



## Anwendungsbericht/User Application Report

**Produkt/Product:**

Penergetic b  
Article No 3110

**Fachberater/Consultant:**

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Penergetic UK Ltd

**Anwender/User:**

Commercial Grower Lancashire England

**Datum/Date:**

30.10.2020

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### Test Application Potatoes England UK 2020

This trial was run in conjunction with Microbial Distribution on one of their customer farms in the north of England. The aim of the trial was to assess the benefits of using Penergetic products alongside one of their own products, in this case the bacteria strain *Bacillus amyloliquifaciens* strain IT45 referred to hereafter as Microbes.

### Conclusions

This trial shows an obvious benefit to using penergetic b, in cases of yield volume, yield quality and financially. The significant improvement achieved alongside the microbes is something that will require further investigation. The benefits to growers in terms of yield and profit are great, with the added advantage of the fact the products can be applied alongside other plant treatments thus, not adding significantly to workload.

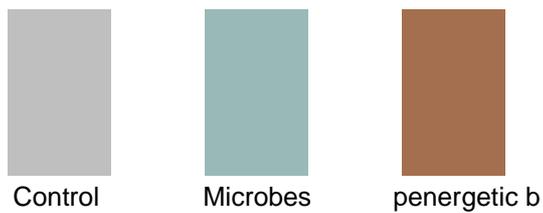
### Important Note

The original intention was to use both penergetic b and penergetic p, however the start of the trial coincided with the UK national lockdown and movement restrictions due to the Covid 19 pandemic. In response to this the company that owned the farm restricted who could visit and also minimised working on the trial to limit staff contact.

As a result of this the potatoes in the Penergetic plot were only treated with penergetic b. This is reflected in the method and report as outlined below.

## Methodology

For this trial the field was divided into three plots, one as the control, one with the addition of the microbes and finally one with both the microbes and penergetic b. All other inputs were the same for each plot.

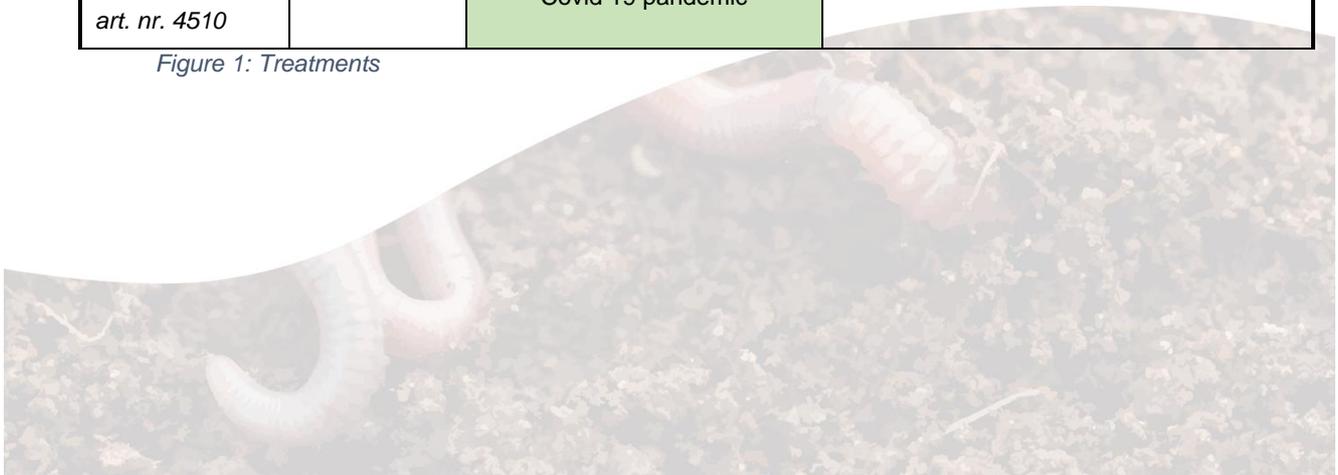


- Potato variety - Maris Piper
- The plot sizes were approximately one hectare each.
- penergetic b was applied at 450 grams per hectare along with the microbes
- Application Date May 2020

## Treatments

<b><i>Penergetic</i></b>	<b><i>Soil treatment</i></b>	<b><i>Seed Treatment</i></b>	<b><i>Foliar application</i></b>	<b><i>Remarks</i></b>
	<b><i>g / ha</i></b>	<b><i>g / ha</i></b>	<b><i>g / ha</i></b>	
<b><i>penergetic b</i></b> <i>for soil potatoes</i> <i>art. nr. 3110</i>	450 g / ha			In May 2020 along with the microbes
<b><i>penergetic p</i></b> <i>for potatoes</i> <i>art. nr. 4510</i>		Not applied because of Covid 19 pandemic		

Figure 1: Treatments



## Harvest

As the Covid lockdown restrictions eased we were allowed to visit the farm to take samples from each plot for assessment. This was carried out just prior to harvest using the following standard method.

Two three metre rows of potatoes running immediately parallel to each other were selected by taking the third and fourth rows from the central tramline in each of the three plots. This gave a total length of six metres in each plot with a seedbed of 12 plants. The potatoes from each of the three seedbeds were then washed, weighed and graded into three size ranges as follows - less than 45mm, 45 to 65mm and over 65mm

## Results

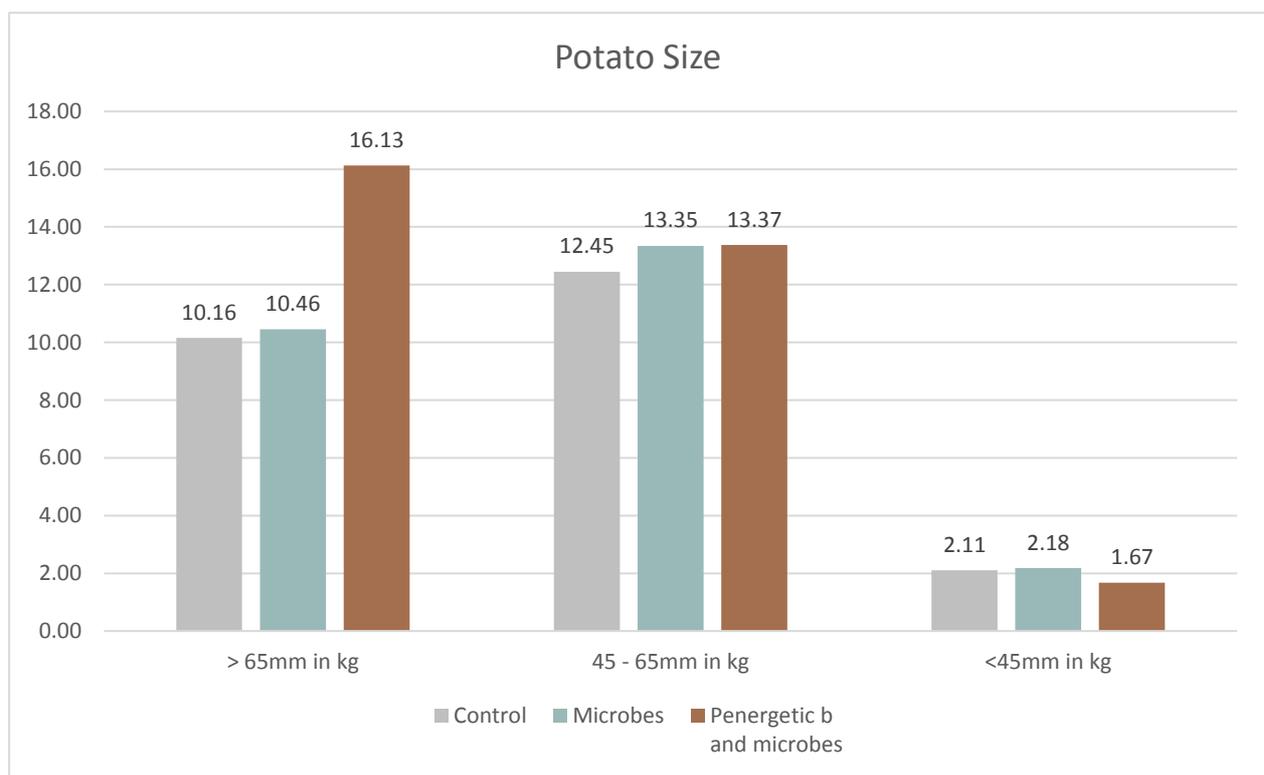


Figure 2: Potato Size



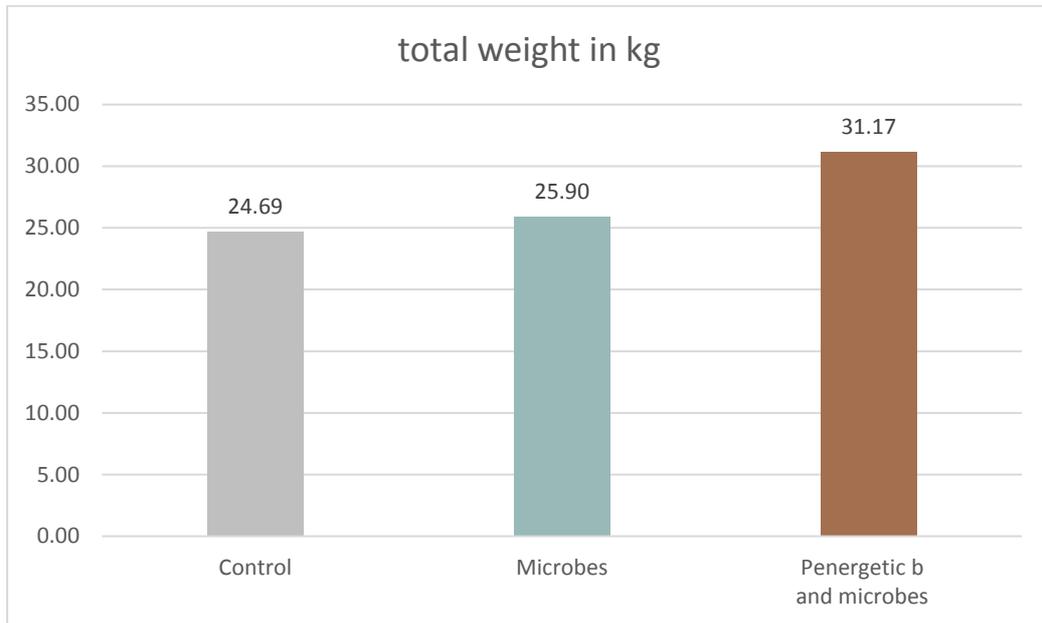


Figure 3: Potato total weight

control                      microbes                      penergetic b and microbes



Figure 4: Potato comparison

## Pest and Disease

There were no noticeable problems with health of the crop in any of the three plots used in this trial

## Benefits - Yield

As only 12 plants were assessed from each plot this trial can only be considered as a snapshot. However, the figures are very encouraging. The penergetic plus microbes' plot produced just over 1kg extra per linear metre compared to the control plot. Each hectare has 10,000 linear metres, so if we assume an improvement of 1kg per linear metre the increase over each hectare would be 10,000kg (10 tonnes).

## Benefits - Quality

The increased yield in the potatoes in the penergetic b plus microbes group also showed an improvement in quality with less potatoes in the "less than 45mm" size which are mostly used as animal feed and an increase in the premium "65mm plus" size which are sold as baking potatoes.

## Benefits - Financial

At the time of harvest the UK Agriculture and Horticulture Development Board (AHDB) median price for Maris Piper potatoes was 150 GBP per ton. However, the market price can vary greatly according to supply and demand. Depending on each individual situation some growers can receive lower payments sometimes as low 60 GBP per ton. The cost per hectare was 30GBP for the microbes and 9 GBP for the penergetic b. However, it is planned to apply penergetic b at 500g per hectare in the next trial making it 10 GBP per hectare. In all cases this gives a cost benefit to the farmer, but this varies depending on each individual situation and end price.



## Results and photos of the fields



*Figure 6: Seedbed in the penergetic plot*



*Figure 5: The trial field*