

Summary of Resources and Communication

Integrated Crop Protection
PROTECTING CROPS



Soil Wealth
NURTURING CROPS

Handy hints and where to find useful information May 2014 - November 2017

Overview

This guide summarises useful information developed by the Soil Wealth and Integrated Crop Protection (ICP) projects from 2014-2017, and where to find it. These resources are relevant to all major vegetable growing regions in Australia. The resources developed includes fact sheets (51), case studies (12), videos and apps (36), e-newsletters (32 editions), as well as demonstration site information. The main topics covered by these resources include crop management, pest and disease management, and soil, nutrition and compost.

All the resources in this guide can be found on the project website at www.soilwealth.com.au.

Fact sheets

The fact sheets developed covered a range of issues relating to the needs of the industry, which are outlined in Tables 1, 2 and 3. Information is provided in an easy to understand format that is accessible to growers and industry service providers. The 51 fact sheets are arranged by topic, each with a brief summary and link to the full version.



Table 1: Crop management fact sheets

FACT SHEET	SUMMARY	ACCESS
Use a Partial Budget to Assess Practice Change on Vegetable Farms	This fact sheet provides information on assessing changes made in farming enterprises through conducting a partial budget. It addresses additional revenue and reduced revenue, and additional costs and reduced costs to determine a change in net profit.	http://www.soilwealth.com.au/imagesDB/news/Partialbudgetingfactsheet_FINAL.pdf
Reducing Transplant Shock in Lettuce	Information regarding what transplant shock is, and the precautionary steps to take to avoid it.	http://www.soilwealth.com.au/imagesDB/news/Reducingtransplantshockinlettuce.pdf
Management of Blindness in Lettuce Seedlings	This fact sheet provides information on the potential problems related with blindness in lettuce seedlings, what it looks like, what causes it and how to control it.	http://www.soilwealth.com.au/imagesDB/news/Managementofblindnessinlettuceseedlings.pdf
Pre-Harvest Effects on the Quality of Babyleaf Spinach	A fact sheet that provides information on how to best extend the shelf-life of babyleaf spinach, by addressing pre-harvest factors.	http://www.soilwealth.com.au/imagesDB/news/ICP_PreHarvestBabyleaf_web.pdf

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FACT SHEET	SUMMARY	ACCESS
Pre-Harvest Effects on Lettuce Quality	Information regarding pre-harvest management to address key quality attributes in lettuce varieties.	http://www.soilwealth.com.au/imagesDB/news/ICP_PreHarvestLettuce_web.pdf
Blankets for Vegetables: Using Frost Cloth to Protect Plants from Weather	This fact sheet provides information on the use of floating row covers to protect against weather extremities, as well as how to implement it into a farming system.	http://www.soilwealth.com.au/imagesDB/news/ICP_BlanketsforVegetables_web.pdf
Weed Management in Vegetables	A fact sheet that provides information on the economic impact of weeds, effectiveness and affordability of various control methods, and information regarding the implementation of an Integrated Weed Management (IWM) program.	http://www.soilwealth.com.au/imagesDB/news/Weedmgtinvegetables_FINAL.pdf
Internal Rot in Capsicum: Causes and Control	An analysis of the contributing factors to and varying control methods for internal rot in capsicum.	http://www.soilwealth.com.au/imagesDB/news/ICP_CapsicumRot_FINAL_Email.pdf



Table 2: Pest and disease management fact sheets

FACT SHEET	SUMMARY	ACCESS
Biocontrol Products in Australia	Overview of specific biocontrol products and biopesticides, including developments, current status, challenges, advantages and disadvantages.	http://www.soilwealth.com.au/resources/fact-sheets/pest-and-disease-management/biocontrol-products-in-australia/
Damping Off in Spinach	This fact sheet provides information on the causes of damping off, the signs and symptoms to observe, and the management techniques that can be implemented to help control the various pathogens that lead to damping off.	http://www.soilwealth.com.au/imagesDB/news/SWICP_Dampingoffinspinach_Factsheet_Mar2017_Updatedfooter_FINAL.pdf
Pythium in Carrots: Cavity Spot and Forking in Carrots	This fact sheet contains an in-depth analysis of the two Pythium species that cause the majority forking and cavity spots of carrots in Australia. It also provides information regarding the factors affecting cavity spot development and management approaches for control.	http://www.soilwealth.com.au/imagesDB/news/VG15010factsheet-Pythiumincarrots_May2017.pdf
Adjuvants: a Guide to Oils, Surfactants and Other Additives	Information regarding how adjuvants work, what types are available, and recommendations regarding which ones to use.	http://www.soilwealth.com.au/imagesDB/news/ICP_Adjuvants-Aguidetooilssurfactantsandotheradditives_1.pdf
Managing Onion Maggot in Vegetables	An overview of the damage caused by onion maggots, information regarding its life cycle and various control methods to manage populations.	http://www.soilwealth.com.au/imagesDB/news/ICP_ManagingOnionMaggot_FINAL.pdf

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FACT SHEET	SUMMARY	ACCESS
Brassica Whitefly Control in Vegetables	A comprehensive guide that assesses the damage caused by, the ecology of, and management practices involved with, controlling brassica whitefly in vegetable crops.	http://www.soilwealth.com.au/imagesDB/news/ICP_Brassicawhiteflycontrol_2.pdf
How Can I Control Pests? Options for Controlling High Priority Pests in Capsicums and Chillies	A fact sheet that provides information on varied control methods for high priority pests in capsicums and chillies.	http://www.soilwealth.com.au/imagesDB/news/PeppersFINAL_28012016_1.pdf
How Can I Control Pests? Options for Controlling High Priority Pests in Lettuce	A fact sheet that provides information on varied control methods for high priority pests in lettuce.	http://www.soilwealth.com.au/imagesDB/news/LettuceFINAL_28012016.pdf
How Can I Control Pests? Options for Controlling High Priority Pests in Cucumbers	A fact sheet that provides information on varied control methods for high priority pests in cucumbers.	http://www.soilwealth.com.au/imagesDB/news/CucumberFINAL_28012016.pdf
How Can I Control Pests? Options for Controlling High Priority Pests in Celery	A fact sheet that provides information on varied control methods for high priority pests in celery.	http://www.soilwealth.com.au/imagesDB/news/CeleryFINAL_28012016.pdf
How Can I Control Pests? Options for Controlling High Priority Pests in Carrots	A fact sheet that provides information on varied control methods for high priority pests in carrots.	http://www.soilwealth.com.au/imagesDB/news/CarrotsFINAL_28012016.pdf
How Can I Control Pests? Options for Controlling High Priority Pests in brassica	A fact sheet that provides information on varied control methods for high priority pests in brassica vegetables.	http://www.soilwealth.com.au/imagesDB/news/BrassicaFINAL_28012016.pdf
How Can I Control Pests? Options for Controlling High Priority Pests in brassica leafy vegetables	A fact sheet that provides information on varied control methods for high priority pests in brassica leafy vegetables.	http://www.soilwealth.com.au/imagesDB/news/BrassicaleafyFINAL_09022016.pdf
Management of Lettuce Anthracnose	Guidelines on how to effectively manage the threat of anthracnose in lettuce farming. Information includes a range of cultural and chemical controls.	http://www.soilwealth.com.au/imagesDB/news/Management-of-lettuce-anthracnose.pdf
Managing Insect Contaminants in Processed Leafy Vegetables: a Best Practice Guide	This fact sheet contains information on the best practices to administer to avoid insect contamination in leafy vegetables.	http://www.soilwealth.com.au/imagesDB/news/ICP_BestPractice_250815.pdf
Managing Pesticide Resistance	This fact sheet provides information on what pesticide resistance is, how to monitor it, and the steps to take to avoid it.	http://www.soilwealth.com.au/imagesDB/news/ManagingPesticideResistance2015.pdf
Alternatives to Metham Sodium	A fact sheet that explores the alternatives to the industry standard soil fumigant, metham sodium (MS). It explains the need for an alternative and the potential environmental and human health impacts MS can have.	http://www.soilwealth.com.au/imagesDB/news/MethamSodium.pdf
Spray Application Basics	This fact sheet outlines the appropriate methods involved in chemical application to help maximise the amount of chemical reaching the plant and help minimise the amount lost in the process.	http://www.soilwealth.com.au/imagesDB/news/SprayApplicationBasics_Mar2015.pdf
Mega Pests: The Basics of Protecting your Crops	This fact sheet contains information regarding adoption of an ICP program, the key components of an ICP program as well as information on other crop management options available.	http://www.soilwealth.com.au/imagesDB/news/MegaPests-Thebasicsofprotectingyourcrops2015_2.pdf



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FACT SHEET	SUMMARY	ACCESS
Mega Pests: Managing Major Chewing and Biting Insects	A fact sheet that provides information on controlling corn earworm, native budworm and diamondback moth with beneficial organisms and biopesticides.	http://www.soilwealth.com.au/imagesDB/news/MegaPestsChewingandBiting2015.pdf
Mega Pests: Managing Sucking Pests	This fact sheet covers a range of issues regarding the control of sucking pests, including the use of predators and parasitoids.	http://www.soilwealth.com.au/imagesDB/news/MegaPestsSuckingPests2015.pdf
Mega Pests: Managing Foliar Diseases	This fact sheet covers a range of issues relating to the management of foliar diseases including: the use of resistant varieties, irrigation scheduling and farm sanitation.	http://www.soilwealth.com.au/imagesDB/news/MegaPestsManagingFoliarDiseases2015.pdf
Mega Pests: Managing Soilborne Diseases	This fact sheet provides information on managing clubroot, Pythium, fusarium, rhizoctonia and sclerotinia.	http://www.soilwealth.com.au/imagesDB/news/Megapests_Soilbornediseases2015.pdf



Table 3: Soil, nutrition and compost fact sheets

FACT SHEET	SUMMARY	ACCESS
Making the Most of your Nitrogen	This fact sheet provides information on the need for nitrogen application, how it can improve vegetables farming systems, and the correct applications to administer to increase production and reduce leaching and run-off.	http://www.soilwealth.com.au/imagesDB/news/SW_MakingthemostofNitrogen_FINAL.pdf
Managing Cover Crop Residues in Vegetable Production	A fact sheet that outlines the three key factors in managing crop residues in vegetable production: cover crop chemistry, how it is terminated, and tillage.	http://www.soilwealth.com.au/imagesDB/news/ManagingCoverCropResiduesSWICP.pdf
Soil Testing and Interpretation for Vegetable Crops	This comprehensive guide provides a wide range of information on soil testing including: the reasons to test, choosing the right testing service, and Interpreting tests.	http://www.soilwealth.com.au/imagesDB/news/SW_SoilTestInterpretation_FINAL.pdf
Forthside Demonstration Site: Soil Amendments on Vegetable Crops	This fact sheet provides information on a three-year trial on the benefits of pyrethrum marc as a soil conditioner on a range of horticultural crops.	http://www.soilwealth.com.au/imagesDB/news/SW_ForthsideDemonstrationSiteFactSheet.pdf
From Health to Wealth: Looking after Soils for Vegetable Production	A fact sheet that shows what healthy soils are, why they are important and how to create them.	http://www.soilwealth.com.au/imagesDB/news/SW_FromHealthtoWealth.pdf
Nitrous Oxide Emissions from Vegetable Soils: What's all the fuss about?	This fact sheet shows the harmful effects nitrous oxide has on the environment and how to reduce and manage emissions.	http://www.soilwealth.com.au/imagesDB/news/SWNitrousoxideemissionsfromvegetablesoils.pdf

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FACT SHEET	SUMMARY	ACCESS
Using Compost Safely: A Guide for the use of Recycled Organics in Horticulture	A guide that outlines the materials and methods behind using compost in a safe manner.	http://www.soilwealth.com.au/imagesDB/news/AHRCompost_growersV3.pdf
Safe Compost for Fruit and Vegetables: A Guide for the Supply of Recycled Organics to Fresh Produce	This guide describes how the producers of recycled organic products can meet the requirements of food safety programs.	http://www.soilwealth.com.au/imagesDB/news/AHRCompost_producers.pdf
Anhydrous Ammonia for Vegetable Crops: Could it be a Viable Proposition?	This fact sheet provides a wide range of information on anhydrous ammonia and the range of benefits it provides when incorporated into a vegetable cropping system.	http://www.soilwealth.com.au/imagesDB/wysiwyg/AnhydrousAmmoniafactsheetFINAL.pdf
Summer Cover Crops	This brief guide matches the main aims of soil management in farming systems with specific summer crops.	http://www.soilwealth.com.au/imagesDB/news/SummerCoverCrops_July2016.pdf
Calcium Cyanamide use in vegetables	Calcium cyanamide, also known as nitrolime, has been used as slow release nitrogen / calcium fertiliser with liming effect for over 100 years. Because of its negative effect on many soil borne diseases it is now often applied to prevent yield and quality losses during increasingly tight crop rotations.	http://www.soilwealth.com.au/resources/fact-sheets/soil-nutrition-and-compost/calcium-cyanamide-use-in-vegetables/
Silicon for Crop Health	This fact sheet outlines the benefit of silicon application on crop health and pest and disease resistance.	http://www.soilwealth.com.au/imagesDB/news/ICP_Siliconforcrophealth_FINAL.pdf
Nutrient Element Functions in Vegetable Crops	This fact sheet provides a comprehensive guide to the functions, methods of uptake and deficiency symptoms of various nutrients in vegetable crops.	http://www.soilwealth.com.au/imagesDB/news/NutrientElement_July2016.pdf
Taking Soil Samples	This fact sheet outlines the materials and methods involved, and the correct way to analyse soil samples.	http://www.soilwealth.com.au/imagesDB/news/SW_Takingsoilsamples_July2016.pdf
Winter Cover Crops	This brief guide matches the main aims of soil management in farming systems with specific winter crops.	http://www.soilwealth.com.au/imagesDB/news/WinterCoverCrops_July2016.pdf
Carbon Storage in Vegetable Soils	This fact sheet summarises the importance of soil carbon, as well as management techniques involved in mitigating or sequestering it.	http://www.soilwealth.com.au/imagesDB/news/SW_SoilcarbonfactsheetWEB.pdf
Erosion: How to Protect Your Soil	This fact sheet provides information on managing soil erosion as well as addressing the two key areas that cause it: wind and water.	http://www.soilwealth.com.au/imagesDB/news/SW_SoilErosionv3.pdf
Biofumigation	A fact sheet that outlines common biofumigant crops, the benefits of using them and how to manage them.	http://www.soilwealth.com.au/imagesDB/news/SW-ICP-biofumigation-factsheet-150216-FINAL.pdf
Reduced Till in Vegetable Production	This fact sheet contains information on the benefits and challenges with implementing a reduced till system. It includes a summary of a case study of a trial conducted in Cowra NSW, as well as links to videos that describe the reasoning behind reduced till farming systems.	http://www.soilwealth.com.au/imagesDB/news/RedtillSW12150203.pdf
Quick Guide to Farm Nitrogen	This guide contains information regarding the 4R principle of applying nitrogen fertilisers: right source, right amount, right place and right time.	http://www.soilwealth.com.au/imagesDB/news/Nitrogen150213.pdf

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Case studies

The following 12 case studies provide growers and industry professionals practical insights on cover crops, IPM and compost management. Each of the case studies listed in Table 4 are from a Soil Wealth and ICP demonstration sites and contain first-hand experience from growers. The table contains a brief summary of each case study and link to the full version.



Table 4: Case studies

CASE STUDY	SUMMARY	ACCESS
Three Vital Practice Changes at Rob Hinrichsen's Kalfresh: A Case Study	Provides insights into some of the main changes involving controlled traffic, cover crops and compost at the Kalfresh demonstration site in Queensland.	http://www.soilwealth.com.au/resources/articles-publications-and-case-studies/three-vital-practice-changes-at-rob-hinrichsens-kalfresh-a-case-study/
Koo Wee Rup Demonstration Site: Practice Change Case Study	Provides an overview and lessons learnt from trialling different cover crops at the Schreurs & Sons demonstration site in Cora Lynn, Victoria.	http://www.soilwealth.com.au/resources/articles-publications-and-case-studies/koo-wee-rup-demonstration-site-practice-change-case-study/
Mt Barker Demonstration Site: Practice Change Case Study	Presents insights and lessons from trialling different cover crops and IPM at the Eastbrook Vegetable Farms demonstration site in Mt Barker in South Australia.	http://www.soilwealth.com.au/resources/articles-publications-and-case-studies/mt-barker-demonstration-site-practice-change-case-study/
Reducing Tillage in Vegetable Crops: Is It Worthwhile?	Outlines the pros and cons of reducing the intensity of cultivation in vegetable production systems. It is based on lessons learnt from three demonstration sites under the projects.	http://www.soilwealth.com.au/resources/articles-publications-and-case-studies/reducing-tillage-in-vegetable-crops-is-it-worthwhile/
What is Compost Worth? Using Compost in Australian Vegetable Systems	This case study outlines the economic considerations when using compost in vegetable production systems. It outlines the costs and benefits that were determined through trials conducted on demonstration sites over Western Australia, NSW and Queensland, from 2014 to 2016.	http://www.soilwealth.com.au/images/DB/news/ICP_SW_Composteconomics_v3.pdf
What is a Cover Crop Worth? Cover Crops in Australian Vegetable Systems	This case study outlines economic considerations when using cover crops in vegetable systems. It includes information on various case studies conducted throughout Australia as well as information on what cover crops are and how best to use them to maximise profit.	http://www.soilwealth.com.au/images/DB/news/Covercropseconomics_Mar2017.pdf

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CASE STUDY	SUMMARY	ACCESS
Implementing IPM on farm – Experiences from Leading Growers: Houston's Farms, Tasmania	This case study outlines the challenges experienced by leafy salad producer Houston's farm after the detection of the Lettuce Aphid in 2004. Houston's Farms were unable to export produce, and looked to IPM as an option to control the insect.	http://www.soilwealth.com.au/imagesDB/news/ICP_CaseStudy-IPM-HoustonsFarmsV3.pdf
Implementing IPM on Farm – Experiences from Leading Growers: Jerome Thompson, Werribee South Farm Supplies, Werribee South VIC	This case study showcases Jerome Thompson, Werribee South Farm Supplies CRT branch manager, who supplies agricultural products to approximately 110 vegetable growers in the Werribee South region. It discusses Jerome's observations in changes in approach, challenges and achievements to do with the implementation of IPM programs.	http://www.soilwealth.com.au/imagesDB/news/ICP_IPMCaseStudy_WerribeeSouthFarmSupplies.pdf
Implementing IPM on farm - experiences from leading growers: Daniel Fragapane, Werribee South VIC	Werribee South vegetable grower, Daniel Fragapane, runs a 42 hectare farm growing cauliflowers and broccoli for supermarket chain ALDI. He adopted IPM on his Werribee South farm following a recommendation from his cousins. Read this practical case study to learn more from leading growers.	http://www.soilwealth.com.au/imagesDB/news/ICP_IPMCaseStudy_DanielFragapane_1.pdf
Implementing IPM on Farm – Experiences from Leading Growers: Peter Schreurs and Son, Devon Meadows VIC	This case study gives an overview of the adoption of an IPM program on the Schreurs farm south east of Melbourne. After first discovering two-spotted mite in their leek and parsnip crop in the early 90's, the Schreurs tried a range of chemicals controls without much success. In 2000, they implemented an IPM program and haven't looked back.	http://www.soilwealth.com.au/imagesDB/news/ICP_IPMcasestudy_PeterSchreursandSonsFINAL.pdf
Implementing IPM on farm - experiences from leading growers: Schreurs and Sons, Clyde VIC	Schreurs and Sons are one of the largest celery producers in Australia. Production of celery by the family business has relied on IPM for well over a decade. The original drivers for exploring an IPM option were borne out of problems relying on a pesticide-based strategy. Find out more by reading this case study.	http://www.soilwealth.com.au/imagesDB/news/ImplementingIPM onfarmexperiencesfromleadinggrowers-SchreursandSons_1.pdf
Soil and Plant Health Benefits from using Compost: A Long-Term Case Study on Baldvis Farms	This case study provides a long-term perspective on the benefits of integrating compost into a vegetable farm. Whilst providing information on materials, methods and results of the long-term trial, it also provides information on what to ask your supplier, things to consider when implementing it into your farming system, and the overall value it's likely to have on your farm.	http://www.soilwealth.com.au/imagesDB/news/ICP_SW_BaldivisFarmCompostFINALV3.pdf

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Videos and apps

A series of short videos, webinar recordings and apps designed to aid the Australian vegetable industry in plant health and soil management are outlined in Tables 5, 6 and 7. The 36 videos and apps are arranged by topic (crop management, pest and disease management, and soil, nutrition and compost), each with a brief summary and link to the video.



Table 5: Crop management videos and apps

TITLE	SUMMARY	ACCESS
Soil Wealth and ICP Achievements Phase 1	A short video showing the advancements in various projects over the past three years in the horticultural industry.	http://www.soilwealth.com.au /resources/videos-and-apps/soil-wealth-and-icp-achievements-phase-1/
Precision Agriculture Technology in Vegetable Production Systems	A webinar recording that looks at the future of precision agriculture in horticulture sector.	http://www.soilwealth.com.au /resources/videos-and-apps/precision-agriculture-technology-in-vegetable-production-systems-webinar-recording/
Integrated Weed Management for the Australian Vegetable Industry with Dr Paul Kristiansen, Dr Kelvin Montagu and Marc Hinderager	This webinar focusses on strategies used when implementing an integrated weed management program.	http://www.soilwealth.com.au /resources/videos-and-apps/integrated-weed-management-for-the-australian-vegetable-industry-with-dr-paul-kristiansen-dr-kelvin-montagu-and-marc-hinderager-webinar-recording/
Southern Fields Vegetable Farm demonstration site – Experiences from Leading Growers	This short video covers the demonstrations being conducted on Colin Houston's Tasmanian farm.	http://www.soilwealth.com.au /resources/videos-and-apps/southern-fields-vegetable-farm-demonstration-site-experiences-from-leading-growers/
Managing Plant Health and Soils in Vegetables – Experiences from Growers	This video involves conversations with growers about managing plant and soil health through the implementation of integrated crop protection and soil management programs.	http://www.soilwealth.com.au /resources/videos/managing-plant-health-and-soils-in-vegetables-experiences-from-leading-growers/

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Table 6: Pest and disease management videos and apps

TITLE	SUMMARY	ACCESS
Nematodes in Vegetable Soils – Managing the Bad and Good Ones with Dr Sarah Collins	A webinar recording of nematode specialist Dr Sarah Collins outlining the importance of understanding the life cycles of nematodes	http://www.soilwealth.com.au/resources/videos-and-apps/nematodes-in-vegetable-soils-managing-the-bad-and-good-ones-with-dr-sarah-collins-webinar-recording/
Pesticides and insect pest control in vegetables with Dr Siobhan de Little	This webinar covers the risk profile of different modes of action on both insect pests and beneficial species, and how this influences resistance management as well as informing the implementation of IPM.	http://www.soilwealth.com.au/resources/videos-and-apps/pesticides-and-insect-pest-control-in-vegetables-with-dr-siobhan-de-little-webinar-recording/
Green Peach Aphid Resistance Management with Dr Siobhan de Little	A webinar recording looking at the life cycle, damage and potential control methods of green peach aphid.	http://www.soilwealth.com.au/resources/videos-and-apps/green-peach-aphid-resistance-management-with-dr-siobhan-de-little-webinar-recording/
Managing Fruit Fly in Vegetable Crops with Dr Jenny Ekman	A webinar presented by Dr Jenny Ekman on strategies available to growers to manage fruit fly in vegetable crops, including the fruit fly lifecycle, monitoring, use of protein baiting, male annihilation techniques and netting.	http://www.soilwealth.com.au/resources/videos-and-apps/managing-fruit-fly-in-vegetable-crops-with-dr-jenny-ekman-webinar-recording/
Nutrition Management and Plant Disease with Dr Len Tesoriero	A webinar recording looking at nutrition and disease relationships, and the effect nutrients have on soil borne diseases.	http://www.soilwealth.com.au/resources/videos-and-apps/nutrition-management-and-plant-disease-with-dr-len-tesoriero-webinar-recording/
Managing Insect Pests in Greenhouses with Andy Ryland	This webinar focusses on whitefly, thrips and mites and covers a range of IPM techniques.	http://www.soilwealth.com.au/resources/videos-and-apps/managing-insect-pests-in-greenhouses-with-andy-ryland-webinar-recording/
Managing Pesticide Resistance in Vegetable Crops with Dr Paul Horne	This webinar looks at how resistance arises, developing a resistance management strategy, and understanding control options available.	http://www.soilwealth.com.au/resources/videos-and-apps/managing-pesticide-resistance-in-vegetable-crops-with-dr-paul-horne-webinar-recording/
How to control Pythium in vegetable crops with Dr Len Tesoriero	Vegetable pathologist, Dr Len Tesoriero and AHR's Dr Kelvin Montagu, discuss how to manage the soil borne disease Pythium in vegetable crops in this webinar recording.	http://www.soilwealth.com.au/resources/videos-and-apps/how-to-control-pythium-in-vegetable-crops-with-dr-len-tesoriero-webinar-recording/
Pest Management – what are the options? With Dr Paul Horne	This presentation looks at the options for controlling pests in vegetable crops through a range of chemical, cultural and biological options.	http://www.soilwealth.com.au/resources/videos-and-apps/pest-management-what-are-the-options-with-dr-paul-horne-webinar-recording/



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TITLE	SUMMARY	ACCESS
How to manage Sclerotinia in vegetable crops with Dr Len Tesoriero	A webinar on sclerotinia management presented by Dr Len Tesoriero.	http://www.soilwealth.com.au/resources/videos-and-apps/how-to-manage-sclerotinia-in-vegetable-crops-with-dr-len-tesoriero/
Soilborne Disease Master Class for the Vegetable Industry –Experiences from Growers	This short video involves first-hand experience from growers outlining the benefits gained from attending soilborne disease master classes.	http://www.soilwealth.com.au/resources/videos-and-apps/soilborne-disease-master-class-for-the-vegetable-industry-experiences-from-leading-growers/
Veg Pest ID app	Veg Pest ID helps farmers and agricultural professionals identify pests on Australian vegetable crops. Even tricky insects, diseases and disorders can be found with a few taps or keyword search.	http://www.soilwealth.com.au/resources/videos-and-apps/pest-and-disease-identifier-app-veg-pest-id/
Natural control of insect pests in lettuce, Devon Meadows	Vegetable grower Peter Schreurs talks about how he controls insect pests using natural predators.	http://www.soilwealth.com.au /resources/videos/natural-control-of-insect-pests-in-lettuce/
Natural control of insect pests in vegetables, Mornington Peninsula	Vegetable grower Paul Gazzola talks about how he controls insect pests using natural predators.	http://www.soilwealth.com.au /resources/videos/natural-control-of-insect-pests-in-vegetables-mornington-peninsula/
Natural control of insect pests in Broccoli, Werribee	Fresh Select vegetable agronomist Stuart Grigg talks about how he controls insect pests using natural predators.	http://www.soilwealth.com.au /resources/videos/natural-control-of-insect-pests-in-broccoli-werribee/

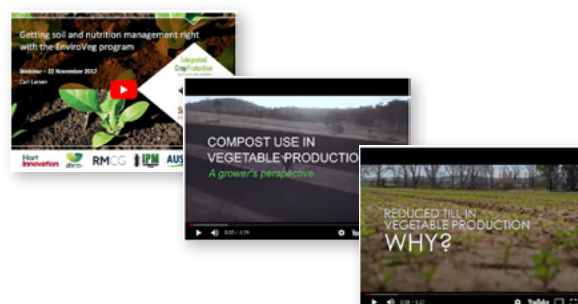


Table 7: Soil, nutrition and compost videos and apps

TITLE	SUMMARY	ACCESS
Getting soil and nutrition management right with the EnviroVeg program	Healthy soil and correct nutrition management is essential to a productive vegetable business and protecting the natural environment. View this informative and interactive webinar to get the latest updates from vegetable industry experts.	http://www.soilwealth.com.au/resources/videos-and-apps/getting-soil-and-nutrition-management-right-with-the-enviroveg-program-webinar-recording
Controlled traffic in vegetable production: A grower's perspective	Hear from Rob Hinrichsen of Kalfresh in QLD about using controlled traffic in commercial vegetable production systems.	http://www.soilwealth.com.au/resources/videos-and-apps/controlled-traffic-in-vegetable-production-a-growers-perspective/
Cover crops in vegetable production: A grower's perspective	This video captures Rob Hinrichsen 's experiences in using different types of cover crops such as tillage radish and sun hemp to achieve different objectives, some of the benefits of using cover crops such as increased soil carbon and crop resilience, as well as providing advice to those starting out.	http://www.soilwealth.com.au/resources/videos-and-apps/cover-crops-in-vegetable-production-a-growers-perspective/



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TITLE	SUMMARY	ACCESS
Compost use in vegetable production: A grower's perspective	Hear from Rob Hinrichsen of Kalfresh in QLD about using compost in commercial vegetable production systems. This video captures Rob's experiences in soil biology, short and long-term compost, the financial implications of using compost, and advice for starting out.	http://www.soilwealth.com.au/resources/videos-and-apps/compost-use-in-vegetable-production-a-growers-perspective/
Using Compost in Commercial Vegetable Production with Dr Doris Blaesing	This webinar recording looks at the benefits of using compost on commercial farms.	http://www.soilwealth.com.au/resources/videos-and-apps/using-compost-in-commercial-vegetable-production-with-dr-doris-blaesing-webinar-recording/
Biofumigation Cover Crops in Vegetable Production with Julie Finnigan	This webinar covers issues regarding the benefits of biofumigation, how to use it effectively and the different varieties of biofumigant cover crops available.	http://www.soilwealth.com.au/resources/videos-and-apps/biofumigation-cover-crops-in-vegetable-production-with-julie-finnigan-webinar-recording/
Rediscovering Cover Crops with Dr Kelvin Montagu	A webinar that covers a range of issues relating to integrating cover crops into vegetable production systems.	http://www.soilwealth.com.au/resources/videos-and-apps/rediscovering-cover-crops-with-kelvin-montagu-webinar-recording/
Developing a fertiliser program for Vegetable Crops with Bruce Scott & Dr Doris Blaesing	This webinar focusses on nutrient management of vegetable crops using plant testing and the 4R principle (right source, right rate, right time and right place).	http://www.soilwealth.com.au/resources/videos-and-apps/developing-a-fertilizer-program-for-vegetable-crops-with-bruce-scott-doris-blaesing-webinar-recording/
Soil Testing for Vegetable Crops with Dr Doris Blaesing and Dr Gordon Rogers	A webinar that looks at how to get the most out of your soil testing results.	http://www.soilwealth.com.au/resources/videos-and-apps/soil-testing-for-vegetable-crops-with-doris-blaesing-and-gordon-rogers-webinar-recording/
Leaf Sap Testing for Managing Vegetable Crop Nutrition with Bruce Scott, Dr Doris Blaesing and Dr Gordon Rogers	This webinar focusses on managing fertiliser inputs through leaf and sap testing.	http://www.soilwealth.com.au/resources/videos-and-apps/leaf-and-sap-testing-for-managing-vegetable-crop-nutrition-with-bruce-scott-doris-blaesing-and-gordon-rogers-webinar-recording/
Understanding Manures & Composts	A two-minute summary of Dr Doris Blaesing's presentation 'Understanding Manures & Composts' delivered at the Fertilizer Australia Conference 2015.	http://www.soilwealth.com.au/resources/videos-and-apps/understanding-manures-composts/
Biofumigation crop management for maximum impact	Dale Gies outlines the importance of correct establishment and water and nutrient requirements of biofumigant crops.	http://www.soilwealth.com.au/resources/videos-and-apps/biofumigation-crop-management-for-maximum-impact/
Development of biofumigant cover crops and their potential benefits	Listen to Dale Gies outline the development of high glucosinolates varieties for soilborne disease and nematode suppression.	http://www.soilwealth.com.au/resources/videos-and-apps/development-of-biofumigant-cover-crops-and-their-potential-benefits/
Introduction to Green Crops and Biofumigation	A short presentation by Dale Gies from High Performance Seeds discussing the benefits of green manure crops.	http://www.soilwealth.com.au/resources/videos-and-apps/introduction-to-green-crops-and-biofumigation/
Reduced Till in Vegetable Production – why?	A short video that explains the reasons behind and benefits of using a reduced till system in vegetable production.	http://www.soilwealth.com.au/resources/videos/reduced-till-in-vegetable-production-why/
Reduced Till in Vegetable Production – how?	A short video that shows how to implement a reduced till system in vegetable production.	http://www.soilwealth.com.au/resources/videos/reduced-till-in-vegetable-production-how/

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Communication channels

The Soil Wealth and ICP projects utilised a range of communication channels to promote the adoption of improved soil management and plant health practices by the vegetable industry. A compiled list of e-newsletter and social media communication is provided in Tables 8 and 9. These channels provided regular updates on events, demonstration site news, resources developed by the projects, as well as articles of interest. Channels are arranged by topic and heading, and contain a brief summary and link to the full version.



Table 8: E-newsletter, Facebook and Twitter communication

TITLE	SUMMARY	ACCESS
Soil Wealth and ICP Bulletin	The Soil Wealth and Integrated Crop Protection Bulletin is a monthly e-newsletter that communicates information on upcoming events, new resources and information of demonstration sites located around the country	http://www.soilwealth.com.au /resources/ bulletin-enewsletter/
Facebook Demonstration Site pages	The Facebook demonstration site pages provide ongoing live information on the progress of various trials at each of the sites around the country, from IPM and reduced tillage, to cover crops and compost.	http://www.soilwealth.com.au /demo-sites/
Twitter	The Soil Wealth and ICP Twitter accounts provide up to date information regarding a range of important issues, international research and articles relating to the vegetable industry.	https://twitter.com/ProtectingCrops https://twitter.com/SoilWealth

Summary of resources and communication

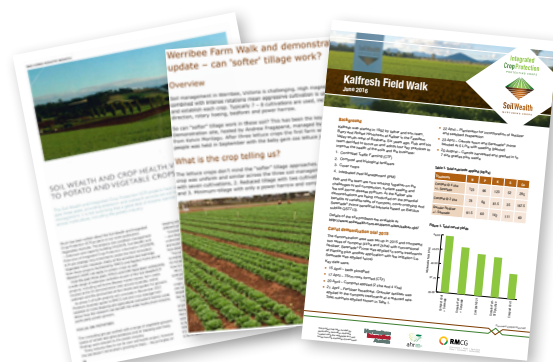


Table 9: Articles and other publications

TITLE	SUMMARY	ACCESS
Soil Wealth and Crop Health: Vital Components to Potato and Vegetable Crops	This article provides information on soil health, crop nutrition and crop health in potatoes, using the principles developed by the projects in vegetables.	http://www.soilwealth.com.au/imagesDB/news/Potatoes-Australia-Sep-Oct-2017_SWICPsummaryarticlescanned.pdf
Eastbrook Vegetable Farms Demonstration Site: Overview, May 2017	A fact sheet outlining the Mt Barker demonstration site, trials and lessons learnt used as a handout at the Horticulture Field Day in conjunction with Hort Connections 2017.	http://www.soilwealth.com.au/imagesDB/wysiwyg/ICP_SW_EastbrookVegetableFarmsDemonstrationSiteOverviewMay2017.pdf
Updates on Cover Crops and Soil Borne Disease in WA Grower Magazine	Coverage of the economic case study for cover crops, as well as a demonstration site update on the compost trials from Gingin in Western Australia in the WA Grower magazine.	http://www.soilwealth.com.au/resources/articles-publications-and-case-studies/updates-on-cover-crops-and-soil-borne-disease-in-wa-grower-magazine/
Soil Borne Disease Management in Vegetable Crops with Dr Len Tesoriero	Soil borne diseases are a serious concern for the vegetable industry, but can be managed, according to NSW Department of Primary Industries Senior Plant Pathologist, Dr Len Tesoriero.	http://www.soilwealth.com.au/resources/articles-publications-and-case-studies/soil-borne-disease-management-in-vegetable-crops-with-dr-len-tesoriero/
Biochar Showing Positive Benefits for Organic Vegetable Grower in Darwin	An article that outlines organic approaches to increasing soil health at the Darwin project demonstration site.	http://www.soilwealth.com.au/imagesDB/wysiwyg/DarwinupdateDecember2016v2.pdf
Soil Wealth: AORA Field Day at the Greater Sydney Local Land Services Demonstration Farm	An article with information regarding the multiple Soil Wealth demonstration sites located around Australia	http://compostforsoils.com.au/soilwealth.html
Werribee Farm Walk and Demonstration Site Update – can ‘Softer’ Tillage Work?	An overview of results taken from a demonstration site in Werribee in regard to tillage strengths.	http://www.soilwealth.com.au/resources/article-publication/werribee-farm-walk-and-demonstration-site-update-can-softer-tillage-work/
Kalfresh Farm Walk and Demonstration Site Update: June 2016	An update on the progress made on a demonstration site in South East Queensland.	http://www.soilwealth.com.au/resources/article-publication/kalfresh-farm-walk-and-demonstration-site-update-june-2016/
Lettuce Grower David East: Use of Biofumigant Mustard	The project's facilitated a field day at David's property where he spoke about the benefits he has observed using caliente and gave some tips on implementing the practice. Check out the article to see what David has learnt.	http://www.soilwealth.com.au/resources/article-publication/lettuce-grower-david-east-use-of-biofumigant-mustard/

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TITLE	SUMMARY	ACCESS
Building Soil Wealth in the South-West of WA	WA Grower magazine article on the field day on biofumigation at David and Lee East's Bewray farm at Manjimup, which attracted over 45 growers and industry specialists.	http://www.soilwealth.com.au/resources/article-publication/building-soil-wealth-in-the-southwest-of-wa/
Legume Cover Crops can Increase Spinach Yield	Information about a cover crop trial developed at the Cowra NSW demonstration site.	http://www.soilwealth.com.au/resources/article-publication/legume-cover-crops-can-increase-spinach-yield/
Pests, Diseases and Disorders of Sweetpotato: A field identification guide	This guide enables field identification of the insects, diseases and disorders of sweetpotato by providing photos, written description, damage symptoms, and season when commonly found.	http://www.soilwealth.com.au/resources/article-publication/pests-diseases-and-disorders-of-sweetpotato-a-field-identification-guide/
Pests, Diseases and Disorders of Sweet Corn: A field identification guide	This guide enables field identification of the insects, diseases and disorders of sweet corn by providing photos, written description, damage symptoms, and season when commonly found.	http://www.soilwealth.com.au/resources/article-publication/pests-diseases-and-disorders-of-sweet-corn-a-field-identification-guide/
Pests, Diseases and Disorders of Carrots, Celery and Parsley: A field identification guide	This guide enables field identification of the insects, diseases and disorders of carrots, celery and parsley by providing photos, written description, damage symptoms, and season when commonly found.	http://www.soilwealth.com.au/resources/article-publication/pests-diseases-and-disorders-of-carrots-celery-and-parsley-a-field-identification-guide/
Pests, Diseases and Disorders of Babyleaf Vegetables: A field identification guide	This guide enables field identification of the insects, diseases and disorders of babyleaf vegetables by providing photos, written description, damage symptoms, and season when commonly found.	http://www.soilwealth.com.au/resources/article-publication/pests-diseases-and-disorders-of-babyleaf-vegetables-a-field-identification-guide/
Pests, Diseases and Disorders of Brassica Vegetables: A field identification guide	This guide enables field identification of the insects, diseases and disorders of brassica vegetables by providing photos, written description, damage symptoms, and season when commonly found.	http://www.soilwealth.com.au/resources/article-publication/pests-diseases-and-disorders-of-brassica-vegetables-a-field-identification-guide/
Soil guru shows how it's done at National Horticulture Convention	"Soil health to create wealth" was the motto at an AUSVEG farm tour, as the tour visited a large scale market garden in Kalbar.	http://www.soilwealth.com.au/resources/article-publication/soil-guru-shows-how-its-done-at-national-horticulture-convention/
Bugs in the system at Bulmer Farms at Lindenow	Read the Weekly Times article about the Gippsland demonstration site.	http://www.soilwealth.com.au/resources/article-publication/bugs-in-the-system-at-bulmer-farms-at-lindenow/