

SEACROP16™

Accepted in Organic Agriculture

EPA Registered

The Plant Growth Regulator For Increased Quality and Marketable Yields

Introduction

SeaCrop16 Liquid Plant Growth Regulator is a concentrated extract made from the seaplant *Ascophyllum nodosum*, which is harvested from coastal Maine waters. Agricultural crops around the world have benefited from using kelp extracts for decades. Extensive research with these extracts has determined that the growth hormone, cytokinin, coupled with the seaweed's diverse micronutrients, enhance crop growth, development, and yield. SeaCrop16 is formulated for commercial agriculture to provide the highest concentration (400 ppm) of natural cytokinin found on the market today.

Benefits of SeaCrop16:

- Improves seed germination and increases root development.
- Increases bloom set and size of flowers and fruit.
- Increases and stabilizes chlorophyll in plants, which results in darker green leaves and increased sugar content in plants.
- Relieves stress in plants caused by extreme weather conditions.
- Increased plant vigor, and thus a greater resistance to disease, insect attack, drought, and frost.
- Increases microorganisms in the soil that can fix nitrogen from the air.
- Increases mineral uptake from the soil and into the plant.
- Increases the storage life of fruits and vegetables by retarding the loss of protein, chlorophyll, and RNA.
- Retards the aging process in plants (senescence) thereby lengthening the production season.
- Many of the trace minerals contained in seaweed have important regulatory functions when applied to land plants, and in the animals and humans that consume the plants.

Available Sizes: 2.5-gallon jugs

General Guidance How to Use

- To maximize the benefits of SeaCrop16, use it as part of a well-balanced plant nutritional program.

- SeaCrop16 is always mixed with water (preferably with an approximate pH of 6.0) to the appropriate dilution and applied to foliage or soil. The plant absorbs the extract immediately and is responding by the second day.
- Always shake or mix SeaCrop16 well before diluting. Only make up what you can use at one time.
- Foliar application is the most efficient and effective method. Kelp extracts are 8 to 20 times more effective when applied to the leaves than when broadcast on the soil. Spray as a fine mist until it drips off the plants' surfaces.
- SeaCrop16 can be used with a variety of sprayers -- plant misters, pump-up, backpack, hose-end, or tractor sprayers. The dilution rates provided here are based on areal measurements. Depending on the type of sprayer you have, simply dilute SeaCrop16 with the appropriate amount of water for your sprayer to cover a specific area. SeaCrop16 also works well with irrigation systems.

When to Use

- Apply SeaCrop16 to improve specific growth stages. For example: To promote additional buds, apply SeaCrop16 when plants are beginning to bud To extend the shelf life of fruits and vegetables, spray 10 days before harvesting To lengthen the life of cut flowers, spray SeaCrop16 a day or two before cutting.
- In lieu of trying to catch or target specific growth stages, apply SeaCrop16 every 2 to 4 weeks.
- The SeaCrop16 solution should be sprayed in the morning or late afternoon when the leaves' stoma are open. Avoid applying between noon and mid-afternoon when the sun is most intense and the stoma are closed. Also avoid spraying SeaCrop16 before it rains or while it is raining.

How to Store

- SeaCrop16 has a shelf life of four years when kept from extreme temperatures. Avoid freezing and direct sunlight.

General Dilution Rates and Application Frequencies

Using a Wetting Agent:

- SeaCrop16 should be used with a mild bio-degradable detergent or a non-ionic surfactant. This will help prevent beading on the foliage and allow more efficient uptake by the seeds, plants, and soil. Avoid harsh detergents, or spreader stickers for pesticides.
- Add $\frac{1}{4}$ to $\frac{1}{2}$ teaspoon of detergent per 1 gallon of diluted SeaCrop16. Use manufacturer's instructions for a surfactant.

Seed and Seed Bed Treatment:

Treating seeds or seed pieces with SeaCrop16 prior to planting will improve seed germination, root growth, and early seedling vigor.

Seeds or seed pieces can be treated in one of the following ways:

- Lightly mist the seeds or seed pieces with 1 teaspoon SeaCrop16 diluted in 1 gallon of water before planting, or
- Soak the seeds, seed pieces, or bulbs for 5 to 10 seconds with 1 teaspoon SeaCrop16 diluted in 1 gallon of water, or
- Use 2 pints of SeaCrop16 per acre and apply to the seed bed at time of seeding or up to 20 days thereafter.

Rooting Solution and Transplanting:

SeaCrop16 also can be used as a rooting solution. Place cuttings in a solution of SeaCrop16 and water until roots develop, then plant. When planting, water in with SeaCrop16 solution. Dilution Rate: 1 teaspoon SeaCrop16 to 1 gallon water.

Stress Relief:

Use 1 pint of SeaCrop16 per acre anytime a crop is prematurely dying down (loss of color) due to stress caused by one or more of the following conditions: weather (frost, drought, excessive moisture), insect infestation, fungus attack, or herbicide burn.

Vegetables, Fruits, Berries (see below for crop specific information):

- Mix 1 pint SeaCrop16 with enough water to cover 1 acre. Trees and Shrubs:
- Mix 1 pint of SeaCrop16 with enough water to cover 1 acre. Apply in early spring, and at bud formation, terminal calyx, and in early to mid-fall.

Ornamental Plants:

- Mix 1 pint SeaCrop16 with enough water to cover 1 acre. Spray initially at prebloom stage and thereafter once a month.

Lawn and Turf:

- Mix 1 ounce of SeaCrop16 with enough water to cover 1000 square feet. Apply at initial stages of growth and thereafter once a month.

Feed, Hay and Forage Crops (grains, grasses & legumes):

SeaCrop16 increases nutrient uptake, protein content, and overall quality of the crop.

- Feed: Apply 1 pint to 1 quart per acre during 4-6 leaf stage, repeat in 10 to 14 days.

- Hay: Apply 1 pint to 1 quart per acre to young re-growth 7-14 days after mowing.
- Forage: Apply 1 pint to 1 quart per acre to pastures before animals are set out, and again at monthly intervals, or sooner if stress symptoms appear.
- For intensively-managed pasture, apply 1 pint to 1 quart per acre to each section shortly after animals are moved out. If rotation is less than 2 weeks, apply every other time that animals are moved out.

Crop Specific Instructions

APPLES 1 pint/acre each application

1ST application: At full pink

3rd application: 3 weeks after 2nd spraying

2nd application: At calyx (petal fall)

4th application: 4 weeks after 3rd spraying

CARROTS 1 pint/acre each application

1st application: At tuber initiation

2nd application: 2 to 3 weeks after 1st spraying

CELERY

1st application: Use 2 pints/acre applied to the seed bed at time of seeding or up to 20 days thereafter. 2nd application: Use 2 pints/acre at the time seedlings are transplanted. 3rd application: Use 1 pint/acre 2 to 3 weeks after transplanting.

CORN 1 pint/acre each application

1st application: At the 1 to 1 ½ foot stage

2nd application: At tassel time

COTTON

Pinhead square: Apply 2 to 4 ounces/acre weekly for 4 weeks beginning at pinhead square. First bloom: Apply ½ pint/acre at first white flower and again two weeks later. Stripper cotton: Apply single application of ½ pint/acre during first two weeks of bloom.

GRAPES

1 pint/acre each application

1st application: Between leaf out and prebloom

2nd application: At petal fall

3rd application: After harvest

ORANGES 1 pint/acre each application

1st application: At prebloom

3rd application: 3 weeks after 2nd spraying

2nd application: At calyx (petal fall)

4th application: 4 weeks after 3rd spraying

PEACHES 1 pint/acre each application

1st application: At prebloom

3rd application: 3 weeks after 2nd spraying

2nd application: At calyx (petal fall)

4th application: 4 weeks after 3rd spraying

PEANUTS 1 pint/acre each application

1st application: At pegging

2nd application: 2 to 3 weeks after 1st application

PEPPERS 1 pint/acre each application

1st application: Just prior to first bloom

3rd application: 10 days after 2nd spraying

2nd application: 10 days after 1st spraying

4th application: 10 days after 3rd spraying

POTATOES 1 pint/acre each application

1st application: At tuber set

2nd application: At full blossom

Russet Burbanks which do not show full blossom should be sprayed 2 to 3 weeks after 1st spraying.

SOYBEANS 1 pint/acre each application

Application: At first bud formation

STRAWBERRIES

1st application: Use 2 pints/acre as a transplant solution

3rd application: Use 1 pint/acre at petal fall

2nd application: Use 1 pint/acre at prebloom

4th application: Use 1 pint/acre after harvest

SUGAR BEETS 1 pint/acre each application

1st application: At tuber initiation

2nd application: 2 to 3 weeks after 1st spraying

TOMATOES

1st application: Use 2 pints/acre applied to the seedbed at time of seeding or up to 20 days thereafter. 2nd application: Use 2 pints/acre at the time seedlings are transplanted. 3rd application: Use 1 pint/acre 2 to 3 weeks after 1st bloom.

WHEAT 1 pint/acre each application

Application: 1 to 2 weeks before boot stage

Specifications for SeaCrop16™ Liquid Plant Growth Regulator 400ppm Cytokinin Guarantee

Active Ingredient

Cytokinin, as kinetin, based on biological activity - 400ppm typical

Chemical And Physical Properties

Physical State:	Liquid
Color:	Brown/Black
Specific Gravity:	1.14 @ 20 Celsius
Solubility:	Highly soluble in water
pH:	4.3 - 5.0
Nitrogen:	0.2% - 0.4%
Phosphorus (as P2O5):	4.0% - 5.0%
Potash (K2O):	4.0% - 5.0%
Organic Matter:	10% - 12%
Solids:	22% - 24%
Net Weight:	9.5 pounds/gallon

Use Precautions

- Possible incompatibilities: None experienced with herbicides, fungicides, insecticides, and nutritional sprays.
- Safety precautions for handling and application: Caution

Physiological And Biochemical Behavior

Mechanism of Action: Increase cell expansion and division

Toxicological Properties

Non Toxic - Natural Extract

Synthesis And Analytical Methods

Commercial and laboratory methods of synthesis: Extract of marine algae

Bioassay Methods

Bioassay used: Radish leaf