



SEFerSol Maraîchage Biologique

Innovation in combined weed and soil fertility management strategies in organic market gardening

In organic farming, the combined management of weed control and soil fertility is an essential issue. These two factors highly influence the economical performances of cultivation systems and are deeply linked. The eight partners gathered in the french SEFerSol¹ Organic Market Gardening project suggest improving two innovating strategies (SdC) of combined weed control and soil fertility management, at a very low level of inputs, and comparing them to a more classical strategy of organic market gardening so as to assess their overall performances : SdC maximizing the use of green manure (ENGRAIS VERT MAX), SdC adjusting soil conservation agriculture (CONSERVATION DES SOLS)

After three first years of trial when the learning of innovating farming systems was central (2015-2017), the project, in its second phase (2018-2023) revolves around three actions :

1/ A system trial carried out in Wintzenheim (Alsace) within the EPLEFPA Les Sillons de Haute Alsace where three tested cultivation systems are conducted side by side. Their follow-up is carried out thanks to a set of indicators which are used for the management and/or the analysis of the results. The collected data are characteristic of SdC impacts on the control of weeds and other bioagressors, on the maintenance of soil fertility and more globally on the agroecological performances (technical, social and economic results, environmental impact, self-sufficiency towards inputs).

2/ An assessment work of the performances of the cultivation systems. It uses an assesment method which is designed for the project. Il mixes -for more exhaustiveness and resistance- several tools : statistical analysis, graphics and scoreboards of

indicators comparing the results obtained for the innovating SdC to those of the reference SdC. The aim of the assessment is first and foremost to determine whether the innovating SdC achieve their objectives.

3/ Producing and spreading references in relation with the market gardening strategies used, for market gardeners and future market gardeners : technical references (technical levers and conditions for implementation, crop management techniques, adaptation of the tools, succession of crops including covercrops), economic and social references (economic results over several years, implications in terms of investments in adapted tools, social consequences on working time and difficult working conditions, self-sufficiency towards inputs), reflection support tool (decision rules and decisional schemes taking weedi management and soil fertility into account), environmental performances.

The project is primarily aimed at market gardeners in activity and in training. The promotion of the results is planned thanks to a dedicated website (polemaraichage.com) and those of the partners. Visits and demonstrations will be organized on the site of trial, at least twice a year. The results will be spread within the DEPHY networks, networks of technical advice and agricultural development and market gardening training (seminars and shows for professionals), thanks to technical and scientific articles in specialized magazines. Eventually, the value of the results will be increased within full-time and continuing education.

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¹ SEFerSol : Stratégies innovantes d'Entretien de la Fertilité du Sol en maraîchage biologique