

# National Fire Ant Eradication Program



## 1. Introduction

Organic Operators of Australia (OOA) is a not-for-profit industry body, representing the interests of certified organic and biodynamic operators in Australia.

Our members have raised concerns about the NFAEP which we have raised with the Australian Department of Agriculture. The Department is both the government authority over agriculture and a standard setting body for the export of certified organic products from Australia.

## 2. Structure of the Australian Organic industry

The Department has declared that the National Organic and Biodynamic Standard (Export Standard) is applicable to products labelled certified organic exported from Australia only. The Export Standard is not regulated in the same way for products that are labelled within the Australian domestic market.

It is important to note that the export standard is intended to align Australian exported organic products with organic standards in other countries. It must be observed therefore that use of prohibited chemicals may still be subject to foreign organic standards for imported products, outside of the control of the Department.

Several private organic standard owning companies exist in Australia. These companies publish standards which afford the use of certification logos on products. In some cases, certification to these standards is provided by Certifying Bodies.

### Organic Industry Bodies

- Organic Operators Australia (OOA)
- Australian Organic Limited (AO)
- National Association Sustainable Agriculture Australia (NASAA)

### Organic Standard owning organisation active in Australia includes:

- Australian Department of Agriculture
- Australian Organic Limited (AO)
- National Association Sustainable Agriculture Australia (NASAA)
- Biodynamic Research Institute (BDRI)
- Southern Cross Certified (SXC)
- Standards Australia (include OOA as a key stakeholder)
- Foreign organic standards bodies  
(USA, Japan, Thailand, India, Europe, New Zealand, Taiwan, United Kingdom etc)

## Organic Certifying Bodies in Australia

Australian Certified Organic (ACO)

NASAA Certified Organic (NCO)

Biodynamic Research Institute (BDRI)

Southern Cross Certified (SXC)

Organic Food Chain (OFC)

Certified auditors for Australian Standards (AS) and International Standards (ISO)

Foreign certifying bodies (usually attached to foreign standards organisations)

In relation to the NFAEP:

1. Organic industry bodies should be consulted to engage with industry stakeholders and identify impacts and remediation of collaborative actions with the NFAEP prior to any long-term implications from actions taken.
2. The standard owning organisations should be consulted in regard to how the use of prohibited chemicals would be assessed under the respective standards.
3. The Certifying Bodies should be consulted in regard to:
  - a. The audit process and reporting obligations of the operators,
  - b. The certification status of the certified operator resulting from the use of prohibited chemicals, and
  - c. Minimum period of suspension before certified organic status can be resumed.

Outside of the scope of OOA is the consultation that would likely be needed in regard to other industry bodies, certification organisations and advocacy groups including sustainability certifications, regenerative and agroecology certifications, animal rights, environmental groups, indigenous advocacy groups, aquatic and marine advocacy groups, water preservation groups. Together with the community representation in each of these regions prior to any roll out.

### 3. OOA engagement

This document has been prepared after consultation with organic operators, subject experts both organic and non-organic oriented, environmental groups and indigenous advocacy groups.

While we have reported on criticisms of the NFAEP, we have done so to communicate the issues which may have not yet been considered, and as a basis for proposed improvements for all stakeholders to be implemented without delay.

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*Chair, Organic Operators Australia*

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# The current program

## 1. Duration of the fire ant invasion in Australia

- a. Began in Brisbane port 23 years ago (2001)

## 2. Funding

- a. NFAEP has spent \$640M so far.
- b. \$500m awarded to the program moving forward (2024/25).

## 3. Human Health Impact of Fire ants

- a. Human health concerns exist where anaphylaxis may develop after repeated bites, and ultimately lead to death. This is the case for 'jumping jacks' in Victoria which is an indigenous biting ant.
- b. The Australia Institute has extrapolated the potential medical costs arising from fire ant invasion.

### Ten electorates to be most severely affected by fire ants

State electorate	People stung per year	People needing medical attention per year	People with anaphylactic reaction per year	Total medical costs per year
Coomera	25,795	1,935	516	791,913
Bundamba	21,450	1,609	429	658,506
Jordan	20,736	1,555	415	636,595
Logan	19,718	1,479	394	605,327
Hill	17,133	1,285	343	525,983
Woodridge	21,354	1,602	427	655,559
Gympie	16,277	1,221	326	499,707
Nanango	15,747	1,181	315	483,442
Murrumba	20,624	1,547	412	633,160
Maryborough	15,878	1,191	318	487,467

Source: The Australia Institute / [Get the data](#)

## 4. Other impacts of fire ants

- a. Impacts to the communities as noted on the National Fire Ant Program website: [National Fire Ant Eradication Program \(fireants.org.au\)](https://fireants.org.au)

## 5. Invasion metrics

- a. NFAEP reported that fire ants are now expanding at 4km per year in Australia. That rate is lower than the expansion in China and the USA.
- b. The reason for the slower rate of invasion in Australia is stated to be a result of the success of the NFAEP to date.

# What is the problem from the organic industry perspective?

## 4. Health impact

- a. We dispute the severity of the human health impact necessitating the high impact response proposed by the NFAEP.
  - i. There have been no human deaths recorded as a result of the fire ant invasion to date.
  - ii. Communities have in the past managed the risk of harm through individual nest treatment and exclusion zones. Recognising that better treatment options are sought after to improve management of the risk of harm.
- b. Health impact of the mandated treatments on livestock and non-targeted species however is significant including rapid decline and death.
  - i. We suspect that the health impacts of the mandated treatments were not within the scope of the program, nor balanced with the human health impact noted by the NFAEP.
  - ii. There are many observed health impacts on animals including death after broad scale treatment.
  - iii. There is at least one report of observed cognitive decline and liver dysfunction in livestock within 6 weeks of NFAEP aerial treatment resulting in death.
  - iv. We recommend the NFAEP consult vets within the treatment zones to monitor health impact on livestock and domestic pets.
  - v. We recommend the NFAEP consult environmental assessment of the impact on non-targeted species.

## 5. Environmental impact statement

- a. Is there an Environmental Impact Statement for the mandated treatment options specific to the eradication zone?
  - i. Were indigenous species identified that would be impacted by each of the mandated treatment options?
  - ii. Noting that there is a requirement for landholders to move their livestock off property for a minimum 3 weeks during treatment.
  - iii. What arrangements are in place for indigenous and non-targeted species within the treatment zone?



iv. How is the concentration of treatment being managed to ensure compliance to APVMA label mandates, noting that APVMA labels are assessed for controlled agricultural use and not intended for broad environmental applications.

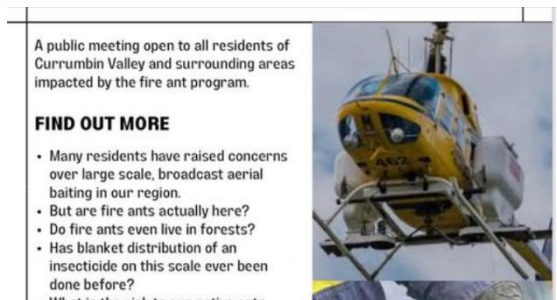
1. See Treatment section below.

v. What work has been done to identify areas where fire ants are NOT present within the treatment zone including areas where fire ants cannot establish, and areas where they are not present?

1. Application in such areas is a waste of monetary resources

2. Treatment of non-infested areas may in fact accelerate invasion of fire ants by eradicating non-targeted species which may be the reason for the local lack of infestation.

3. Unnecessary health impact and risk to aquatic life and long term downstream impacts on waterways.



vi. What research has been done on understanding manifestation of Fire ants in the Australian environment – which is likely different to the experiences in other countries.

1. Is eradication even possible? Some dispute this can be achieved.

2. Instead, should funding be applied to suppression and research for better outcomes.

3. What research has been done on natural competitive species of ‘jumping jacks’ for example and its effectiveness against Fire ants.

a. (Note resources from US and South America)

**Project Title: Exploring Fire Ant Behaviour and Biology in Australia for Sustainable Pest Management in the Australian Meat and Livestock Industry**

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Since 2001, the persistence of red imported fire ants (*Solenopsis invicta*) in South East Queensland has raised questions about the efficacy of the current eradication approach and the tools employed in this effort. The existing strategies aimed at eradicating these ants have proven to be ineffective, and several factors are constraining the success of the current eradication program. The failure to eradicate these ants implies their establishment, necessitating the development of effective management strategies that complement eradication efforts.

**Current issues with regards to red imported fire ant *Solenopsis invicta* management strategy:**

1. **Lack of Fire Ant Behaviour and Biology Studies in Australia:** A critical gap in our knowledge pertains to the behaviour of invasive pests like fire ants in the newly invaded Australian environment. Understanding their behaviour is essential for developing best management practices. Presently, the management strategies rely on overseas data that may not be directly applicable to Australian conditions. Moreover, there is a dearth of data regarding fire ant behaviour and their interactions with native fauna in Australia, which is crucial for devising effective management strategies.
2. **Effectiveness of Baits:** The effectiveness of current baits in controlling fire ants is a significant concern. Questions arise about whether these baits perform as expected or if there are issues related to their palatability. Most current baits are generic, and there is a lack of published data on their performance in controlling fire ants in Australia, especially considering seasonal variations. This is crucial because ants exhibit temporal food preferences based on environmental conditions.
3. **Resistance Issue:** There has been no comprehensive study conducted to assess the presence of resistance, if any, in red fire ants to the current active ingredients used in Australia. It is imperative to investigate whether there is any resistance developing to substances like fipronil, indoxacarb, or other primary actives employed in the fire ant eradication program.

To address these inquiries, it is imperative to initiate studies on the behaviour and biology of fire ants in Australia. This includes conducting experiments to test the palatability of various baits and assessing resistance levels to optimize management strategies. Furthermore, given the prolonged presence of this pest in the South East Queensland region, there is an opportunity to explore the potential existence of natural enemies or other biological control agents, such as entomopathogens, which could enhance fire ant control in an integrated and sustainable manner.

- b. US farms report managing fire ants along with other pests as a part of Business As Usual, notably not as an existential threat.
  - i. What investigations have been made to cost the ant pest management for Australian agriculture?
  - ii. What investigations have been made into the incremental cost of dealing with fire ant pests, as against non-fire ant pests in Australian agriculture?

## 6. Treatments

- a. The apparent exclusion of environmental impact and remediation has skewed the consideration of mandated treatment options. Further this oversight causes bias toward precisely the treatment options that cause the environmental damage as a collateral effect

- b. How is aerial and other broad application methods adhering to APVMA label requirements?
- i. I have at least one report of treatment concentration exceeding label usage rates.
  - ii. How is aerial baiting being mapped and quantified with outcomes on specific infested areas?
- c. Fipronil
- i. Fipronil contains PFAS

1. PFAS is a 'forever chemical' and a known strong carcinogen.

Table 2 PFAS active ingredients approved in the United States and associated registration dates. [OPEN IN VIEWER](#)

CAS No.	Registration date	Active ingredient name <sup>a</sup>
50594-66-6; 62476-59-9	20 August 2018; 20 March 1987	Acifluorfen; sodium acifluorfen
1861-40-1	22 March 1972	Benfluralin
352010-68-5	24 April 2015	Bicyclopyrone
82657-04-3	2 October 1985	Bifenthrin
1207727-04-5	14 January 2021	Broflanilide
63333-35-7	3 October 1985	Bromethalin
122453-73-0	19 January 2001	Chlorfenapyr
180409-60-3	27 June 2012	Cyflufenamid
400882-07-7	9 May 2014	Cyflumetofen
97886-45-8	18 June 1991	Dithiopyr
55283-68-6	2 May 1989	Ethalfuralin
120068-37-3	1 May 1996	Fipronil

2. Fipronil is a prohibited chemical for use on certified organic land.
3. The department of Climate Change Energy, Environment and Water, issued their Toxicant default guideline values for aquatic ecosystem protection – Perfluorooctane sulfonate (PFOS) in May 2023. PFOS is within the group of PFAS chemicals.
  - a. [Toxicant default guideline values for aquatic ecosystem protection Perfluorooctane sulfonate \(PFOS\) in freshwater - Technical brief - May 2023 \(waterquality.gov.au\)](#)
  - b. In the case of PFOS, the guidance is for 0.0091 ug/L in water.
4. OOA has read USA studies have concluded that PFOS may be derived from earthworms accumulating PFAS from soils.

d. S-Methoprene

- i. S-Methoprene is a prohibited chemical for use on certified organic land.
- ii. S-Methoprene has a half-life of 10-14 days meaning that half of the substance remains after this time, **not none**.
- iii. 10-14 days is the result NOT for pelletised or block form which is much longer. (NFAEP is using pellet or block form in aerial treatment)
- iv. S-Methoprene is an endocrine-disrupting chemical (EDC) which can interfere with human hormonal systems and potentially affect reproductive health.



- v. Pellets that land on roofs and or end up in water tanks, water troughs, dams have different impacts on the environment, animals and plants - see note vi
- vi. S-Methoprene is HIGHLY TOXIC to aquatic life and if applied broadly can land in water catchment areas, dams, natural waterways, water tanks, water troughs, and household water collection systems. Each of these have implications for long term contamination of rivers and oceans. Has the public health cost been factored into the overall eradication strategy plus cost of biodiversity loss, recreational fishing loss and associated cost of flow-on effects to businesses
- vii. Broad application including aerial application risks the application of poisons harmful to bees including native bees across large areas where they are known to live in the ground.
- viii. Broad application risks eradication of native competitive species which may explain the slower invasions rates observed in Australia.

**7. Eradication costs**

- a. Is eradication possible?
  - i. Expert commentary researched by OOA is that eradication of Fire ants in Australia is no longer possible.
  - b. It appears that the scope of the program was eradicate fire ants at the lowest cost solution over the greatest area. Broad chemical application is the obvious answer in this case if the adverse impacts of the contamination are out of scope. This however externalises the cost of the environmental and health impacts to the wider community.
  - c. Out of scope costs:
    - i. Cost of remediation of land and aquatic environments
    - ii. Cost of re-establishment of non-targeted species populations (bees, frogs, fish, crustaceans, native ants, native competitive species to fire ants etc)
    - iii. Loss of income for organic land
    - iv. Loss of livestock



## 8. Repeated Applications (social & environmental impact)

- a. Repeated treatment on organic land will increase the contamination and environmental damage.
- b. NFAEP states 3-6 treatments per year until 2026. (US recommends max. 1-2 applications despite the invasion rate being much higher)
- c. Overexposure to chemicals causes immunity of fire ants to the chemical.
- d. Repeated treatment on organic land will perpetuate the cancellation of organic certification. See Organic & Biodynamic Certification section below.

## 9. Organic & Biodynamic certification

- a. The national standard prohibits use of Fipronil and S-Methoprene.
  - 6. At this time, the treatment option is non-compliant with the National Standard for Organic and Biodynamic Produce (the National Standard) due to the presence of a non-approved chemical substance – S methoprene.
  - 7. Under the Export Control (Organic Goods) Rules 2021, the export of organic or bio dynamic goods **is prohibited** unless the exporter of the goods holds an organic goods certificate (OGC).
- b. Use of prohibited substances results in cancellation of organic certification. To reinstate certification will require 1-3 years including soil tests to reach full organic certification again.
  - i. This is not consistent with the DAFF advice which appears to suggest that organic status can be reinstated in 3 weeks.

### Advice

13. Where treatment for fire ants has occurred:

Produce that has had direct contact with treatment must not be sold as organic or bio dynamic.

- a. Crops must not be sown or planted in the area(s) that were treated for a period of not less than three weeks after the date of bait application.
  - b. Livestock must not be returned to the area(s) that were treated for a period of not less than three weeks after the date of bait application.
  - c. If livestock is not removed prior to and from the area(s) that were treated, the livestock and/or its produce must not be sold as organic or bio dynamic.
  - d. Land and certified produce may be subject to sampling and laboratory analysis following treatment.
- c. The national standard is applicable to exported products **ONLY** and is **NOT** applicable to domestic labelling of organic products. The numerous private organic standards address the use of prohibited substances in a number of ways, including loss of certification for up to 3 years.
    - i. More importantly whilst a derogation is available here in Australia it is not valid in any of our export markets which are worth **280 billion dollars**, this opportunity will be denied to organic certified operators. What compensation will be given to those who are affected?

- ii. From an operator perspective the additional cost of treatment for fire ants is incomparable to the total loss of business revenue for 3 years.

## 10. Community Resistance

- a. Land holders will apply to council on the grounds of health and safety implications arising from broad application of S-Methoprene and Fipronil including impacts of female human fertility. Section 9 of Biosecurity Act 2014(state govt) must not override any other Act including Health, meaning that under legal challenge the landholder has the right to decline biosecurity mandates on the basis of health concerns.
- b. Psychological impacts of mandatory / enforcement of access and treatment of private property. Intimidating and forceful entry onto property is particularly offensive and out of proportion to the risk threat.

## 11. Proactive Approach

- a. Organic producers are known as being responsible landholders with regard to environmental risks and pest infestations. As per the treatment programs for fruit fly, varroa mite and avian flu.
- b. The organic sector must be consulted and provided the opportunity to be proactive under a specific program with a wider range of treatment options.

## What is needed?

### 12. Rationalisation of the true threat and the threat response.

- a. This is not an existential threat to human survival.
- b. Other indigenous ant species exist in Australia with similar health impacts, but which have not been the subject of such treatment measures.

### 13. Scope of the NFAEP program

- a. NFAEP must include in the scope of the eradication program:
  - i. Remediation costs of land and aquatic environments including natural flora, fauna.
  - ii. Funding for research projects on Fire Ants
  - iii. Compensation for Certified Organic businesses financially harmed by the program must be compensated up to full income replacement for the period until full organic certification can be re-established and commercial production capacity returned.
  - iv. Non-toxic treatment options such as citrus oil and other direct application alternatives. (Diatomaceous Earth)
  - v. Targeted treatment options and exclusion zones added to organic certification. (cost implications)

- vi. Options to be excluded from broad treatment applications.
- vii. Compensation when contamination occurs.

## 14. More options for consultation with land holders

- a. More information on treatment options
  - i. It is imperative that non-toxic treatment options are considered and included in the treatment options.
  - ii. Expert commentary:

### **Lack of alternative management approaches and tools**

The practical difficulties of slowing an invasion of fire ants are decidedly challenging. While use of toxic baits and contact insecticides (if used correctly and according to label instructions) are some of the best available tools, it is important that the *National Fire Ant Eradication Program* consider that there are significant shortcomings of a “pesticide only” approach to managing fire ants. Of particular concern, is the lack of inclusion of any approaches that mitigate non-target pesticide impacts in school yards, recreational areas, human food production agroecosystems, hay production agroecosystems, in close proximity to aquatic ecosystems of all types, certified organic agroecosystems, and in sensitive ecosystems where pesticide applications are neither desirable or (in some cases) not permitted. Through my work on the method and technology required to make the system effective, low-pressure hot water mound injection has now become an effective, entirely non-toxic alternative to pesticide applications for fire ant management that can be used as a stand-alone management tool or as a complement to baiting programs to help reduce the pesticide burden as needed. I encourage the program to consider the supporting materials I am providing and to work to integrate the technology and method into the broader fire ant management tool-kit.

Hot water is in increasing use here in the US to manage fire ants in sensitive wildlife areas and organic farming systems where pesticides cannot be used. It is a viable management

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tool, ready for use, and I look forward to helping the *National Fire Ant Eradication Program* adopt the method and technology for use in their program. In summary, I strongly disagree with the current prophylactic approach to fire ant management and suggest that alternative approaches, like the hot water method, to fire ant management be considered. The current approach is not sustainable, excessively costly, and ultimately may hasten fire ant spread and establishment. This outcome runs directly counter to the goals of the Australian government’s fire ant management program.

- b. More consultation on treatment options
- c. Options for individualised treatment options
- d. More support for those already affected by the NFAEP
- e. Recognising that the QLD Govt has sought to nationalise the cost of the eradication program, so too should organic operators, nationalise the protection of certified organic properties.
  - i. The threat arises from areas not managed within the organic standards.
  - ii. The loss of certified organic properties has a wider community and economic impact, including loss of market access.

## 15. International collaboration

- a. More research and collaboration with organisations in other countries and treatments used.

## 16. Organic industry engagement (OOA)

- a. The organic industry should engage with the NFAP to provide solutions aligned to the objectives of NFAEP & Department of Agriculture.
- b. The organic industry should quantify the financial impact of the NFAEP including:
  - i. Number and location of certified organic properties.
  - ii. Aggregated financial impact of de-certification until 2029 for subject properties.
- c. By using the products advocated currently by the NFAP, **all exports** would be considered non-compliant since all treatments being utilised are prohibited in all of our export markets!
- d. Note: the previous advice that rapid degradation of S-Methoprene did not take into account pelletised and block form degradation rates and did not take into account the contamination of water (water tanks, water troughs, dams, water runoff, ground water) and other externalities of the treatment, which are now better understood.
- e. Excerpt from an expert commentary

### Other Reference Notes

#### Alternative treatments

Boiling water by direct application

Diatomaceous earth

A citrus peel extract, compost tea and molasses

Nest treatment by Trevor Hold

#### Existing treatments in designated areas

Where fire ants are identified on organic properties that cannot be treated by the above methods – these areas to be mapped and included in the Organic Management Plan as treated by chemical methods (as per existing chemical incursion within organic standards) and these land areas designated as ‘out of organic production for a designated period of time (subject to clear soil testing).

Fire Ant Resource page re Fire Ants from US where they are endemic

<https://ant-pests.extension.org/links-to-other-websites-about-fire-ants/>