



BioActive KitoPlus

Soluble *chitosan hydrochloride*; 100% natural plant elicitor (EU approved "basic substance" under Regulation 1107/2009)
Product approved for use in organic growing systems by Scottish Organic Producers Association.

BioActive KitoPlus Easy

Dissolved *chitosan hydrochloride* (10g/litre w/v); **plant strengthener for all plants/crops/soils**
Product approved for use in organic growing systems by Scottish Organic Producers Association.

Modifying Plant-Microbial Interactions and Improving Crop Yields and Crop Quality

A natural, organic plant elicitor derived from chitin rich shell fish for growers desiring **quality produce and high yields**. Reducing reliance on chemicals **BioActive KitoPlus** and **BioActive KitoPlus Easy** are effective plant growth promoters and plant elicitors; eliciting the plants defence mechanisms and enabling healthy, vigorous plants of good colour and resistant to damage from abiotic and biotic stresses. These products improve both the rhizosphere and phyllosphere encouraging beneficial microorganism populations, including mycorrhizae, enabling improved nutrient assimilation.

- **Control of fungal diseases**
- **Antibacterial activity, inc. *Streptomyces scabies*; scab disease on potato tubers**
- **Effective against plant viruses by modifying the plant's response to infection**
- **Strong insecticidal activity in plant pests**
- **Effective at controlling root feeding nematode populations**
- **Alters the environment in the rhizosphere & phyllosphere to shift the microbial balance in favour of beneficial organisms and to the detriment of plant pathogens**
- **Improved resistance to both biotic and abiotic stresses**
- **Increases photosynthesis, vegetative growth and plant vigour**
- **Stimulates growth promoting microbes and antagonistic biological control agents**
- **Complexes plant nutrients aiding assimilation**

Apply from leaf development (main shoot) to development of fruit; 4 – 8 applications per season

BioActive KitoPlus

100g in 200 litres water / ha [0.5g/litre]

Maximum application rate of BioActive KitoPlus for a single treatment is 800 g / ha

BioActive KitoPlus Easy

10 litres in 200 litres water / ha

Seed Dressing for improved germination:

100 ml / litre of water applied prior to sowing

Tank mixing with other pesticides or plant nutrient products is not recommended.

To avoid agglutination, use BioActive KitoPlus Easy.

BioActive KitoPlus when available is in 500 g sachets & *BioActive KitoPlus Easy* available in 10 litre or 500 litre containers

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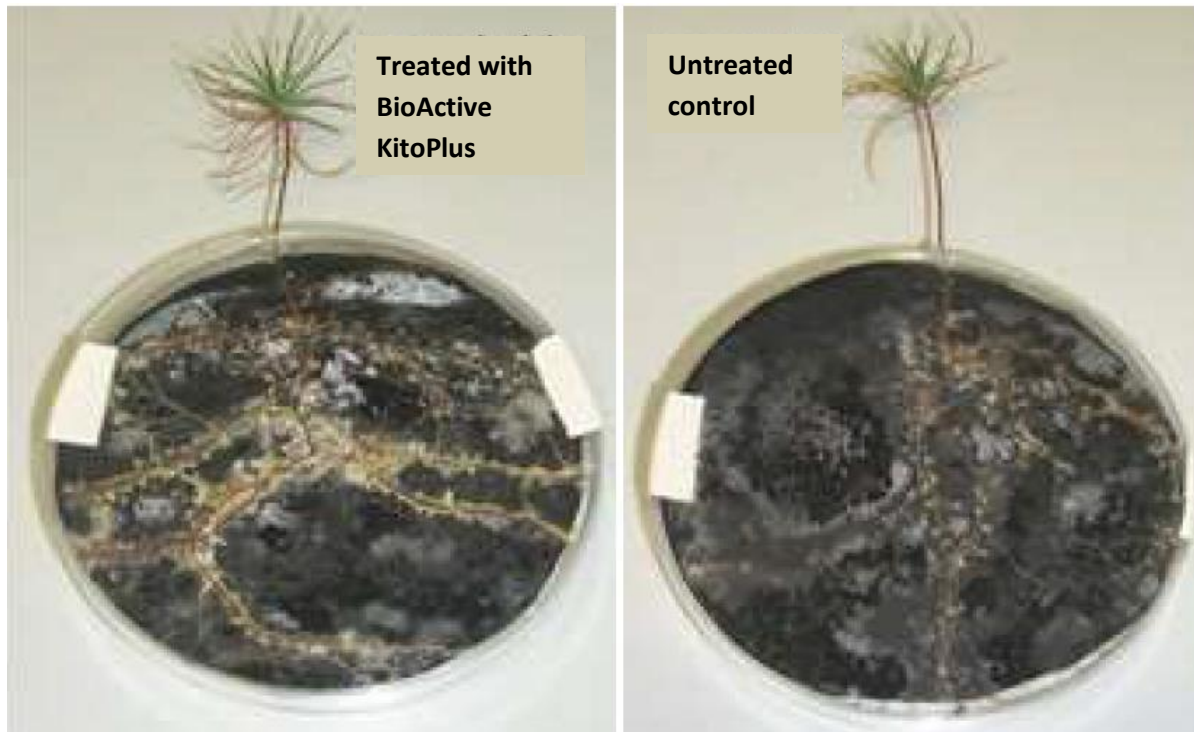
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Registered Office
Whanland Farm, Farnell, Angus DD9 6UF

BioActive KitoEasy effective against (EU approved “basic substance” under Regulation 1107/2009):

powdery mildew (<i>Erysiphe cichoracearum</i> , <i>Sphaerotheca fuliginea</i>) Cucumber, Melon, Pumpkin, Cucurbit & Watermelon	brown patch, damping-off, black scurf, root rot, belly rot, sheath blight , etc. (<i>Rhizoctonia solani</i>) Potato, Rice, Sugar Beet, Cucumber, etc.
bacterial Wilt (<i>Ralstonia solanacearum</i>) Potato & Tomato	grey mould / botrytis bunch rot (<i>Botrytis cinerea</i>) Tomato, Grape, Strawberry, Potato, etc.
corky root rot (<i>Pyrenochaeta lycopersici</i>) Tomato	black bread mould (<i>Rhizopus stolonifer</i>) Strawberry, Sweet Potato, Papaya, etc.
downy mildew (<i>Plasmopara viticola</i>) Grape	late blight / potato blight (<i>Phytophthora infestans</i>) Potato & Tomato
common scab (<i>Streptomyces scabies</i>) Potato, Beet, Carrot, etc.	bacterial canker (<i>Pseudomonas syringae</i> pv. <i>actinidiae</i>) Kiwi
rose black spot disease (<i>Diplocarpon rosae</i>) Rose	fire blight (<i>Erwinia amylovora</i>) Apple
leaf spot diseases (<i>Stagonospora nodorum</i> , <i>Septoria nodorum</i>) Tomato, etc.	canker (<i>Colletotrichum gloeosporioides</i> / <i>Glomerella cingulata</i>) Mango, Apple, Quince, etc.
brown rot (<i>Monilinia laxa</i>) Peach	verticillium wilt (<i>Verticillium albo-atrum</i>) Cucumber, Cucurbit, etc.
downy mildew (<i>Sclerospora graminicola</i>) Millet	

Forestry

Pine seedlings treated with **BioActive KitoPlus** 30 days before the pictures were taken and pine seedlings without pre-treatment, the **BioActive KitoPlus** treated seedlings show a vast increase in root growth and mycorrhiza development.



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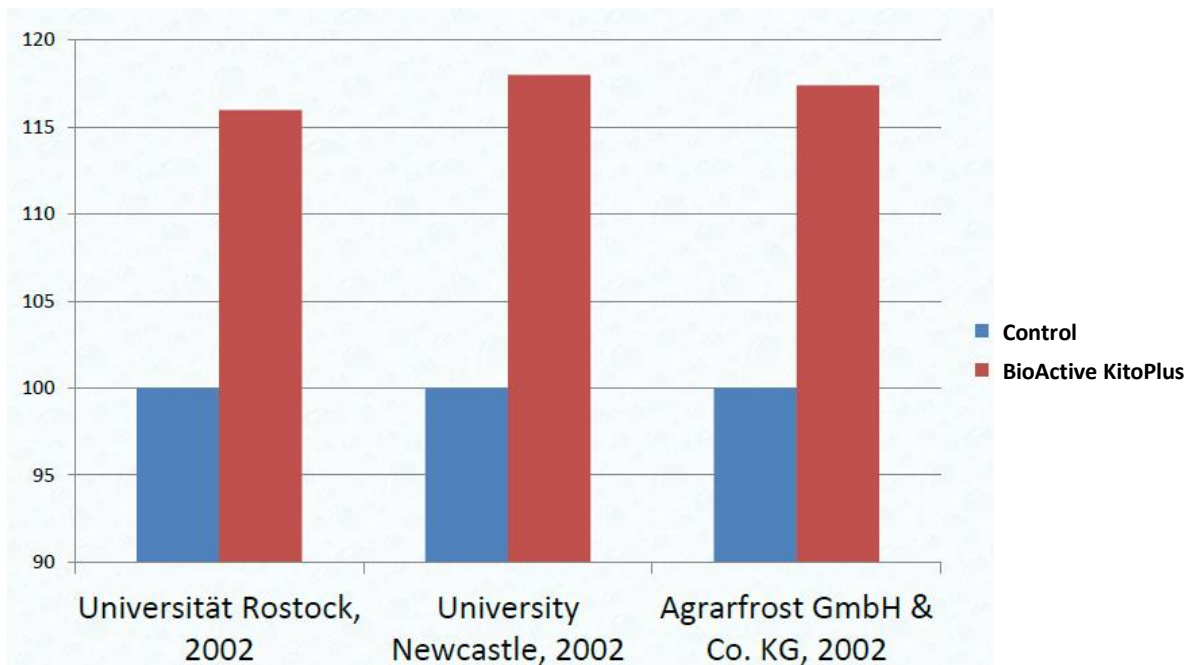
Potatoes

BioActive KitoPlus Easy can be used in various ways for improving a potato crop:

- Seed treatment increasing yield and enhancing pathogen resistance: 100 ml / litre applied prior to sowing
- Spraying (foliar or band) on plants reducing disease and increasing yield: 10 litres in 200 litres water / ha
 - In high pressure situations application rate can be doubled with 10 - 14 days intervals

Combine both treatments for best results. Trials show yield increases ranging from 17% to 25%!

BioActive KitoPlus induced yield increase for potato plants in organic production



Phytophthora infestans, *Streptomyces scabies* and *Rhizoctonia solani* are all examples of pathogens that **BioActive KitoPlus Easy** has effects on. It reduces the risk of infection by triggering and activating the plant defense mechanisms as an elicitor.

A study with arbuscular mycorrhized potato plants shows that chitosan is effective against late blight (*Phytophthora infestans*) without attacking the mycorrhizae. Chitosan was compared to Ridomil, a conventional fungicide. The yield for chitosan treated plants was increased and the disease development was delayed. "At harvest, yields for the Ridomil-Chitosan, Chitosan and AMF-Chitosan treatments were significantly higher than the un-sprayed, non-mycorrhizal control and were not significantly different to the Ridomil-sprayed control. The results are discussed in relation to the production of seed potatoes for organic growers."

In micro propagation add **BioActive KitoPlus** to the tissue culture growth medium prior to autoclaving. The benefits of this treatment are: increased mini tubers numbers, enhanced pathogen resistance, higher seed quality, better acclimatisation after transplanting and generally healthier cultures. Studies showed that **BioActive KitoPlus** increase the number of mini tubers by 20% to >50%. Apply @ 0.01 – 0.1 g / litre.

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Strawberries

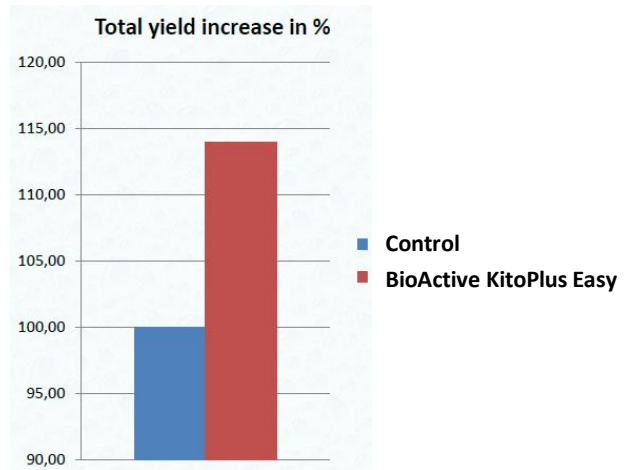
Elsanta, 15-18 cm rhizome diameter, Frigo plants

BioActive KitoPlus Easy treatments:

Whole plant dipped for 10 minutes in 5ml / litre of water solution before planting.

Band spray 2 days after planting: 20cm width, 100 ml / metre of 5ml / litre solution.

Foliar application from leaf sprouting; apply to run-off every 14 days until harvest with 5ml / litre solution.



Cereals / Grasses

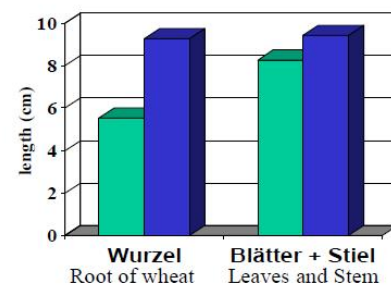
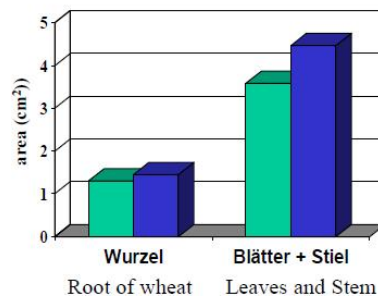
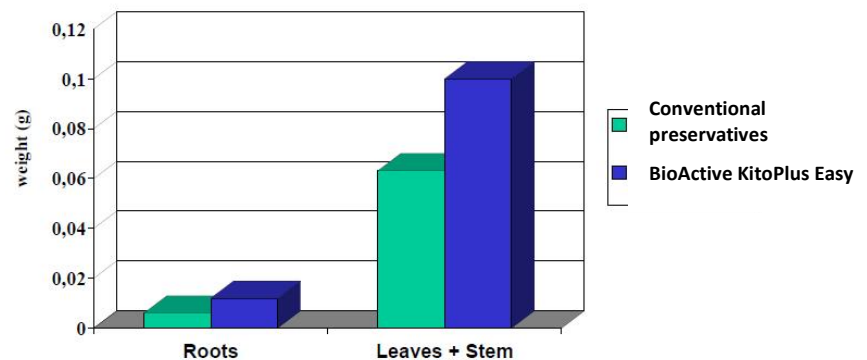
Seed treatment of wheat



Seed treatment with BioActive KitoPlus Easy

Conventional seed treatment

Sowing: 05.11.01; Sampling: 27.01.02



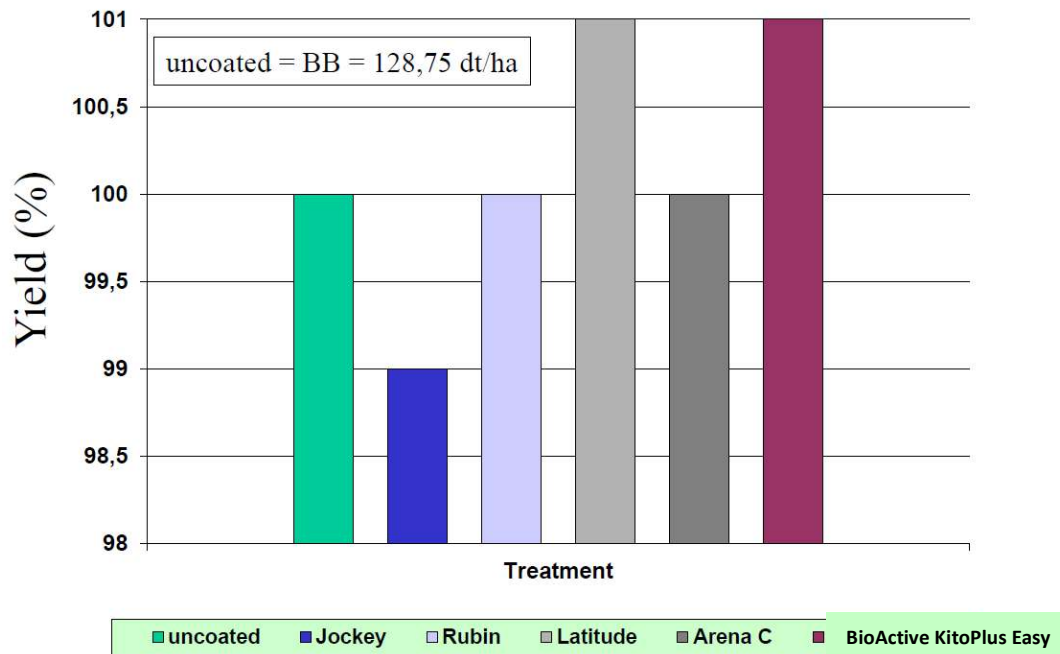
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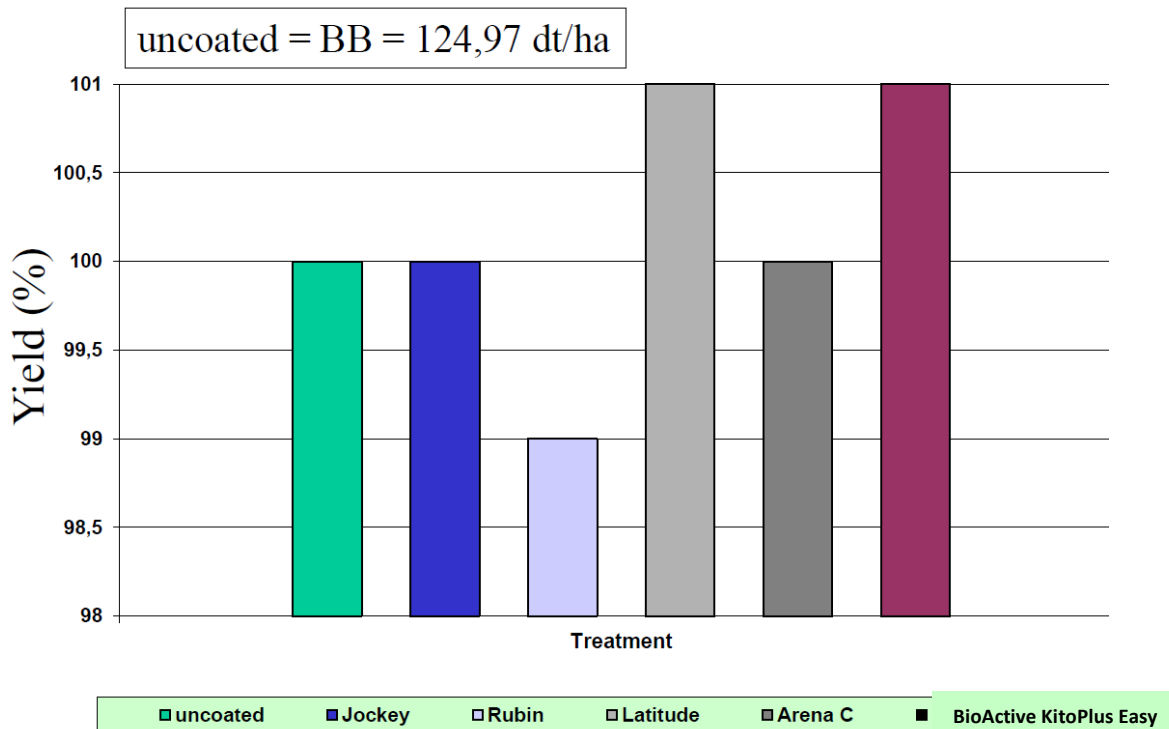


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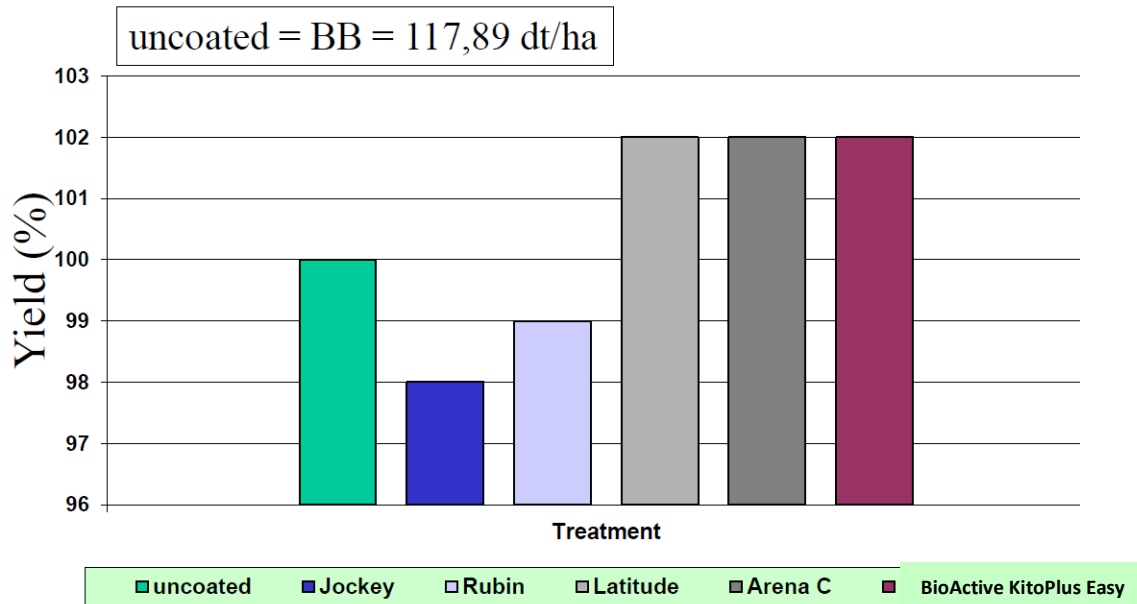
Winter wheat Mordant trials Hücker 2003 (Drifter)



Winter wheat Mordant trials Hücker 2003 (Solist)



Winter triticale Mordant trials Hücker 2003 (Lamberto)



Use of BioActive KitoPlus Easy in winter rye Organic farming 2002, Dahnsdorf (Fläming)

