KELPAK®

PLANT GROWTH
IN HARMONY
WITH NATURE

kelpak

WHY KELPAK

This natural seaweed concentrate utilises a unique process to deliver an end product that is scientifically proven to have numerous beneficial physiological effects on plants. Ongoing international research and trialling proves Kelpak's ability to consistently increase the health, quality and yield in a wide variety of crops, with resultant profits benefiting farmers around the world for over forty years.

THE SOURCE

The giant brown kelp species ***Ecklonia maxima***, is hand harvested by divers in the clean and nutrient rich waters off the rugged, cold Atlantic coastline of southern Africa. A strict harvesting protocol is followed to ensure uniformity and activity that is essential for the raw material used to manufacture Kelpak.

THE PROCESS

The freshly harvested seaweed is sorted, cut, washed, inspected and gradually reduced. The material is then subjected to high pressure, applying a significant degree of potential energy into each particle. When passed at high velocity through a low pressure zone, this stored energy instantaneously expands, causing the cell walls to rupture, releasing the active compounds found in Kelpak. This non-denaturing process avoids the use of heat, chemicals or freezing and is known as Cold Cellular Burst Technology, a proprietary method refined over the last four decades.

THE RESULT

Return on investment has proven to be consistently high in global trials. This natural seaweed concentrate offers numerous benefits, with resultant increased production profits for the end user.

KELPAK BENEFITS

- Prolific lateral rooting
- Increases growth of seedlings
- Increases growth of nursery plant-outs
- Improves nutrient uptake
- Increases photosynthesis
- Alleviates the effect of stresses
- Increases pollen germination and tube growth
- Increases fertilisation
- Increases fruit set and retention, size and colour
- Improves shelf-life during cold storage

KELPAK APPLICATION

- Seed coating
- Planter application
- Root dip
- Soil drench
- Drip irrigation
- Foliar spray conventional, electrostatic or aerial

ACTIVE COMPOUNDS

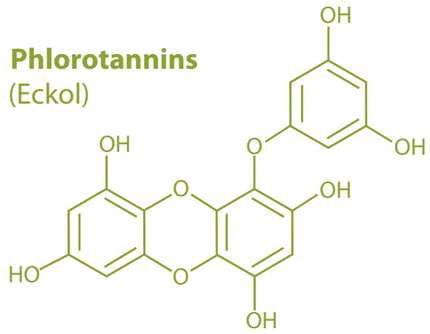
IN MICRO QUANTITIES :

- Alginates
- Macro and micro nutrients

IN SIGNIFICANT QUANTITIES :

- Phlorotannins (Eckol)
- Polyamines

Phlorotannins
(Eckol)



Active compounds act individually or in concert, contributing to numerous favourable physiological responses

OPTIMAL USAGE

- Do not dilute more than 1:500 with foliar application
- Do not dilute more than 1:1000 with application through drip irrigation, apply as a pulse during last 10 minutes of irrigation cycle
- Do not apply more frequently than 10 days apart
- Maintain pH below 7
- Compatible with most agrochemicals

Kelpak is approved for organic crop production according to Regulations:
(EC) No. 834/2007 and 889/2008, and USDA/NOP-Final rule

Kelpak is manufactured using the unique cold cellular burst process

GLOBAL TRIAL RESULTS:

Table grapes

berry size	+10%
yield returns	+12%

Wine grapes

yield increase	+15%
bunch stretching	+10%

Marketable yield

Apples	+10%
Cherries	+18%
Pears	+11%
Peaches	+ 9%
Plums	+15%

Marketable yield

Avocados	+15%
Bananas	+13%
Blueberries/Raspberries	+ 8%
Citrus	+15%
Strawberries	+14%

Melon

marketable fruit	+17%
fruit weight	+ 5%

Watermelon

fruit weight	+31%

Butternut

large fruit yield	+23%
increase in return	+13%

Pumpkin

increase in return	+21%

Cucumbers

plant root mass	+50%
fruit/tunnel	+11%
fruit mass	+12%
shelf-life (days)	+ 6

Marketable yield

Carrots	+11%
Chicory	+15%
Onions	+13%

Potatoes

dry land yield	+16%
irrigated land yield	+11%
seed potato yield	+17%

Marketable yield

Field tomatoes	+21%
Greenhouse tomatoes	+25%
Peppers	+17%

Head lettuce

head weight	+16%

Leafy lettuce

leaf weight	+13%

Broccoli

head weight	+15%

Cauliflower

head weight	+13%

Cabbage (large)

head weight	+15%

Cabbage (small)

head weight	+ 9%

Legumes (seed yield)

Dry beans	+26%
Green beans	+10%
Peanuts	+16%
Peas	+17%
Soybeans	+17%

Cereal crops

Barley	+15%
Canola	+12%
Maize	+12%
Rice	+13%
Wheat	+12%

Nut crops

Almonds	+23%
Macadamias	+17%
Pecans	+16%
Walnuts	+18%

DIRECTIONS FOR USE

Suitable For Application With Electrostatic Spray Equipment
Ground Application: Apply in up to 500 L water per ha. It is advisable to use a surfactant in the spray solution
Aerial Application: Apply in 30 L water per ha
Orchard Application: Volume determined according to tree-row-volume

CROP	DOSAGE	APPLICATION
ALMONDS	3 L/ha	Spray at 50% bloom and repeat twice at 10-14 day intervals
AVOCADOS	3 L/ha	Spray with gibberellic acid inhibitor at 50% bloom and repeat 14 days later
BANANAS	2-4 L/ha	Spray pre-bloom and repeat 2 to 3 times at monthly intervals
BLUEBERRIES, POME & STONE FRUIT	3 L/ha	Spray at fruit set and repeat twice at 14 day intervals
CHERRIES	3 L/ha	Spray at 50% bloom and repeat twice at 10-14 day intervals. Optional sprays at straw and 14 days later
CITRUS	200 ml/100 L water	Spray 3 times between white tip and full bloom Optional spray at fruit set. Spray post-harvest with nitrogen applications
MACADAMIAS	200 ml/100 L water	Spray start of bloom and repeat 4 times at monthly intervals
NEW ORCHARD & VINEYARD PLANTINGS	1 L/100 L water 500 ml/100 L water 200 ml/100 L water	Dip bare roots of nursery trees before transplant or Soak seedling bags before transplant, or soak soil around trees after plant-out and Spray 3 to 5 times during early active growth at 21 day intervals
PECANS & WALNUTS	3 L/ha	Spray at catkin elongation and repeat twice at 14 day intervals
STRAWBERRIES	1 L/100 L water 3 L/ha	Dip the runners in solution at plant-out and Apply at 21 day intervals, cease application 1 month before end of harvest
TABLE GRAPES: ALL CULTIVARS Bunch stretching Berry size, uniformity Improved sugar and colour	2 L/ha 3 L/ha 4-5 L/ha 1-1,5 L/100 L water 3 L/ha	Spray at 5-10 cm shoot growth Spray in 1000 L water or less after set (4 mm berry size) Repeat 2 to 3 times at 10-14 day intervals or Spray as above with electrostatic applicators or Dip bunches 2 to 3 times at 4-12 mm berry size Spray at start of berry softening (veraison) and repeat 14 days later
WINE GRAPES Bunch stretching Berry set, uniformity, yield increase	 2 L/ha 2 L/ha	 Spray at 5-10 cm shoot growth Spray 2 weeks before flowering and repeat at start of flowering to 30% bloom
TURF & SPORTS FIELDS GREENS	2 L/ha 250-500 ml/100 L water	Spray at start of growing season and repeat 14 days later. Repeat sprays after summer heat stress Apply 20 L solution to 100 m^2 and repeat monthly Use higher application rate with establishment
FLOWERS & ORNAMENTALS	100 ml/10 L water 50 ml/10 L water	Dip tray with seedlings in solution, or wet seedling tray/bag before transplant and Spray 14 days after emergence or transplant and repeat at 21 day intervals

CROP	DOSAGE	APPLICATION
CAPSICUMS: PAPRIKA, PEPPERS. CRUCIFEROUS CROPS LEAF VEGETABLES LETTUCE ONIONS TOMATOES	1 L/100 L water 2-3 L/ha	Dip seedling tray with seedlings in solution, or wet seedling tray with a watering can before transplanting and Spray 14 days after transplant and repeat once or twice at 14-21 day intervals Start sprays at 3 to 4-leaf stage for direct seeded plants
CARROTS & CHICORY	2 L/ha	Spray at 4 to 5-leaf stage and repeat 14 to 21 days later
CUCURBIT CROPS: BUTTERNUT CANTALOUPE CUCUMBER MELON PUMPKIN WATERMELON	 1 L/100 L water 3 L/ha	 Dip seedling tray with seedlings in solution, or wet seedling tray with a watering can before transplanting and Spray 14 days after transplant and repeat 14 to 21 days later Start sprays at 3 to 4-leaf stage for direct seeded plants
DRY BEANS, GREEN BEANS, PEAS	2 L/ha	Spray between V6 (6-Trifoliolate) and R1 (start of flowering) growth stages
GARLIC	1 L/100 L water 2 L/ha	Soak seed pieces for 15 minutes before planting and Spray at 3 to 4-leaf stage and repeat once or twice at 14-21 day intervals
LUCERNE	2 L/ha	Spray 7 to 21 days after cutting or grazing
POTATOES	500 ml/100 L water 1 L/ha 3 L/ha 2 L/ha	Dip seed potatoes for approximately 5 minutes before planting or Spray seed potatoes before plant or in plant furrow with planter and Spray at 15 cm rosette stage and Spray 10 to 14 days later, but not later than tuber formation
SOYBEANS	2 - 4 L/ha	Spray between V3 (3-Trifoliolate) and R1 (start of flowering) growth stages
SUGAR BEET	3 - 4 L/ha	Spray at 4-pair-leaf stage
SUGAR CANE	350 ml /100 L water 2 L/ha	Dip stalks or spray seed pieces in furrow at planting and Spray at 60 to 90 cm leaf length stage
WHEAT, BARLEY, CANOLA, MAIZE, OATS, RICE	2 L/ha	Spray at 4 to 5-leaf stage (BBCH 14-15)
ROSES: PLANTING & GREENHOUSE OPEN PRODUCTION	1 L/1000 L water 2-3 L/1000 L water 2-3 L/1000 L water	Drench flower beds of newly planted roses, or at start of production cycle for established roses at 2 L/m^2 and repeat 14 days later and Spray 21 days after second flower bed drench Spray after start of new growth and repeat 21 days later. Repeat sprays 5 months later

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