

# Improving Pest Management (NY17009)

## Year one project summary

Data for the first year of the project "NY17009 *Improving pest management for the nursery industry*", has been partially analysed. It provides a glimpse into the cost range of managing plant pests with key elements of a structured Integrated Pest Management (IPM) program being in place in a variety of production nurseries across 5 states.

Seven production nurseries have been involved in the trial since 2019 with each of them specialising in a different area of plant production. These cropping systems include propagation, perennial potted colour, annual potted colour, fruit tree production, forestry seedling production and tree and shrub production.

Key parameters for the data collected over the first twelve months from 2019 - 2020, and continuing through 2020 - 2021 includes:

- Cost of labour to spray for the treatment of pests and diseases
- Cost of chemicals to spray for the treatment of pests and diseases
- Time spent treating pest and disease
- Labour cost associated with releasing biological control measures
- Cost of biological organisms
- Cost of discarded product (throw-outs)
- Cost of discarded product (throw-outs) due to pest and disease damage



The following tables provide a preliminary summary of the cost for pest control across the seven different production nursery categories.

Chemical control	Range	Average	Avg cost/ha
Spraying annual labour cost per m <sup>2</sup>	\$0.15 – \$2.52	\$0.83	\$8,300.00
Spraying annual chemical cost per m <sup>2</sup>	\$0.12 – \$1.03	\$0.48	\$4,800.00
Total cost p.a. for chemical spray per m <sup>2</sup>	\$0.35 - \$3.63	\$1.11	\$11,100.00
Biological control	Range	Average	Avg cost/ha
Annual labour cost per m <sup>2</sup>	\$0.01 - \$0.16	\$0.06	\$600.00
Annual biological organism cost per m <sup>2</sup>	\$0.06 - \$0.70	\$0.40	\$4,000.00
Total annual biologicals release cost per m <sup>2</sup>	\$0.18 - \$0.86	\$0.46	\$4,600.00



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Discarded stock (Throw-outs)	Lost revenue (L.R) range	Avg. L. R	Avg L.R per ha
Annual discards <b>total value</b> per m <sup>2</sup>	\$0.16 - \$60.56	\$16.64	\$166,400.00
Annual discards <b>attributed to pest and disease</b> per m <sup>2</sup>	\$0.21 - \$6.04	\$1.81	\$18,100.00
% of total annual discards per m <sup>2</sup> attributed to pest and disease	7% - 34%	11%	\$18,100.00

Discarded stock (Throw-outs)	Production Nursery (Cropping Systems)						
	1	2	3	4	5	6	7
Annual discards <b>total value</b> per m <sup>2</sup>	\$6.47	\$8.000	\$12.06	\$25.50	\$3.35	\$60.56	\$0.61
Annual discards attributed to <b>pest and disease</b> per m <sup>2</sup>	\$1.69	\$2.50	Data as yet unavailable	\$1.66	\$0.57	\$6.04	\$0.21
% of total annual discards per m <sup>2</sup> attributed to <b>pest and disease</b>	26.16%	31.26%	Data as yet unavailable	6.52%	16.96%	9.98%	34.39%
Discards attributed to <b>P &amp; D</b> as a % of <b>national nursery average</b> turnover of \$40.80/m <sup>2</sup> or \$408,000.00/ha	4.15% (\$17,000)	6.13% (\$25,000)	Data as yet unavailable	4.06% (\$16,565)	13.98% (\$57,038)	14.80% (\$60,384)	0.051% (\$208)

**Note:** Average pest and disease losses stand at \$29,366 per ha at an average turnover of \$408,000/ha.

Year two (currently underway) sees key elements of a structured IPM program incorporated into the crop management systems of the participating production nurseries. BioSecure HACCP procedures for crop monitoring, site surveillance, import inspections and dispatch inspections are being employed under the project as the industry plant protection standard. While each production nursery is implementing the procedures for site surveillance, import inspections and despatch inspections, Biological Services has been contracted to perform the crop monitoring procedure at frequencies that are dependent on the crop type and in line with the BioSecure HACCP procedure for crop monitoring. The following table details those crop monitoring frequencies.

Cropping System	Monitoring Frequency
Seedlings, plugs and annual potted colour.	At least once every <b>7 days</b> .
All plants during the propagation phase.	At least once every <b>14 days</b> .
Perennial potted colour.	At least once every <b>14 days</b> .
Trees and shrubs / Palms / Ornamental grasses /Succulents Indoor / houseplants.	September to May At least once every <b>14 days</b> . June, July, August – Winter months At least once every <b>28 days</b> .

At the conclusion of the two-year project (2019-20 and 2020-21), the data collected for pest and disease management in each business, with and without elements of a structured IPM procedures will be compared. This analysis will provide industry with a cost benefit analysis for implementing a structured IPM program in a variety of production nurseries.

BioSecure Manual available at [www.nurseryproductionfms.com.au](http://www.nurseryproductionfms.com.au)

