

Picture card tool for holistic planning in organic plant production

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Implications

To make it easier to optimize organic plant production a new tool for strategic farm planning and improving farm management has been developed. The tool is based on picture cards with 37 recommendations on how to secure nutrients and control weeds to realize high yields. The recommendation cards are supplemented with other cards to make it possible to use the cards as a "management game".

The new tool is meant as an important help for the advisory service for organic farmers and has its main force in activating the farmer in analyzing the different options on his or her organic farm in relation to actual situation and his/her interests and priorities.

Compared to traditional methods of written or oral advise the picture tool inspire the farmer to give more attention to the recommendations when he/she "plays" the management game where each technical recommendation has to be evaluated on its potential impact and pay off in the actual situation at the farm (including the farmers affinities to follow the recommendations in practice).

If implemented in the organic advisory service the tool will have the ability to raise the yields and the economic performance in organic plant production. The farmer will have a better overview over the many actions that influence crop yields and he will have an efficient tool to decide the most appropriate actions and to maintain and develop his/her plan of actions.

Background and objectives

It is often difficult to maintain sufficiently high yields in organic plant production to secure profitable organic production and much research has been done to find the best ways to optimize nutrient supply and weed control for organic crops. The necessary actions are complicated compared to conventional plant growing by involving crop rotation, manuring strategy, soil tillage and weed control, which call for a necessarily more holistic strategic planning. Therefore the farmers ability to overview the many aspects and possible actions and to select the most appropriate ones to implement at the farm is of greatest importance.

A Danish multidisciplinary research project, HighCrop, has addressed these challenges by introduction of some basic principles of improved management of nitrogen (N) supply in catch crops, green manures, crop residues and livestock manure, and better management of weeds and has developed management tools to overcome the farmer's knowledge gaps on these issues. The picture-based tool is one of these tools; the other is an Excel based program to estimate the development in yields and weed population as a response to different choices regarding crop rotations and manure applications.

Key results and discussion

The picture card tool has been tested as prototype together with organic farmers and advisors. The reactions are generally positive and several suggestions have been made how to use the tool and how it can be further developed. It has thus been suggested that the tool will be very useful and inspiring to use in experience-exchange groups.

The tool should be further tested in real advising situations and with experience-exchange groups to evaluate the potentials of the tool.

The idea with "management games" could also be of interest in the education of young farmers.

How work was carried out?

In the HighCrop project the researchers developed a list of basic principles for robust organic arable farming systems, and for each of these principles a list of potential actions was formed (Noe et al. 2013). Each of these suggested actions were translated into picture cards that form the core of a "management game", where the manager places each card in a frame with effect on better yields at the vertical direction and the difficulty to implement the actions on the horizontal direction (fig 1). This process gives the manager a unique set up for considering how he or she will prioritize the possible actions.

Fig 1. Elements in the "management game".



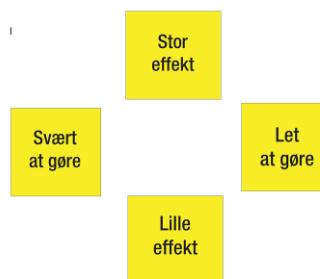
Recommendation cards



Cards to indicate positions



Cards describing important conditions



Cards to build the effect/difficulty frame

References

- Fog, Erik (2012) Billeder baner vejen for nyttige forandringer. [Pictures open the way for useful innovations.] Videncentret for Landbrug, Økologi. [<http://orgprints.org/21369/>]
- Fog, Erik and Flensborg, Ingelise (2012) Rapport om afprøvning af billedbaseret rådgivningsredskab til rådgivning om økologisk planteproduktion. [Report on testing of a picture based tool for advising in organic crop production.] Knowledge Centre for Agriculture, Organic Farming. [<http://orgprints.org/21366/>]
- Noe E, Sørensen P, Melander B, Olesen JE and Fog E (2013) Barriers for developing more robust organic arable farming systems in practice. Submitted to this NJF seminar.