

Feeding Hungry Soils -

Trialling tools, techniques and systems for building organic matter in small market gardens in subtropical Australia by increasing cover cropping and reducing tillage, without herbicide.

Steve Burgess, Dagon, Q.

The last quarter of a century has seen the development of effective techniques and equipment for broadacre vegetable production in fixed bed systems, planting into special-purpose cover crops grown in situ. In subtropical and tropical Australia these systems generally rely on the use of herbicides for terminating the cover crop. In temperate climates, the last decade or so has also seen the development and adoption of broadacre pasture cropping techniques, and *non-herbicide based* termination of cover crops in large scale annual vegetable production, both in Australia and overseas.

There is a growing consumer demand for locally grown 'organic' produce in subtropical Australia, usually grown in small market gardens supplying directly to the consumer or retail outlets. Soil organic matter cycles at a high rate in these areas, and growers supplying this market are usually involved in year-round production. Constant 'feeding' of these 'hungry' soils under these conditions is essential to maintain soil and crop health. Weed control is also a major issue in these systems, because of the high labour costs on non-herbicide techniques, and the damaging effect of repeated cultivation on soil structure and health.

This project will encourage a group of small market gardeners in Queensland's Mary Valley to experiment with increasing their use of cover crops and growing organic matter in-situ, and attempt to develop methods for terminating cover crops in a subtropical climate without the use of herbicide. With regard to weed control, growers will also be encouraged to experiment with techniques that reduce the tillage required for weed control, such as occultation of beds with silage tarps and steam/flame weeding. We will set up a small mobile 'library' of specific machinery and implements that will be shared between participating growers for experimentation.

I propose to visit leading practical proponents of these techniques in Australia and overseas, and bring back whatever relevant information I can to help with developing tools, techniques and systems that will work for small market gardeners in our area. In particular, I will be looking for ways to adapt the concepts behind well-developed broadacre minimum till and trash handling implements to work with small garden-scale equipment such as walking tractors.

What we learn from this Action Research project will be shared at a number of local field days, a web blog which is regularly updated during the life of the project and via 3 reports to the federal department of Agriculture and Water Resources. Practical aspects of the project commenced in January 2017, and will wind up in August 2018. After this date the library of shared equipment developed during the project will then be handed over to a local not-for-profit organization to be made available to local growers.

For more information about the project, contact me directly on 0428 843 749, or email to wurraglen@gmail.com. Regular updates about the project are available online at <https://steveslandcareproject.wordpress.com>

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