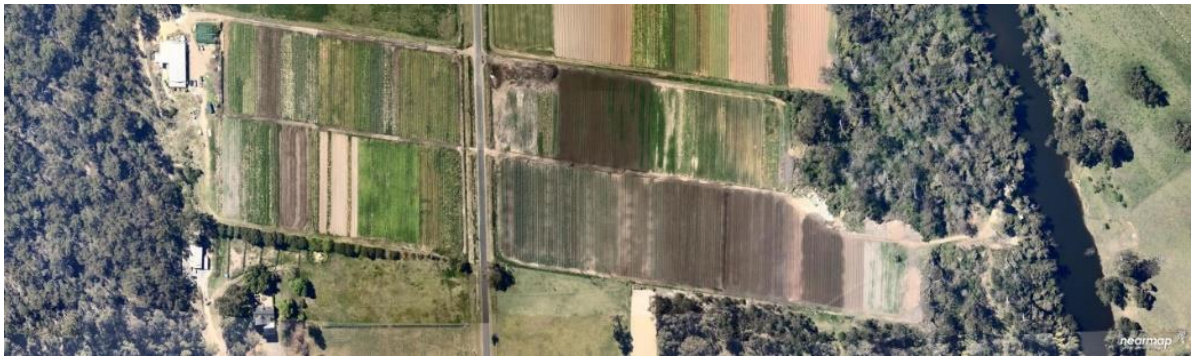
Centre for Organic Research & Education

Case Study

Sustainable Amendments For Agriculture (SAFA) program in NSW

Farm Background and History

Joe and Karen Bugeja have been vegetable farming in Western Sydney since 1989 and their family have been farming the same land since the 1970's. The farms are situated along Bents Basin Rd, Wallacia, New South Wales on the banks of the Nepean River from which irrigation water is sourced.



Picture 1. Aerial view of Joe and Karen Bugeja's farm at Wallacia, NSW

Over time they adjusted their farm management practices to maximise farm output, however they gradually noticed a decline on productivity and an increase in pests and diseases that led to increasing plant mortalities. Further investigation by Department of Primary Industries identified their soils lacked organic matter and had imbalances in plant nutrients and virtually no evident biological activity. Blue-Green algae blooms were also common along the river during this time due to the rivers increased nutrient levels. With increasing costs and diminishing returns the Bugeja's seriously considered walking away from farming.

Trial with recycled organic mulch

In late 2011 Joe and Karen Bugeja were introduced to the Sustainable Amendments for Agriculture (SAFA) Program being conducted by The Centre for Organic Research & Education (CORE). This program provided them with affordable amendment materials and advice on how to integrate these materials into their farming system. Following a period of initial successful trials, the Bugeja's converted their entire farms over to using a specially engineered amendment that is incorporated into the soil after each crop is harvested. Gradual reductions in chemical usage resulted in corresponding benefits – less water (with corresponding less energy used, less chemicals, better yields, less mortalities, less nutrient run-off into nearby river, less tilling effort required (saving fuel), less plant stress in hot summers. (See table)

Reduction rate by Mid 2014

Input	% Saving
Fertiliser	95%
Water	50%
Fungicide	50%
Insecticide	50%
Weedicide	
Fuel Saving from less tilling	20%
Electricity Saving from less irrigation	50%

Table 1. Percent reductions in inputs at Joe and Karen Bugeja's farm, Wallacia, NSW

Picture 2. Delivery of Reactive Filter Amendment, incorporation into soil & Joe amongst his crop

Full Integration into farming system

Following the trial Joe and Karen Bugeja converted their whole farm over to using the amendment (referred to as Reactive Filter Amendment) supplied by CORE member STAR Water Solutions Pty Ltd. The result has been a total transformation in the viability of the farming enterprise and the quality of the produce. One additional observation from Joe and Karen's children has been the identification of earthworms in the soil that had not previously been found on the farm since its establishment. Joe believes the worms have helped "cultivate" the soil which has resulted in easier and reduced frequency of tilling saving on expensive tractor fuel.

Testimonial and Quotes

"In addition to reduced run-off, the system has significantly improved our soil health, increased yields and dramatically reduced our chemical input costs, particularly with the issues around chemical herbicides at the moment" – Joe Bugeja from Wallacia said.

The SAFA program is now helping nearly one hundred farms along the Hawkesbury-Nepean River Catchment achieve the same results as Joe and Karen while reducing the impacts on the river system. No major outbreaks of Blue-Green Algae have been observed in the river near the participating farms since the introduction of the program. For more information about the SAFA program and other CORE activities, visit www.core.asn.au.