronomist or consultant for specific guidance for your crop and particular conditions.				
	Professional Program		Product	Simpler Program
Tree Fruit and Nut Orchards Total use per year: 15 – 30 gallons per acre	Early season soil drench Weekly drip Weekly foliar Post-harvest foliar Post-harvest soil drench	5 – 10 gal/acre 1 – 3 gal/acre per week 2 – 4 quarts/acre per week 2 – 4 quarts/acre 5 – 10 gal/acre	Oceanic until bloom, then Sea Phos. Oceanic after harvest	4 to 8 gal/acre, 4 times per year, including once post-harvest. (0.5 – 1 cup per tree, 3 times per season)
Blueberries and cane berries Total use per year: 15 – 30 gallons per acre	Early season soil drench Weekly Drip Fruit Set Foliar Fruit fill foliar Post-harvest foliar Post-harvest soil drench	3 – 5 gal/acre 1 – 3 gal/acre per wk. 2 – 3 quarts/acre 1 quart/acre 2 quarts/acre, 1 or 2 times 3 – 5 gal/acre	Oceanic until bloom, then Sea Phos. Oceanic after harvest	3 to 7 gal/acre, 5 times per year, including once post-harvest. (1 – 2.5 cups per 1000 sq. feet, 4 times per year)
Strawberries Total use per year: 20 – 30 gallons per acre	Pre-plant soil drench Drip line feeding	5 – 10 gal/acre 5 to 8 gal/acre, 3 times	Sea Phos pre-plant, then Oceanic 2 times, then Sea Phos	Spoon feed 3 to 5 gal/acre monthly
Vineyards Total use per year: 10 – 20 gallons per acre	Mid-April soil application Early July " Late August " Post-Harvest " Foliar	5 gal/acre 2 – 3 gal/acre 2 – 3 gal/acre 5 – 10 gal/acre 2 quarts/acre with all foliars	Oceanic for all applications unless P is deficient	5 gal/acre 3 times, in Spring, Summer and post-harvest



Application Guidance for Vegetable Crops

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Consult with a professional agronomist or consultant for specific guidance for your crop and particular conditions.				
	Professional Program		Product	Simpler Program
Potatoes Total use per year: 15 – 30 gallons per acre	In furrow Bi-weekly overhead irrigation	5 – 8 gal/acre in furrow 2 – 5 gal/acre every 2 weeks	Sea Phos at planting, then Oceanic	10 gal/acre in furrow
Onions, Carrots Total use per year: 15 – 30 gallons per acre	Pre-plant Overhead irrigation or Drip	5 – 8 gal/acre in furrow 3 – 5 gal/acre, 2 times	Sea Phos at planting, then Oceanic	10 gal/acre at planting
Tomatoes 8 – 12 gallons per acre	Pre-plant and Early season Bi-weekly Foliar	4 – 5 gal/acre, two times 2 quarts/acre every 2 weeks	Sea Phos at planting, then Oceanic. Either product as foliar	3 to 5 gal/acre, 3 times per year (1 – 2 cups per 1000 sq. feet, 3 times/year)
Various Vegetables Total use per year: 5 – 12 gallons per acre	Pre-plant Transplanting Weekly drip Bi-weekly foliar	5 – 8 gal/acre 1 gal/acre 2 – 6 quarts/acre per week 1 – 2 quarts/acre every 2 wks	Sea Phos at planting, then Oceanic. Either product as foliar	3 to 5 gal/acre, 3 times per year (1 – 2 cups per 1000 sq. feet, 3 times/year)