Grower case study — MC16018 Macadamia Integrated Disease Management

Grower	Steve McLean, Grower and consultant
Location	Allstonville, Northern Rivers, New South Wales
Orchard	36 hectares over two blocks ranging from young trees to 16 year old trees.

What was the research about

Delivered by the University of Queensland (UQ), MC16018 was established to further progress an integrated disease management (IDM) program for the Australian macadamia industry. MC16018 was designed to build on and advance the husk spot and Phytophthora root rot outcomes of the previous disease management projects (MC03007, MC07003 and MC12007, delivered by the University of Queensland), while also improving knowledge of and diagnostics for emerging disease threats including husk rot, flower bight and branch dieback.

In this case study Steve McLean talks about his involvement in the disease management research and the benefits for the industry.

What is your background in the macadamia industry?

“I’ve been involved in the macadamia industry for 30 years, as a consultant specialising in crop protection, as a grower, as a Strategic Industry Advisory Panel (SIAP) member, and as chair of the crop protection industry reference group. So I’ve also been involved in quite a lot of the research projects over the years including the IDM work.”

What was your involvement with MC16018 and the broader disease management research program?

“I was on the SIAP when this investment was being put together 10-15 years ago. As an industry, we used to have a very good pest scouts and consultants meeting each year where we basically tried to work out what the issues were so then the SIAP would be able to prioritise research accordingly. Then also as a grower and consultant I’ve been closely involved. We look at all the recommendations, whether its new chemistry or practices, we will try them out on our blocks and then if there is a successful outcome we will recommend it to our clients. And I’ve worked directly with Femi Akinsanmi (MC16018 Project Leader) on some of the disease management research trials on new chemical options for flower disease and husk spot.”

Why do you think the MC16018 research was important for macadamia growers?

“Disease can potentially have such a large impact. If there’s a major disease outbreak you can lose 20–30% of the crop, possibly more. So you really need to be on top of it, and this program of research is helping to understand the issues and provide practical solutions. It doesn’t necessarily make big jumps in improved management, but it just grinds away at the issues to generate steady progress over time.

At the same time, disease is so weather orientated, so I don’t think it ever really drops off but this research just means we have more information to understand the risk, and then more options to manage it as well. There used to be only one fungicide for husk spot, but now we have a whole range of chemistry as well as cultural practices. For husk spot the research identified that stick tights are the main cause of husk spot infection, which can spread spores up to 600 days, so by shaking the tree and removing the stick tights you can significantly reduce husk spot risk and management cost for the next year. For phytophthora too, we now have a good risk assessment to understand the issue and help to more effectively manage the disease, and that’s been well adopted by industry.

We were directly in the flower blight and husk spot trials in MC16018 that helped to get a new fungicide (Merivon®) registered for managing these issues. So that’s a pretty good outcome for industry as it give people an additional option to control flower disease and husk spot in the short term, but as it’s a new active ingredient it also means there is a lower risk of resistance developing in the longer term.

Any final thoughts or comments on the MC16018 and the broader disease research program?

"I think the whole industry has benefited from the program because of how effective it has been at getting the message out. We get regular updates at the MacGroups and consultant meetings, and through the AMS Bulletin. So it's doing good research but also packaging that and making sure it's getting out to growers and industry. And that's helped with the adoption, as growers and consultants understand and have confidence in the research.

Its also been a very good program in the way it has complimented other research. Its integrated well with the pest management and benchmarking projects, both in terms of understanding the interaction of pests and diseases and also in measuring the ongoing implications for adoption and orchard productivity. And you can see there has been a steady improvement in the some of these disease issues from the benchmarking data. And moving forward into the next phases the research will be focussing on incorporating climate and weather data as well, to understand and potentially predict disease pressure. So the program should continue to generate good outcomes for industry."

MC16018 Macadamia Integrated Disease Management was funded by Hort Innovation, using the macadamia research and development levy and contributions from the Australian Government. This case study was developed as part of MT21015 Horticulture impact assessment program 2020-21 to 2022-23 — 2022-23 sample, which was funded by Hort Innovation, using research and development levies and contributions from the Australian Government.

Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture. For more information visit www.horticulture.com.au.

For more information on this grower case study, please contact George Revell, Principal Economist at Ag Econ, through george@agecon.com.au.