

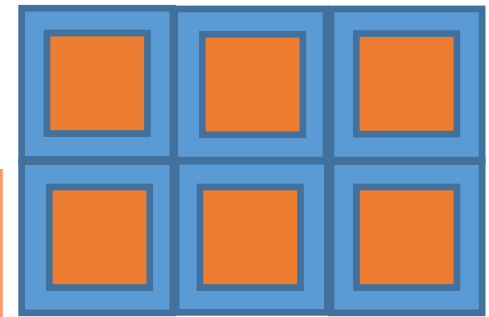
Self-testing of biostimulants

A short manual for farmers

- Biostimulants are usually tested under certain circumstances which likely are different from your crop, including crop species, soil type, climate and moisture conditions.
- Even if the label says that the biostimulant is effective on a certain crop, then still it is advisable to test it under your own specific conditions.
- You may think, no harm no foul:
 - Indeed, you can try it for the full field. If the amount of work is limited then in general there are no risks. But you will not really know if the biostimulant has the positive effects claimed since you cannot compare the results with an untreated field.
 - Calculate the costs needed to apply the biostimulant and the problems you want to solve.
- The best approach is to first try out the biostimulant in a proper experimental design.

Testing of biostimulants

- Keep a written diary.
- Write down which effects of the biostimulants you expect. How can you measure these effects?
- Check if the expected effects of the biostimulant are on the label of the product.
- Select a representative part of the field for the experiment.
- Split the selected part in to 6 plots.
- Place markers around the 15x15 m plots and the centre 10x10 m plots.
- Carry out the treatments.
- Perform the planned observations.
- Look at the results. If you are happy, continue applying the biostimulant.



The experimental field must be homogenous and representative for the whole field

Create large margins. E.g., make 15x15 m plots (blue/orange) on which the treatments are carried out and do the observation in the central 10x10 m fields (orange).

3 plots for the control, 3 for the treatment.

Give numbers to the plots. Treatments and controls alternate if the plots are situated next to each other. If the plots are in a square, then draw lots to determine which plots receive the treatment.

It is essential that the person who performs the observations does **not** know which plots have been treated with the biostimulant.

The controls receive everything except the biostimulant. This can be, for example, treatment with water.

Drawing lots: prepare 6 identical pieces of paper. On 3 of them "control" is written, on 3 other "treatment". Then put them in a container and draw the lots. The first draw is the treatment that plot 1 will receive, etc.

Further advice

- Work together in study clubs to exchange data.
- There are many advisors who can help you; look after independent advisors.

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Background of field testing

- Testing of biostimulants on your own field is important because biostimulant effects are known to depend on local circumstances.
- To perform a field test is not easy and brings about a lot of work. But if you want to do it, do it according the basic rules I advice here.
- The description given here is needed to identify useful and robust effects of biostimulants. If you find no effects, then they may still be present, but they are then not very large. Smaller effects can be shown e.g. by increasing the amount of repetitions or by performing more measurements.
- If you want to study more biostimulants, or one biostimulant at more doses, increase the number of plots with 3 for each additional treatment.
- It can be hard to find back the markings that indicate the plot corners, especially if machines are driving over the fields.
- It sounds a bit foolish, but it really is essential that the observer of the effects does not know about which field received which treatment. It is commonly known that observers can be affected unconsciously by this knowlegde.
- There are many (independent) advisors that can assist you.
- Work together in study clubs to exchange experiences.