Tea Tree Oil Program
RD&E Plan
2018–2022

March 2018
AgriFutures Australia No 18/002
AgriFutures Australia Project No PRJ-010881
Foreword

The Australian Tea Tree Industry has “emerged”! After more than 20 years of collaborative research between AgriFutures Australia and Tea Tree Oil producers, this is the first 5 Year RD&E Plan for the industry funded by statutory levies. An R&D levy of 25¢ per kilogram of Tea Tree Oil was introduced on 1 July 2017, providing industry with reliable and secure research funding. At AgriFutures Australia, the Tea Tree Oil Industry has moved from our Emerging Industries arena to now be managed in the Growing Profitability arena.

In this plan the Australian Tea Tree Oil Industry has set renewed ambitious RD&E targets to drive the sustainable growth of the industry. When achieved, increasing numbers of global consumers will have access to, and be aware of, the benefits of this unique ingredient from the Australian bush.

AgriFutures Australia will continue to work with the Australian Tea Tree Oil industry to ensure the industry’s five year research priorities meet industry needs and are informed by government priorities. The industry has a farm gate value of $30 million and approximately 90% of production is exported, with major markets located in North America and Europe. This RD&E Plan seeks to integrate breeding, agronomy and market development to increase both supply and demand to create new opportunities for Australian Tea Tree Oil producers.

Program RD&E Plans are a key part of implementing AgriFutures Australia’s broader RD&E strategies, and are the basis on which AgriFutures Australia invests on behalf of industries.

AgriFutures Australia has three clear top-level strategies to increase profit and productivity in rural industries:

1. Engage industry participants in determining RD&E priorities
2. Investing in innovation that assists levied industries to be more profitable
3. Delivering outcomes by maximizing industry uptake and adoption

The profitability, productivity and sustainability of rural industries is AgriFutures Australia’s core business; the organisation works with its portfolio industries to invest in their priority RD&E needs. AgriFutures Australia fosters strong relationships with industry partners, including the Australian Tea Tree Industry Association Ltd (ATTIA) to ensure RD&E investment leads to practical knowledge and innovation which can be adopted by industry members.

This report Tea Tree Oil RD&E Plan 2018-2022 is an addition to AgriFutures Australia’s diverse range of over 2000 research publications and it forms part of our Growing Profitability arena.

Most of AgriFutures Australia’s publications are available for viewing, free downloading or purchasing online at: www.agrifutures.com.au. Purchases can also be made by phoning 1300 634 313.

John Harvey
Managing Director
AgriFutures Australia
What is a Five Year Plan

This Five Year Plan has been developed by AgriFutures Australia, in consultation with Tea Tree industry stakeholders, to outline the Tea Tree Oil research, development and extension (RD&E) objectives through 2022. These objectives have been shaped by the goals and strategies of the AgriFutures Australia Strategic R&D Plan 2018–2022. The Strategic R&D Plan is available on the AgriFutures Australia website: http://www.agrifutures.com.au/about/corporate-documents/

A Five Year plan guides collaborators, researchers and other industry developers in designing activities to meet the goals of the plan. This Five Year Plan also guides AgriFutures Australia in investing program funds.
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The Australian Tea Tree Oil industry

Industry profile

The Australian Tea Tree industry’s output is primarily Tea Tree Oil, which is steam distilled from *Melaleuca alternifolia*, an iconic Australian native tree species. Tea Tree Oil has recognised antiseptic, anti-bacterial, anti-fungal, anti-inflammatory and anti-viral properties and is widely formulated into many cosmetic and personal care products as well as used as a topical antiseptic in its pure form on cuts, abrasions and insect stings.¹

Pure Australian Tea Tree Oil has also demonstrated efficacy in the control of Golden Staph (*Staphylococcus aureus*) for both Methicillin (MRSA) and Vancomycin (VRSA) resistant strains.² New, innovative uses for Tea Tree Oil are being explored in cosmetics and cosmetic use and for agricultural applications including insect pest control in the sheep and cattle industries and air quality management in both human and intensive livestock environments.

*Melaleuca alternifolia* (Narrow Leaf Tea Tree) an iconic Australian native tree.

In 2016, there were about 120 tea tree growers in Australia and around 4,000 hectares under production. Nearly all Australian Tea Tree Oil production is sourced from plantations although a minute portion (~0.05 %) is distilled from bush cutting. Most plantations are located in the coastal region of northern NSW and the Atherton Tablelands of Queensland. The Australian industry consists of a diverse range of producers with plantation areas ranging from five to 700+ hectares. Some producers are small, part-time operators while others employ numerous staff and have a significant investment in brands, capital and machinery.³

Australia produces in excess of 720 MT of Tea Tree Oil annually, with a farm gate value of $30 million. About 90% of production is exported, with major markets located in North America and Europe. Around 90% of the exported Tea Tree Oil is sold by Australian producers as bulk oil. Approximately 50% of this is used to make value-added products including healthcare, cosmetic, pharmaceutical, veterinary and aromatherapy products. Domestic consumption is estimated to be around 95 MT per annum with much of this also destined for the export market as value added cosmetic and therapeutic goods such as soap, shampoo, burn dressings and of course as 100% pure (neat) Tea Tree Oil.

Sales demand for Tea Tree Oil has increased 25% year-on-year from 2013/14 and production in 2015/16 reached a record high of 845 MT. The 2016/17 production was 720 MT, lower than the current year and caused by adverse climatic conditions experienced in major growing areas in 2016, but still higher than the industry average for the past 10 years. The 2017/18 season is expected to be similar to 2016/17 with forecast production at 720 MT, again due to adverse conditions experienced in the growing season.

Figure 1. Tea Tree Oil Supply Chain

The main competition in the Tea Tree Oil market comes from China, which has the advantage of cheaper production costs. However, nearly all of China’s Tea Tree Oil exports are heavily adulterated with waste by-products from normalising other essential oils; this has been highly detrimental to the Australian industry and will be addressed through expanded RD&E activities. There is also increasing competition in world markets from Tea Tree Oil produced in South Africa, Zimbabwe and Kenya. A Brazilian consortium is also considering entering the market in 2017/18.

Aerial view of a tea tree plantation and harvest, in Northern New South Wales

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The Australian Tea Tree Oil industry operates in a highly regulated market. Access to European and American cosmetics and medicinal markets demands compliance with a range of regulatory requirements as well as a suitable International Standard. However, regulatory approval is lacking or restricted in many market destinations. Europe is developing a number of new regulatory barriers to entry, all of which are currently being addressed by ATTIA and/or other key industry players.

Australian Tea Tree Oil competes successfully on the global stage by producing a high quality, consistent product that is compliant with international standards; while higher yielding varieties help offset the cost of production. The industry continues to investigate new product opportunities to grow the demand for high quality Tea Tree Oil. To maintain the credibility of Australian Tea Tree Oil with consumers and regulators, and command a premium for a quality product, the majority of Australian tea tree growers market their oil as Code of Practice accredited using the code developed by ATTIA with some local and international manufacturers branding their product with the ATTIA logo.

The introduction of a compulsory R&D levy on all production set at 25 cents/kg and an Emergency Plant Pest Response levy set at 0.00 cents/kg from July 2017 provide an opportunity for further positive outcomes for the Australian Tea Tree Oil industry.


*Tea tree distillery (L) and Tea Tree Oil in a separator jug post-distillation*
Table 1. Tea Tree Oil Industry SWOT Analysis 2017–18

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Effective natural product</td>
<td>• Smell/Odour</td>
</tr>
<tr>
<td>• Secure RD&amp;E funding for the foreseeable future</td>
<td>• Generalist</td>
</tr>
<tr>
<td>• Secure funding for future pest incursions (PHA, EPPR Deed)</td>
<td>• Not aligned with non-Australian TTO industry</td>
</tr>
<tr>
<td>• Australian native species</td>
<td>• Skin sensitization</td>
</tr>
<tr>
<td>• Well recognized by consumers</td>
<td>• Lack of IP protection for TTO-containing products</td>
</tr>
<tr>
<td>• Large body of published Safety &amp; Efficacy evidence</td>
<td>• Consistent OH&amp;S guidelines</td>
</tr>
<tr>
<td>• ISO standard</td>
<td>• Production inefficiencies</td>
</tr>
<tr>
<td>• Affordable</td>
<td>• Clear communication of risks of fake oil</td>
</tr>
<tr>
<td>• well-structured, united industry</td>
<td>• Insufficient funding</td>
</tr>
<tr>
<td>• de facto gold standard for natural efficacy</td>
<td>• Succession planning of ATTIA knowledge (agronomy, breeding, industry, etc.)</td>
</tr>
<tr>
<td>• Industry members skill set (corporate knowledge)</td>
<td>• Dangerous Goods status</td>
</tr>
<tr>
<td>• Tea Tree Breeding Program (TTBP)</td>
<td></td>
</tr>
<tr>
<td>• Dedicated CEO to coordinate Board/Industry activities</td>
<td></td>
</tr>
<tr>
<td>• Code of Practice Quality System</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Expansion of supply base</td>
<td>• Adulteration</td>
</tr>
<tr>
<td>• Exploit innovative uses (cancer, carbon fibre)</td>
<td>• Generalist product (no single mode of action)</td>
</tr>
<tr>
<td>• Breeding resistance (like cotton industry and pests)</td>
<td>• Cheap alternatives (including fake oil)</td>
</tr>
<tr>
<td>• Identification of a novel energy source (non-fossil)</td>
<td>• Other efficacious natural ingredients</td>
</tr>
<tr>
<td>• TTO registered as an “active” ingredient (FDA)</td>
<td>• Non-Australian TTO gains recognition</td>
</tr>
<tr>
<td>• Registration as a THR in the EU</td>
<td>• Regulatory exclusions/objections</td>
</tr>
<tr>
<td>• Customers/Manufacturers with more regulation and coding requests</td>
<td>• Green backlash (distillate waste, pesticides, fossil fuels)</td>
</tr>
<tr>
<td>• Brand Value (of TTO and of Australian origin TTO)</td>
<td>• Genetic leakage of TTBP to overseas</td>
</tr>
<tr>
<td></td>
<td>• Increased “hiding” of fake oil in formulated products</td>
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</tbody>
</table>
Industry position in the AgriFutures Australia life cycle

Regional communities and the broader Australian economy depend on profitable farms. There is a clear link between economic prosperity and the capacity for industry innovation and uptake of new technology. Rural industries that are well placed to adopt new ideas and use technology to improve productivity enhance their competitive advantage and are structured for sustainable growth.

AgriFutures Australia’s commitment to new and developing industries supports appropriate RD&E for a given stage of maturity in the Australian market. AgriFutures Australia clearly defines its role as an investor in industries based on their development stage and the unique attributes of that industry.

The Australian Tea Tree Oil industry has emerged as a mature industry (through investments on a lifecycle basis to the last stage) and is now a levy paying program managed under the AgriFutures “Growing Profitability” arena. The goal of this arena is to enhance the profitability and sustainability of levied rural industries.

AgriFutures Australia will empower Tea Tree Oil industry participants to help shape RD&E priorities, encourage industry uptake of innovation and adapt to changing environments – at operational, market and regulatory levels.

Table 2. Tea Tree Oil Lifecycle Development Stage

<table>
<thead>
<tr>
<th>Development stage</th>
<th>New</th>
<th>Developing 1</th>
<th>Developing 2</th>
<th>Maturing</th>
<th>Established</th>
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<tr>
<td>Current stage</td>
<td></td>
<td></td>
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<tr>
<td>Stage goal, to be achieved</td>
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The Australian Tea Tree Oil industry has a number of attributes that indicate it is an established industry.

- Its peak body, the Australian Tea Tree Industry Association Ltd (ATTIA) was established in 1986 and represents approximately 90% of production
- ATTIA has partnered with RIRDC (now AgriFutures Australia) on industry RD&E since 1998, using core RDC funds and voluntary contributions from tea tree oil producers to fund projects
- A Tea Tree Oil R&D levy at 25¢/kg was introduced on 1 July 2017
- Industry growth has evened out, with average production at around 700 MT
- An established supply chain exists with a consolidation of the number of producers and private investors along the supply chain, with some vertical integration
- The five-year RD&E plan prioritises and focuses investment to benefit industry, guiding action and investment by participating parties
- There is a clear understanding of co-investors and key stakeholders
- RD&E impact is monitored for industry or key issues
## Financial commitments

**Table 3. Tea Tree Oil RD&E Budget (projected)**

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<td><strong>Income ($)</strong></td>
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<tr>
<td>Industry levies</td>
<td>75000</td>
<td>160000</td>
<td>180000</td>
<td>190000</td>
<td>200000</td>
</tr>
<tr>
<td>Commonwealth</td>
<td>150000</td>
<td>150000</td>
<td>150000</td>
<td>150000</td>
<td>150000</td>
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<tr>
<td>contribution</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other income</td>
<td>125000</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Total revenue</strong></td>
<td>350000</td>
<td>310000</td>
<td>330000</td>
<td>340000</td>
<td>350000</td>
</tr>
<tr>
<td><strong>Expenditure ($)</strong></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Research</td>
<td>275000</td>
<td>275000</td>
<td>275000</td>
<td>275000</td>
<td>275000</td>
</tr>
<tr>
<td>Other expenditure</td>
<td>25000</td>
<td>25000</td>
<td>25000</td>
<td>25000</td>
<td>25000</td>
</tr>
</tbody>
</table>
( panel costs,        |           |           |           |           |           |
communications,      |           |           |           |           |           |
AgriFutures services  |           |           |           |           |           |
fees, levy collection |           |           |           |           |           |
fees)                |           |           |           |           |           |
| **Total expenditure**| 300000    | 300000    | 300000    | 300000    | 300000    |
| Reserves             | 50000     | 60000     | 90000     | 130000    | 180000    |
Development of the Tea Tree Oil RD&E Plan 2018–2022

Tea Tree Oil 5 Year Plan 2013-2018 – Review summary

Before the introduction of the Tea Tree Oil R&D Levy on 1 July 2017, Tea Tree Oil RD&E was undertaken using decreasing amounts of core funding from the Rural Industries Research and Development Corporation (RIRDC), supplemented by voluntary contributions from ATTIA members, principally producer-members. The Tea Tree Oil Five Year RD&E Plan 2013-2018 was the third RIRDC RD&E plan for Tea Tree which included weighting for expenditure; the first R&D Plan commenced in 1998.

The 2013-18 RD&E objectives for the Australian Tea Tree Oil industry were:

1. Market access through regulatory response, product efficacy and safety research and its communication (35%)
2. Production systems that lower cost and increase productivity including the tea tree breeding program (35%)
3. Proof of concept innovative uses for Tea Tree Oil (15%)
4. Communication and industry capacity building (15%).

Within these objectives, tea tree producers nominated the following priorities:

1. Retention of support for the tree breeding program (TTBP)
2. Access to new chemicals and pesticides
3. Reduction in the cost of production
4. Regulatory risk management including capacity to respond to threats with science as they emerge
5. Communication of science to major overseas manufacturers and their subsequent support for Australian Tea Tree Oil (rather than low cost alternatives)
6. A ‘big picture’ strategy to drive industry development and demand.

The RIRDC Tea Tree RD&E program delivered significant benefits to Tea Tree producers including highly improved Tea Tree varieties, research and data on the Safety, Efficacy and Uses of Tea Tree Oil, weed management and agronomy, a website, and a comprehensive Literature Database of all research conducted on Tea Tree Oil since its discovery in 1924.

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Notable achievements during the implementation of the Tea Tree Oil Five Year RD&E Plan 2013–2018 undertaken by ATTIA and other key independent ATTIA members include:

1. The transition of the Tea Tree Breeding Program from the NSW DPI to Southern Cross University’s Plant Science Division from 1 July 2017.
2. A Cooperative Research Grant Project (CRC-P) to investigate clonal propagation for high yielding, low methyl eugenol trees from the TTBP.
4. A campaign to reduce adulteration of TTO globally resulting in a marked increase in demand and stable, sustainable pricing for 100% pure Australian TTO.
5. The introduction of a monograph to allow 100% pure TTO to be registered and sold in the EU as a Traditional Herbal Remedy (THR) with efficacy claims for some posology.
6. The introduction of clear harmonised Classification, Labelling and Packaging (CLP) guidelines for TTO linked to both REACH and the GHS for the Transport and Handling of Dangerous Goods.
7. A revision of ATTIA’s Code of Practice (COP) to include some aspects of both GMP and GACP principles.
8. A successful end in sight for a REACH Dossier for TTO in the EU due in early 2018 which will use the current ISO4730 Standard as the defining measure and CLP regulations.
9. A survey that demonstrates for the first time that approximately 50% or 150 metric tonnes (MT) of all TTO imported into the EU (estimated to total 300 MT) is used is cosmetics/personal care formulations.
10. Progress towards a revision of the 2008 SCCS Opinion on TTO which, if successful, will allow TTO to be sustainably used at higher levels in cosmetic products in the EU.

With the introduction of the R&D Levy on 1 July 2017, it was agreed that the existing Tea Tree Oil RD&E Plan 2013-2018 should be replaced prior to its conclusion to reflect changed funding and governance arrangements.

Industry Consultation

Producer engagement in the development of RD&E objectives is a long-established practice in the Australian Tea Tree Oil industry. Since the introduction of a voluntary levy in 2009, ATTIA has held one-on-one Quality Assurance audit meetings with most grower members either annually or every second year through its extension activities. These audit meetings typically included a discussion about the voluntary levy and how it was spent. Between 1998 and 2011 RIRDC published annual reports outlining the completed projects and research in progress for tea tree oil. ATTIA has reported to members and producers on the progress of the RD&E funded by voluntary levies in a range of forums including the Annual General Meeting, research updates in the monthly newsletter, and at grower meetings. This transparency and accountability will continue under the new (2017) statutory levy-funded program.

The level of consultation for a compulsory, statutory levy increased significantly in mid-2014 when RIRDC first announced reductions in its core funding. That announcement was the catalyst for ATTIA to seek a levy to fund its RD&E. A discussion paper was released to Tea Tree producers in November 2014, which outlined a range of options for the industry to consider and work through. Consultation on a specific levy proposal commenced in May 2015 to refine the proposal and consider any industry questions or concerns culminating in a formal four-month consultation period which was held from 1 March – 30 June 2016.

During the development of the Tea Tree Oil R&D Levy submission in 2015-16, extensive consultation with producers and the supply chain was undertaken to identify research priorities. This consultation included public meetings, workshops, discussion papers, surveys, blogs and media articles seeking feedback. In August 2016, a producer ballot was held to determine industry support for a compulsory R&D levy, and the associated research program proposed for funding. The ballot received 96% support from individual producers, representing 94% of production. The research priorities determined during the consultation process went forward with the industry’s submission for the establishment of an R&D levy, which was approved by the Australian government and commenced on 1 July 2017.

During August and September 2017, as part of the development of the Tea Tree Oil RD&E Plan 2018-2022, Tea Tree producers were again engaged in consultation on research priorities and received an issues paper for comment through email, mail, and available for review on the ATTIA website. In October 2017, these priorities were endorsed by producers at the ATTIA Field Day and AGM in NSW.

Growing profitability

AgriFutures Australia is committed to achieving significant benefits to industry within our available resources, through the implementation of targeted and high-impact RD&E projects. The consultation process highlighted a number of issues that the Australian Tea Tree Oil industry considers roadblocks to growth and development. Of these impediments, those that can be addressed with targeted RD&E have shaped AgriFutures Australia’s investment priorities for the next five years. Whilst not every problem raised can be adequately addressed, these priorities aim to achieve high-impact, far-reaching benefits to the Australian Tea Tree Oil industry.

The six main aims of the Tea Tree Oil RD&E Plan 2013-2018 remain valid and the Tea Tree industry agrees these aims remain as the foundation of determining priorities for the Tea Tree Oil RD&E Plan 2018-2022. They are:

1. A prosperous industry with sustainable pricing and production in long term balance with supply.
2. Strong defensibility against foreign and adulterated product.
3. Long term sustainability of production.
4. An RD&E program to underpin a prosperous tea tree industry.
5. Strong well resourced, well governed industry association with well-defined policies.
6. Regulatory risks identified and managed.

These aims are inextricably linked with, and underpinned by, market supply and demand dynamics. It is therefore important for RD&E to deliver outcomes that drive and manage supply and demand.
Tea Tree Oil RD&E objectives, 2018-2022

Objective 1 – Improving supply

Australian Tea Tree Oil is a high quality, consistent and quality assured product that is compliant with the international standard (ISO4730: 2017). However, yield can be volatile, impacted by poor growing seasons. The industry continues to investigate new product opportunities to grow the demand for high quality Tea Tree Oil and to meet this demand; the supply side must be consolidated through higher yielding varieties, agronomic advances, reduction in input costs and better adoption of RD&E outputs.

Strategies

1. Develop and implement a roadmap to drive the Code of Practice (COP) towards a GMP/GACP style Quality Assurance system.
2. Drive and further develop a revitalised Tea Tree Breeding Program (TTBP 2) managed by Southern Cross University to achieve demonstrated and measurable step-changes in yield, oil quality and pest resistance.
3. Develop and implement genetic markers and a robust system (e.g. PBR registration) to allow full global protection of elite germplasm developed through TTBP 2.
4. Investigate all aspects of the agronomy of M. alternifolia
5. Provide clear guidelines for fertiliser use efficiency.
6. Investigate all aspects of water use efficiency of M. alternifolia to provide clear guidelines to assist growers to manage water use more efficiently.
7. Investigate alternative distillation methods with the aim of developing better, safer and more cost-effective energetics for the extraction of TTO.
8. Provide information, advice and assistance on all aspects of Occupational Health & Safety for growers and distillers.

Key Performance Indicators

- Industry production to reach 1500 tonnes in 5 years
- New plantings resulting in 1000 Kg yield per hectare
- 80% of industry adopts a new Code of Practice for quality assurance
- Reduced input costs through improved agronomy, water use and fertiliser use efficiency

Indicative share of RD&E Budget – 45%
Objective 2 – Increasing demand

The development of innovative uses for Australian Tea Tree Oil - particularly agricultural and cosmetic applications - provides exciting opportunities for the industry. Two key issues impact demand – market access and regulatory barriers. This objective will undertake RD&E that reduces the barriers to Australian industry in the market and positions them for new markets.

Strategies

1. Achieve full alignment of BP and Ph Eur Standards with ISO 4730: 2017
2. Develop a US Pharmacopeia (USP) monograph and submit this for approval by USP.
3. Develop an FDA monograph for TTO (for various indications) and submit this for approval by the FDA.
4. Investigate regulatory and Standards requirements for an emerging Asian market for TTO.
5. Adulteration:
   a. Develop and implement a methodical approach to investigating incidences of adulteration as well as mechanisms to allow penalties for repeat offenders to be incurred
   b. Conduct a market survey of knowledge of and attitudes towards adulteration in both manufacturers and end-users.
   c. Investigate sound methodology to detect the inclusion of adulterated material in formulated products.
   d. Combat the ‘so what’ attitude of the small segment of manufacturers which knowingly continue to use adulterated material
6. While this is a tight, technically focused strategy to increase demand, it is acknowledged that AgriFutures will occasionally consider other high potential opportunities to drive demand including understanding efficacy

Key Performance Indicators

- Adulterated Tea Tree Oil samples down from 70% in 2011, to 20% by 2022
- Increase maximum allowable concentration of Tea Tree Oil in cosmetic formulations from 1% to 5% (SCCS)
- Access to the US market with an FDA monograph by 2022

Indicative share of RD&E Budget – 45%
Objective 3 – Extension, sustainability and human capital

Effective extension is essential for the adoption of RD&E outputs and the achievement of industry goals that result in a return on investment for public and private RD&E effort.

Strategies

1. Ensure that all RD&E commenced is of industry-wide benefit and that outcomes consistently provide tangible value for money wherever possible to the majority of members.
2. Ensure that RD&E outcomes are communicated to producers to encourage adoption to increase the return on investment for public and private investors
3. Undertake RD&E that supports industry’s sustainability and environmental improvement
4. Support the development of human capital to enhance industry leadership
5. Identify opportunities to connect industry to AgriFutures People in Leadership arena.

Key Performance Indicators

- Increase in number of producers at extension meetings / industry workshops
- Industry yield improves as higher yielding varieties and agronomic advances are adopted on farm
- Increased use and dissemination of industry data supporting decision-making

Indicative share of RD&E budget – 10%

These objectives will be reviewed annually, as part of AgriFutures Australia’s Annual Tea Tree Oil Review process. Further consultation and feedback will be sought from stakeholders, to adjust or amend objectives as the industry growth is supported through the AgriFutures Growing Profitably arena,

Allocation of funding for these priorities will also be considered annually, as part of AgriFutures Australia Annual Operating Plan (AOP). The AOP is available on the AgriFutures Australia website, http://www.agrifutures.com.au/about/corporate-documents/
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>AOAC</td>
<td>Association of Analytical Communities (former Association of Official Analytical Chemists)</td>
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<tr>
<td>ATTIA</td>
<td>Australian Tea Tree Industry Association Ltd</td>
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<td>BP</td>
<td>British Pharmacopeia</td>
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<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
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<td>COP</td>
<td>Code of Practice</td>
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<td>Cooperative Research Centre</td>
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<tr>
<td>GHS</td>
<td>Globally Harmonised System (of chemical classification and hazard communication through labelling and Safety Data Sheets)</td>
</tr>
<tr>
<td>GMP</td>
<td>Good Manufacturing Practices</td>
</tr>
<tr>
<td>IP</td>
<td>Intellectual Property</td>
</tr>
<tr>
<td>ISO</td>
<td>International Standards Organisation</td>
</tr>
<tr>
<td>KPI</td>
<td>Key Performance Indicator</td>
</tr>
<tr>
<td>MRSA</td>
<td>Methicillin-resistant Staphylococcus aureus</td>
</tr>
<tr>
<td>MT</td>
<td>Metric Ton</td>
</tr>
<tr>
<td>NSW DPI</td>
<td>New South Wales Department of Primary Industries</td>
</tr>
<tr>
<td>OH&amp;S</td>
<td>Occupational Health and Safety</td>
</tr>
<tr>
<td>PBR</td>
<td>Plant Breeders Rights</td>
</tr>
<tr>
<td>Ph Eur</td>
<td>European Pharmacopoeia</td>
</tr>
<tr>
<td>PHA</td>
<td>Plant Health Australia</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research &amp; Development</td>
</tr>
<tr>
<td>RD&amp;E</td>
<td>Research, Development and Extension</td>
</tr>
<tr>
<td>REACH</td>
<td>Registration, Evaluation and Authorisation of Chemicals</td>
</tr>
<tr>
<td>RIRDC</td>
<td>Rural Industries Research and Development Corporation (now AgriFutures Australia)</td>
</tr>
<tr>
<td>SCCS</td>
<td>Scientific Committee on Consumer Safety</td>
</tr>
<tr>
<td>SCU</td>
<td>Southern Cross University</td>
</tr>
<tr>
<td>SWOT</td>
<td>Strengths, Weaknesses, Opportunities and Threats</td>
</tr>
<tr>
<td>THR</td>
<td>Traditional Herbal Remedy</td>
</tr>
<tr>
<td>TTBP 1</td>
<td>Tea tree Breeding Program from 1992 - 2017</td>
</tr>
<tr>
<td>TTBP 2</td>
<td>Tea tree Breeding Program from 2017 onwards</td>
</tr>
<tr>
<td>TTO</td>
<td>Tea Tree Oil</td>
</tr>
<tr>
<td>USA</td>
<td>United States of America</td>
</tr>
<tr>
<td>USP</td>
<td>United States Pharmacopeia</td>
</tr>
<tr>
<td>VRSA</td>
<td>Vancomycin Resistant Staphylococcus aureus</td>
</tr>
</tbody>
</table>
Tea Tree Oil Program
RD&E Plan 2018-2022

AgriFutures Australia Publication No. 18/002
AgriFutures Australia Project No. PRJ-010881

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