

SEACROP16™

EPA Registered and OMRI Listed

The Plant Growth Regulator For Enhanced 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. SeaCrop 16 meets National Organic Program standards and may be used in certified organic production.

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: 5-gallon pail
Two 2.5-gallon jugs
55-gallon drum
275-gallon tote

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.

Small Usage: 1 ounce (2 tablespoons) SeaCrop16 per gallon of water.

Vegetables, Fruits, Berries (see next page 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

2nd application: At calyx (petal fall)

3rd application: 3 weeks after 2nd spraying

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

2nd application: At calyx (petal fall)

3rd application: 3 weeks after 2nd spraying

4th application: 4 weeks after 3rd spraying

PEACHES-1 pint/acre each application

1st application: At prebloom

2nd application: At calyx (petal fall)

3rd application: 3 weeks after 2nd spraying

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

2nd application: 10 days after 1st spraying

3rd application: 10 days after 2nd 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

2nd application: Use 1 pint/acre at prebloom

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

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 at 20° Celsius
Solubility:	Highly soluble in water
pH:	4.3 - 5.0
Nitrogen:	0.2 - 0.4%
Phosphorus (as P ₂ O ₅):	4.0 - 5.0%
Potash (K ₂ O):	4.0 - 5.0%
Loss on Ignition:	37 - 48%
Solids:	22 - 24%
Net Weight:	9.3 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

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION**

PERSONAL PROTECTIVE EQUIPMENT

Applications and other handics must wear. Long-sleeved shirt and long pants, waterproof gloves and shoes plus socks.
Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENVIRONMENTAL HAZARDS

For terrestrial uses, do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water by disposal of equipment washwaters.

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling.
Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protective hazards may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. The Standard also sets minimum requirements for training, communications, and record-keeping. For more complete safety instructions and restrictions, consult the pesticide label. The label also contains specific instructions and restrictions on use.
The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.
Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.
PPE required for entry into or treated areas that is permitted: under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, waterproof gloves, and shoes plus socks.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.
STORAGE: Store in a cool place and out of direct sunlight.
PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.
CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or purchase and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

WARRANTY STATEMENT

Our recommendations for use of this product are based upon tests believed to be reliable. The use of this product being beyond the control of the manufacturer, no guarantee, express or implied, is made as to the effects of such or the results to be obtained if not used in accordance with directions of established safe practice. The buyer must assume all responsibility, including injury or damage, resulting from its misuse as such, or in combination with other materials.



**The plant growth regulator
for increased quality
and marketable yields.**

Active ingredient:

Cytokinin, as kinetin, based on biological activity0.04%
Inert Ingredients99.96%
TOTAL 100.00%

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

See additional precautionary statements on left panel.

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EPA REG. NO. 45246-1-71364

Distributed by: North American Kelp
41 Cross St., Waldoboro, ME 04572

NET CONTENTS ___ GALLONS CONTROL NO. _____

GENERAL USE INSTRUCTIONS

For best results, Sea Crop 16 should be applied before noon on a clear day. For transplants, (nurseries) cleaned by any means, Sea Crop 16 should be applied to the soil surface. For field crops, Sea Crop 16 should be applied to the soil surface. Any seed or crop put into a Sea Crop 16 drum should be cleaned with disinfectant (bleach and water, etc.) before using. The whole drum is to be used at one time. Mix Sea Crop 16 with enough water to get thorough coverage of plant surfaces. Sea Crop 16 is compatible with most other spray materials.

CROP USAGE—ALL CROPS LISTED FOR STRESS RELIEF

Use 1 pint Sea Crop 16 per acre on a preliminary spray (one leaf or cotyledon) or on a spray (one leaf or cotyledon) on any of the following conditions: weather (frost, drought, excessive moisture), insect infestation, lightning, hail, and/or herbicide burn.

CROP USAGE—ALL CROPS LISTED FOR TRANSPLEANTING AND SEED BED TREATMENT

Use 2 pints Sea Crop 16 per acre or 1 pint Sea Crop 16 to 1000 parts water (approximately 1 tablespoon Sea Crop 16 to 4 gallons water) as a root dip and watering solution when transplanting. Use 2 pints Sea Crop 16 per acre applied to the seed bed at time of seeding or sowing.

CROP USAGE—APPLE—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.
CROP USAGE—CABBAGES—1 pint/acre each application.
2nd application: 2 to 3 weeks after 1st spraying.
1st application: At tuber initiation.

CROP USAGE—CELERY
1st application: Use 2 pints Sea Crop 16 per acre applied to the soil surface at time of seeding or up to 20 days thereafter.
2nd application: Use 2 pints Sea Crop 16 per acre applied to the soil surface at time of transplanting, see Transplanting instructions above.
3rd application: Use 1 pint Sea Crop 16 per acre 2 to 3 weeks after transplanting.

CROP USAGE—CORN—1 pint/acre each application.
2nd application: At the 1 to 1½ foot stage.
CROP USAGE—COTTON
1st application: At the 1 to 4 boll stages, weekly.
2nd application: At first square.
3rd application: At first bloom.
4th application: At first white flower and again two weeks later.
5th application: Apply single application of 1 pint/acre during last two weeks of bloom.

CROP USAGE—GRAPES—1 pint/acre each application.
1st application: Between leaf out and prebloom.
2nd application: At petal fall.
3rd application: After harvest.
CROP USAGE—ORANGEES—1 pint/acre each application.
1st application: At leaf out.
2nd application: At calyx (petal fall).
3rd application: 4 weeks after 2nd spraying.
4th application: 4 weeks after 3rd spraying.

CROP USAGE—PEACHES—1 pint/acre each application.
1st application: At prebloom.
2nd application: At calyx (petal fall).
3rd application: 3 weeks after 2nd spraying.
4th application: 4 weeks after 3rd spraying.
5th application: At leaf out.

CROP USAGE—PEANUTS—1 pint/acre each application.
1st application: At leaf out.
2nd application: At leaf out.
3rd application: 10 days after 2nd spraying.
4th application: 10 days after 3rd spraying.
5th application: 10 days after 4th spraying.

CROP USAGE—POTATOES—1 pint/acre each application.
1st application: Just prior to first bloom.
2nd application: 10 days after 1st spraying.
3rd application: 10 days after 2nd spraying.
4th application: 10 days after 3rd spraying.
5th application: 10 days after 4th spraying.

CROP USAGE—SOYBEANS—1 pint/acre each application.
1st application: At first bud formation.
2nd application: At first bud formation.
3rd application: At first bud formation.

CROP USAGE—STRAWBERRIES
1st application: Use 2 pints Sea Crop 16 per acre at prebloom.
2nd application: Use 1 pint Sea Crop 16 per acre at prebloom.
3rd application: Use 1 pint Sea Crop 16 per acre at petal fall.
4th application: Use 1 pint Sea Crop 16 per acre after harvest.

CROP USAGE—SUGAR BEETS—1 pint/acre each application.
1st application: At tuber initiation.
2nd application: 2 to 3 weeks after 1st spraying.
3rd application: 2 to 3 weeks after 2nd spraying.

CROP USAGE—TOMATOES—1 pint/acre each application.
1st application: Use 2 pints Sea Crop 16 per acre at time of seeding or up to 20 days thereafter.
2nd application: Use 2 pints Sea Crop 16 per acre at the time seedlings are transplanted. See Transplanting instructions above.
3rd application: Use 1 pint Sea Crop 16 per acre 2 to 3 weeks after 1st bloom.

CROP USAGE—WHEAT—1 pint/acre each application.
1st application: 1 to 2 weeks before boot stage.

MATERIAL SAFETY DATA SHEET

MANUFACTURER INFORMATION

Name: North American Kelp
Address: 41 Cross St.
Waldoboro, ME 04572

Emergency Phone No: (207) 832-7506
Information Phone No: (207) 832-7506

PRODUCT IDENTIFICATION

Product Name: SeaCrop16

Product Use: Plant Growth Regulator

CAS Name: N/A

CAS No: N/A

NIOSH Registry No: Not Registered

SHIPPING INFORMATION

DOT (HAZMAT) Proper Shipping Name: None
ID# None

DOT Label: None

U.S. Surface Freight Classification: None

Pollutant Category: None

Group #: None

CHRIS Code: None

NFPA Rating

Health

Fire

Reactivity

Special Hazard