RhizoVital C5

Cold tolerant Bacillus atrophaeus ABi05 (RhizoVital C5) for early root colonisation

Bacillus atrophaeus ABi05 (RhizoVital C5) is a plant growth promoting bacteria, naturally selected from the subalpine zone. The relatively short growth cycle at lower average soil temperatures in this climatic zone favoured the selection of a cold tolerant species, able to germinate and colonise the rhizosphere at temperatures as of 8 °C (47 °F). Extensive research and field experience showed its beneficial impact on plants. The positive effect is usually expressed through stimulated plant growth, increased nutrient mobilisation and enhanced vitality, supporting the plant to build a strong and efficient root system. These benefits usually lead to improved yields and yield quality.

Introduction

A robust root system is fundamental to ensuring the plant’s tolerance towards stress caused by unfavourable conditions. Intensive agricultural systems and mismanagement in the field (irrigation, fertilisation, plant protection etc.) have a negative influence on the soil activity and the natural microbial community. The lack or imbalance of beneficial soil microbes causes reduced yield and yield quality, which can be compensated through the application of beneficial soil microbes. ABiTEP GmbH, the German expert on production and development of Bacillus based bio-boosters and Andermatt Biocontrol successfully developed programs, where RhizoVital C5 is applied on a wide range of crops. Years of field experience have shown that implementation of RhizoVital C5 successfully increases yield and yield quality. Under field conditions the organism was able to efficiently colonise the rhizosphere, resulting in a higher flexibility to cope with different production and environmental conditions.

Discussion of field trial results

As a bacterial bio-boosting inoculant, RhizoVital C5 is fully compatible with most plant protection products and fertilizers. The product can be applied alone or in tank-mix and in a wide range of application methods (seed dressing, drench, directed spray, fertigation, etc). Important for good rhizosphere colonisation is an early application.

The various trials carried out in the north of Germany reveal RhizoVital C5 ability to positively influence the yield and yield quality of a broad range of crops. Although there are variations between years, a relatively consistent increase of between 5 and 10% or more is realistic over the years. A higher application rate generally increases the effect and especially the likelihood of crop response. RhizoVital C5 should be part of any future oriented production system.

Conclusions

Programs with applications of RhizoVital C5 have successfully shown to positively increase yield and yield quality.

Benefits for users

✔ Increased crop yield
✔ Increased marketable yield due to better yield quality
✔ Vigorous root systems
✔ Improved tolerance towards plant stress (water deficiency, salinity, cold depression etc.)
✔ Insurance for unfavourable environmental conditions
✔ Reduction in chemical agro inputs

For potato production:
✔ Better skin quality
✔ Increased marketable yield

For onion production:
✔ More uniform potatoes
✔ Increased marketable yield

For carrot production:
✔ More uniform carrots

For corn production:
✔ More uniform ears
✔ Increased marketable yield

Mixibility: Highly compatible with plant protection products and fertilizers

RhizoVital C5 can also be provided as raw material e.g. for the formulation with fertilisers, seed coating etc.

Acknowledgements

We especially thank ABiTEP for conducting the trials and the continuous good collaboration.

Simon Fleischli, Andermatt Biocontrol AG, Switzerland
Contact: simon.fleischli@biocontrol.ch

Trial Results

Table 1: Marketable yield increase on potato (tuber-size <35mm) [%]

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<tr>
<th>Year</th>
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Table 2: Marketable yield increase on onions [%]

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Table 3: Marketable yield increase on carrot [%]

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Table 4: Marketable yield increase on cere [1%]

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Key benefits:

✔ Growth stimulation and nutrient mobilisation through bacterial hormones and enzymes as of 8 °C (47 °F) soil temperature
✔ Active ingredient: Bacillus atrophaeus ABi05
✔ Crops: All crops

Formulation type:

Suspension concentrate

Concentration:

≥ 2.5 × 10^9 spores/ml

Standard dosage:

500 – 1000 ml/ha

Sheel-life:

2 years at 25 °C (77 °F)

Mixibility:

Highly compatible with most plant protection products and fertilizers

RhizoVital C5 can also be provided as raw material e.g. for the formulation with fertilisers, seed coating etc.

Andermatt Biocontrol AG · Stahlermatten 6 · 6146 Grossdietwil · Switzerland · Tel. +41 (0)62 917 51 25 · Simon.Fleischli@biocontrol.ch

Contact: simon.fleischli@biocontrol.ch, Tel +41 62 917 51 25, www.andermattbiocontrol.com

Andermatt Biocontrol AG · Stahlermatten 6 · 6146 Grossdietwil · Switzerland · Tel +41 (0)62 917 51 25 · Simon.Fleischli@biocontrol.ch

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