HGANZ Research & Extension Plan

The hazelnut industry in NZ is small and dominated by owner operators mostly of relatively small scale. A 2017 survey of members report 67,585 trees with an average orchard size of 1570 trees. Total NZ Production in 2016 was 62 MT.

Contrast this with Oregon in the USA where they have 32,000ha planted with an average orchard size of around 30 hectares. Production in the latest season was around 92,000 MT.

NZ, particularly Canterbury and Oregon have a very similar climate, great soils, sufficient winter chilling for hazelnut production and enough rainfall or irrigation to produce great crops.

Demand for NZ grown nuts is strong and they are recognized as of better quality and command a higher price in most cases compared with imported hazelnuts. Why then is NZ's industry so small, and at this stage barely profitable?

Oregon has benefitted from the R&D and extension undertaken by Oregon State University in Corvallis, predominantly due to a Hazelnut breeding programme and extension service.

Here I attempt to summarise the key areas of research and extension that we might undertake to grow our industry here in NZ. It has been prioritised by me but needs wide industry consultation and agreement. It is just a first cut.

Peter Barrowclough
June 2024

Research and Extension options and priorities				
Priority	**Area to be addressed**	**Potential actions**	**Timeframe until results deployed**	**Notes**
High	Yield improvement	New cultivar importation	4-10 years	Whiteheart is supposed to yield a max of 2kgs per tree (rarely achieved). In Oregon there are varieties that yield 7 kgs per tree. Current NZ quarantine system overloaded and long waiting times to get material into NZ
		Development of different cultivars already in NZ	3-10 years	Stock take of different cultivars in NZ. Measurements of yields, ease of growing and nut quality Scale up tree production via nurseries
		Pruning and light interception Canopy management for mature trees	1-3 years	Quick gains can be had Systematic understanding of nut bud initiation needed Best architecture and growing systems need to be understood
		Training systems for young trees	1-3 years	
High	Biosecurity issues			
		Brown Marmorated Stink bug		Massive threat to NZ's entire horticultural sector
		Eastern Filbert Blight (EFB) Threat	10 years	Single gene resistant cultivars in Oregon breaking down We have no information on EFB resistance in NZ plant material. I doubt we have EFB blight resistance in NZ
		Other insect pests		Murray?
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Medium	Sucker control		1-3 years	Most growers either spray or cut Do we really understand the impact of suckers on depressing yield. Citizen science by Peter Barrowclough indicates it could be quite high.
Medium	Current NZ pest and disease issues	Big bud mite control	1-3 years	Some spraying work done – Les McCracken Many growers cut them out or ignore them Masters student has done some good work
Medium	Agronomy	General	1-3 years	Some written information from Murray. Other international work is relevant. Cataloging and dissemination of summarized information could be done quite quickly
		Pollination efficiency	2-5 years	Lincoln Agritech will build capability in this area which could be applied to NZ
		Pollinator compatibility	1-2 years	Murray has a lot of this information. Can we make it more widely available?
		Plant nutrition	1-2 years	Relatively well served by private consultants or fertilizer sellers
		Site selection and soil	1-2 years	It would be useful to have this summarised
		Irrigation	1-2 years	Probably standard techniques sufficient. But how do new growers access such information
		Weed control	1-2 years	Relatively covered by existing techniques
		Planting density	1-2 years	Linked to pruning and light interception
		Shelter belts and wind damage	1-2 years	Probably similar to other tree crops
		Climate change impacts	1-2 years	Lack of chilling could become an issue in some areas
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Medium	Phenology		3-5 years	Basic phenology understanding is limited. Some work done by Murray. Needs to be collated and gaps identified
Medium	Economic analysis		1 year	Do we really know the cost of production, the revenue returns and thus profitability?
Medium	Statistics		Ongoing	We have some but very limited statistics
Medium	Extension		1-2 years	Can we up our game on extension and sharing existing knowledge
Low	Harvesting techniques		3-5 years	Range of equipment in NZ. Field days and videos can help new growers
Low	Post harvest handling and storage		3-5 years	Range of equipment in NZ. Field days and videos can help new growers
Low	Consumer nutrition		3-5 years	Little nutritional work done on NZ nuts. Is this work necessary given demand for current production levels is strong enough
Low	Market demand		3-5 years	If we are to substantially grow production in NZ can we sell it all profitably. Will we have to develop an export market
Low	Regulatory compliance			What issues, if any unique to hazelnuts are growers facing from a regulatory point of view?