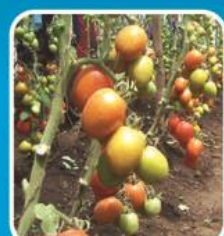
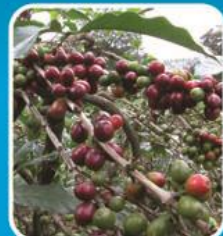


CODA RANGE OF NUTRITIONAL PRODUCTS

FOLIAR & FERTIGATION PRODUCTS

For all nutrients and trace elements required by plants



CODASAL PLUS 2000

A calcium liquid complex containing several organic acids that enhances ability of the product to correct calcium deficiencies in many kinds of soils.

CODAHUMUS 20

SOIL AND WATER CONDITIONER AND AMELIORATOR

CODASUL pH

A highly concentrated acid liquid solution of nitrogen with sulphur for soil and water amendment and nutrition

CODAMIN RADICULAR

An N: P: K formulation based on enzymatic amino acids and Potassium Phosphite with nutritional, stimulation and phytofortification effect.

CODAMIN B-Mo

A trace element complex containing Boron and Molybdenum complexed with Amino acids.

CODAPHOS K

Is a high concentration fertilizer solution containing phosphorous and potassium as potassium phosphite for optimal plant growth (flowering and fruit set) and for phytofortification.

CODA MIX

A balanced Liquid blend of trace elements for deficiencies corrections suitable for use throughout the crop cycle



TWIGA CHEMICAL INDUSTRIES LTD.,

Ol-Kalou Road, off Nanyuki Road - Industrial Area

P.O. Box 30172, 00100 GPO Nairobi - Kenya. Tel: 3942000 /3942300, Fax: 3942405,

E-mail: info@twiga-chem.com

Website: www.twigachemicals.com


greencare by



CODA RANGE OF NUTRITIONAL PRODUCTS FOR FOLIAR AND FERTIGATION

A. SOIL /WATER CONDITIONERS & CORRECTORS

1. CODASAL PLUS 2000

	GUARANTEED ANALYSIS		DETAILS
		%W/W	
	CALCIUM OXIDE	12.3	17.5

APPLICATION METHOD AND DOSES [CROPS RECOMEDATIONS AND TIMING]

I. CALCIUM DEFICIENCY CORRECTION

CROPS	FERTIGATION - DOSE	USAGE - OBSERVATIONS
Strawberry	5-6 L/ha- application	Apply weekly during the crop cycle
Table grape	4-6 L/ha- application	Apply weekly from raceme formation till one week before harvest
Tomato	Open field: 4- 6 L /ha-applications Green house: 1 L /1000m ² -application	Apply weekly
Citrus	4-6 L /ha –application	Apply every 7-10 days from fruit setting till harvesting beginning
Pome fruits-apple	5-6 L /ha-application	Apply weekly from petals fall till harvesting

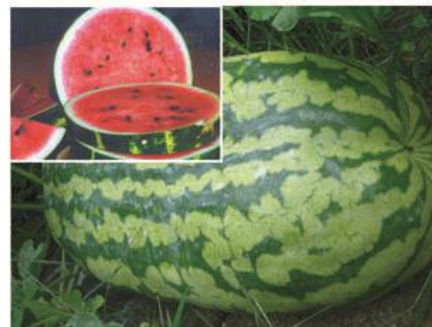
II . SOIL AMELIORATOR - DRIP IRRIGATION

Soil type	Doses
Sand	10-12 L /ha-application
Loam	12-15 L /ha-application
Clay	15-20 L /ha-application

The fertigation may cause salts concentration in the plant soil bulb. The application of CODASAL PLUS 2000 in the initial crop stages favours the plant implantation in the soil.

III. SALINE AND SODIC SOILS CORRECTOR-SOIL TEXTURE DEGRADATION


Doses	Observations
5-10 L /ha –application	Drip irrigation 2 -5 applications depending on soil texture and Sodium (Na ⁺) concentration.



IV . SALINE WATER CORRECTION - SODIUM EXCESS

Doses	Observations
10-40 cc/m ³ irrigation water	Depending on: salinity, crop resistance to salt, irrigation water volume and soil texture.

2. CODA HUMUS 20

	GUARANTEED ANALYSIS		DETAILS	
		%W/W		%W/V
	TOTAL HUMIC EXTRACTS	20.2	22.8	<ul style="list-style-type: none"> - CODAHUMUS 20 Ameliorates the physical, chemical and biological properties of the soil, due to the origin and characteristics of its Humic Acids - CODAHUMUS 20 increases the fertility both in acid and alkaline soils. The physical and chemical properties of Humic and Fulvic acids increase the soils CATION EXCHANGE CAPACITY.
	HUMIC ACIDS	10.0	11.3	<ul style="list-style-type: none"> - CODAHUMUS 20 favors root development due to the soil structure improvement .It also increases the nutrient availability helping some elements to be absorbed (by its chelating properties); thus avoiding nutritional unbalance on plants.
FULVIC ACIDS	10.2	11.5		

APPLICATION METHOD AND DOSES [CROPS RECOMEDATIONS AND TIMING]

I) DRIP IRRIGATION

CROP	DOSE OF CODAHUMUS 20
Tomato	30-40 lts/ha-cycle
Vegetables	30-40 lts/ha-cycle
Strawberries	30-45 lts/ha-cycle
Olive tree	25-40 lts/ha-cycle
Almond ,pistachios and hazel nut trees	25-35 lts /ha-cycle
Nursery	40-50 lts/ha-cycle
Banana	40-50 lts/ha-cycle
Fruit tree	30-40 lts /ha-cycle
Citrus	30-40 lts/ha-cycle


- In fruits tree, it is recommended to make 4-5 applications from sprouting stages.
- In vegetables and ornamentals, treatments should be repeated every 15 days.
- It is possible to apply together with chelates and trace elements, therefore saving application costs.
- In case of flooding irrigation increase the doses up by 50%.



II) CODAHUMUS 20 MIXED WITH CHELATES.

High Chlorosis	1 kg Fe chelate	3 lts Codahumus 20
Medium Chlorosis	1 kg Fe chelate	2 lts Codahumus 20
Trace elements	1 kg trace elements	2 lts Codahumus 20

3. CODASUL pH

	GUARANTEED ANALYSIS		DETAILS
	%W/W	%W/V	
	NITROGEN	22.8	<ul style="list-style-type: none"> - Supplies both macro and trace elements to plants. - An excellent pH acidifier for irrigation water –avoiding the typical plugging of emitters or other parts in irrigation systems. - Temporarily acidifies the soil solution, giving additional benefit to the crops nutrition. - Encourages the unblock age of soil nutrients; making easier the uptake of such nutrients. - Improves water penetration in the soil. - Encourages the salts leaching - Solubilizes some fertilizers - As additive for foliar sprayings, it increases the effectiveness of the phytosanitary or fertilizer applied
	SULPHUR	60.8	
	IRON	0.03	
	ZINC	0.01	


APPLICATION METHOD AND DOSES [CROPS RECOMEDATIONS AND TIMING]

APPLICATIONS	DOSES	OBSERVATIONS
Water with high Risk of Precipitations and Excess of salts.	100-250 cc /m ³	It is advised to apply minimum once a week, or in each irrigation.
Water with Moderate risk of Precipitation	50-100 cc/m ³	Apply each week or 10 days along the season
To encourage Plants Nutrition in alkaline soils	25-50 cc /m ³	Apply each week along the season
To increase effectiveness of foliar Spray solution	10-15 cc/m ³	Apply with an absolute rigor to final pH 6-6.5



B. AMINO ACIDS AND BIOSTIMULATORS

1. CODAMIN RADICULAR

	GUARANTEED ANALYSIS			DETAILS
		%W/W	%W/V	
	NITROGEN	2.6	3.04	<ul style="list-style-type: none"> - Root stimulation: stimulates root formation because of the amino acids. The presence of phosphite protects the new roots from fungi attacks or diseases. - Nutritional: The N: P: K content and free amino acids supply nutritional elements to the plant. - SANITARY: The potassium phosphite protects the crops against fungi pathogens like Pythium and Phytophthora - CROP YIELD: it increases the crop yield because of better absorption, translocation and activity of the nutrients especially when applied with irrigation water.
	PHOSPHORUS [P ₂ O ₅]	9.8	11.4	
	POTTASSIUM [K ₂ O ₅] WATER SOLUBLE	3.5	4.1	
	FREE AMINO ACIDS	5.0	5.8	
TOTAL ORGANIC MATTER	6.0	7.0		


APPLICATION METHOD AND DOSES [CROPS RECOMEDATIONS AND TIMING]

CROPS	DOSES	OBSERVATIONS
Ornamentals	2-3 lts/ha Repeat every 15 days	Distributed from the beginning of plantation
Fruit crops Citrus	20-40 lts/ha –cycle	Distributed from sprouting and during the fruit development
Horticultural crops : Outdoor Green house	4-8 lts /ha-application 5-10 lts/ha-application	From the first crop stages (2-4 applications)

Is applied through fertigation. It is recommended in fruit trees, citrus, horticultural crops and ornamentals during the plants development stages. The main application stages are:-

- beginning of vegetative activity,
- pre-flowering and fruit setting,
- fruit development
- after stress situations.

2. CODAMIN B-Mo

	GUARANTEED ANALYSIS			DETAILS
		%W/W	%W/V	
	BORON [B] COMPLEXED AND WATER SOLUBLE	5.00	6.20	<ul style="list-style-type: none"> - It has free Amino acids that increase absorption both through leaves and roots. - It stimulates the plants and increases its resistance through harmful influences (as disease or infection) - Applied with amino acids it helps the plant synthesize its own proteins faster. - Stimulates the physiological functions of sprouting, blossom, pollination, fruit setting and fruit development
	MOLYBDENUM [Mo] COMPLEXED AND WATER SOLUBLE	0.17	0.20	
COMPLEXING AGENT: FREE AMINO ACIDS 120G/KL				

APPLICATION METHOD AND DOSES [CROPS RECOMEDATIONS AND TIMING]

Codamin B-Mo is applied by foliar spray or fertigation.

APPLICATION METHOD	CODAMIN B-Mo	No of applications
Foliar	2-3 cc / LT	2-3
Fertigation	2-3 LT /Ha application	3-4

APPLICATION TIMING:

TREE CROPS:


- pre flowering
- Fruit setting
- Fruit development

OTHER CROPS: apply from first stages of crop development

EXTENSIVE CROPS	CODAMIN B-Mo	No of applications
Alfafa	2 L /Ha	After cutting (1-15 cm high)
Sugar beet	3-5 L /Ha	From 8-10 leaves onwards
Sunflower	3 L /Ha	From 6-8 pairs of leaves onwards

C. PREVENTIVES

1. CODAPHOS K

	GUARANTEED ANALYSIS			DETAILS
		%W/W	%W/V	
	PHOSPHORUS P ₂ O ₅	30.0	42.0	-It promotes the plants natural defense system against cryptogrammic diseases such as ;root rot, pythium, phytophthora.
POTASSIUM K ₂ O WATER SOLUBLE	20.0	28.0	-Codaphos k is easily absorbed and distributed within the plant -It optimizes flowering and fruit setting	

APPLICATION METHOD AND DOSES [CROPS RECOMEDATIONS AND TIMING]


Application method and doses: Codaphos k can be applied either as foliar spray or fertigation. It is recommended to apply the product in active growth stages for optimal distribution of the product inside the plant.

CROPS	DOSES	FOLIAR APPLICATION	FERTIGATION	OBSERVATION
FRUIT TREES CITRUS	2-3lt/Ha	3 Treatments March –April, June and September.	5 lts /ha –application	2-4 applications per crop cycle
Horticultural ornamentals and straw berries	2-3lt/Ha	2-3 applications. 1 st application: pre-flowering and repeat every 15 days.		
Conifers	2-3lt/Ha	3-4 applications 1 st application :April and repeat every month		

Timing :
It is recommended to apply the product during stages of active growth.

D. DEFICIENCIES CORRECTORS CHELATES

1. CODA MIX

	GUARANTEED ANALYSIS			DETAILS
		%W/W	%W/V	
	Boron [B] water soluble.	0.30	0.38	-Contains balanced blend of trace elements with natural complexing agent [lignosulphonates], providing greater assimilation and absorption in foliar application . -it is a good dispersing and wetting agent when applied with other products
	Copper [Cu] complexed and water soluble	0.12	0.15	
	Iron [Fe] complexed and water soluble.	4.00	5.12	
	Manganese [Mn] complexed and water soluble	2.00	2.56	
	Molybdenum [Mo]complexed and water soluble	0.08	0.10	
	Zinc [Zn] complexed and water soluble	0.50	0.64	
COMPLEXING AGENT: EDTA, citric acid and Lignosulphonate				

APPLICATION METHOD AND DOSES [CROPS RECOMEDATIONS AND TIMING]

Coda mix is applied as a foliar spray or by fertigation.

CROP	NO of applications	Average doses /Application L/HA CODA MIX	CROP	NO of applications	Average doses /Application L/HA CODA MIX
Citrus	2-4	2-3	Wheat ,rice	1-2	1-3
Fruit trees	2-3	2-3	Soya	1-2	2-3
Vineyard			Peanuts	1-2	2-3
Coffee .cacao	1-3	2-3	Leguminous	1-3	2-3
Banana	4-8	2-4	Tomato	2-3	2-3
Tobacco	1-8	1.5-3	Pepper	2-3	2-3
Pineapple	2-4	2-3	melon	2-4	2-3
Cotton	1-3	2-3	Water melon	2-4	2-3
Corn , sorghum	1-2	1-3	Cucumber	2-4	2-3
			Ornamentals	2-3	1-3

AVERAGE FOLIAR DOSE : 2-3 LTS /HA

FERTIGATION : From 1 to 2 liters /HA every 7-10 days



WHY SHOULD FARMERS USE CODA RANGE OF NUTRITIONAL PRODUCTS

The Coda range of products:

- Offers vital supplement to conventional plant nutrition especially when roots are not able to fully absorb nutrients from the soil e.g. during cold weather, when soil has a high PH, during periods of water shortage etc.
- Guarantees the kind of results farmers want to see in their crops i.e. a strong root system to absorb water and minerals from the soil, greener foliage for maximum photosynthesis, big size fruits/berries/seeds, uniformly ripened fruits/berries e.t.c
- Made from the premium quality raw materials without residues, thus guarantees high quality final product at affordable prices.
- Highly concentrated giving crops the required nutrients at optimum levels
- Contain a high level of well balanced EDTA chelated trace elements preventing leaching and guaranteeing perfect absorption.
- Highly soluble fertilizers ,mixes easily with water
- Compatible with most pesticides as foliar spray or fertigation treatment.
- Low chlorine content(less than 0.5) preventing the risk of salinity.
- Free flow and anti-caking
- Convenient packaging for ease of handling-1 lt ,5 lt, 20 lt packs

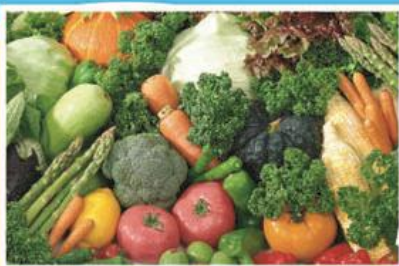
WHEN SHOULD FARMERS USE CODA RANGE OF PRODUCTS



1. When crop roots are not functioning as expected due to for example the following reasons- High soil PH, during very cold weather, fixation of potassium (K) and phosphorous (P) in the soil making them unavailable for plant use, poor soil aeration, when the roots are not yet fully developed.
2. Situations of stress-for example during periods of water shortage
3. When the crops expected yields are high but nutrition from the soil is not enough to guarantee availability of enough nutrients e.g. periods of heavy berry bearing in coffee or heavy fruit bearing in fruiting crops.



Our product families for the improvement and yield of your crop



Contact:-

TWIGA CHEMICAL INDUSTRIES LTD., Ol-Kalou Road, off Nanyuki Road - Industrial Area
P.O. Box 30172, 00100 GPO Nairobi - Kenya. Tel: 3942000 /3942300, Fax: 3942405,
E-mail: info@twiga-chem.com Website: www.twigachemicals.com