Thursday, 13 August 2020

The Review Panel
Department of Agriculture, Water, and the Environment
Canberra
reviewsubmissions@agriculture.gov.au.

Re: 2020 Issues paper—review of the agvet chemicals regulatory framework

To the Review Panel

This submission highlights the needs and concerns of the Australian certified organic sector in relation to the agvet chemical regulation issues paper, and offers suggestions to encourage and support coexistence, improved sustainability, and protection for the environment.

While some in the agvet sector may dismiss the concerns raised based on the premise that small amounts of agvet chemical residue pose no risk to health, biodiversity or the environment, the market for certified organic food exists because many people around the world mistrust this view and choose to avoid such residues in their food.

Whether you agree with these views or not, the Organic Industry is market driven and continues to grow rapidly, and now makes an unequivocal contribution to sustainable food production, based on the social licence afforded it by the community.

We hope that this submission will be received and considered as a constructive contribution.

Your sincerely

Glenn Schaube
NASAA Organic Chair

Working cooperatively for food security and diversity, producer and consumer choice.

A submission on behalf of the Certified Organic Industry of Australia

to the

20202 Issues paper—review of the agvet chemicals regulatory framework

Table of Contents

About NASAA Organic

The National Association for Sustainable Agriculture Australia (NASAA) is a leading organic industry association in Australia.

NASAA plays a critically important role in supporting and promoting the adoption of organic practices that lead to safer and more sustainable food production systems.

The association was formed in 1986 to support the development and education of the organic industry and consumers about organic, biodynamic and sustainable agricultural practices.

NASAA has developed an enviable reputation as a ground-breaking and innovative organic industry association that is forward-thinking and that actively seeks to progress the organic industry for the benefit of members and the industry in general.

NASAA continues to be at the forefront of organic industry development. It was the first organic industry association in Australia, the first to develop an Organic Standard, and the forerunner in establishing strong international trading ties for organic exports, which includes establishing accreditation with IFOAM—Organics International. In recent years, this includes being the first organic industry association to open more affordable access to organic trading markets in China.

Our subsidiary business, NASAA Certified Organic (NCO), certifies organic commodities to meet all domestic and international export market requirements. NCO certifies around 32 percent of the 3200 plus organic certified Looking internationally, with an estimated 21,000 individual operators certified to the NASAA Organic and Biodynamic Standard. NCO also has the largest area of land certified to organic production compared to any other organic certifier in Australia and overseas.

The NASAA Organic Spring Leaf product label is recognised here and overseas as upholding the highest standards of integrity and benchmarks for the organic industry.

Increasingly, NASAA has assumed a strong policy and advocacy role, and supports the adoption of a domestic standard supported by the current National Standard framework for exports, and advocates for regulatory and policy reforms on behalf of the organic industry.

With a national office based in the Adelaide Hills in South Australia, NASAA Organic is a non-profit company limited by guarantee comprising an association of members.

What is organic food production and farming?

Organic Certification is an internationally recognised quality assurance system for ensuring organic food, fibre and cosmetic production programs meet bona fide organic production standards.

Organic certification practices include promoting resilience through biodiversity by growing a variety of crops, preventing soil erosion and improving soil quality, conserving energy, protecting wildlife, stream banks and watersheds, as well as avoiding the use of synthetic or artificially-produced insecticides, herbicides, fertilisers or GMOs (genetically modified, transgenic organisms).

Hence, organic food, fibre and cosmetic production systems[i] are founded on the principle of caring for community, land and product to achieve sustainable, healthy and productive ecosystems—soil, plant, animal and people.

Organic Standards[ii] provide a practical set of operational rules that help producers and operators ensure they are meeting the expectations of the industry and consumers who buy organic food. Organic Certification[iii] ensures that the bone fide of their organic status is verified by an independent certifying third party such as NCO (NASAA Certified Organic), which in turn is accredited by independent regulators.

Executive summary

As sustainable energy is now part of our energy future, so too is organic agriculture part of our food future.

Importantly, organic food production continues to grow and make an ever-increasing contribution to world food security while helping to redress global environment issues such as loss of species and biodiversity, arable soil and potable water degradation.

At an estimated 2019 global value of US97.0 billion, the organic industry has emerged as a profitable and successful producer of food, supported by environmentally responsible farming practices.

In Australia, this has occurred without dependence on imported chemical inputs. Hence, much can be learned and shared for the benefit of conventional food producers and organic producers through building more cooperative relationships.

At around 1.4 per cent of global farmland, the organic industry is still small in comparison to conventional food production, however the need to recognise and support greater commercial security for Australian organic producers is an issue of national importance. Its success and contribution to Australia's economy is now unequivocal.

Enshrining, within agvet regulations, provisions that ensure Australia's organic industry can continue to grow and coexist alongside conventional production, without fear of contamination and the degradation of the natural environment, is vitally important.

Equally, the technologies, knowledge and skills developed by the organic sector during the past 40 years can make a significant contribution to improving the sustainability and community license of the agvet chemical agriculture sector.

This is the thrust of this submission and the suggestions put forward.

Proposed vision statement

Why is a healthy organic industry important to Australia?

The need to accept and support greater commercial security for organic producers[iv] is now an issue of national importance. Its success and contribution to Australia's economy is now unequivocal.

The IBISWorld December 2019 report Organic Farming in Australia industry trends (2014/2019)[v] found that the average growth rate of the organic industry was 17.7% per year. Global demand for organic produce is rising substantially due to increasing health concerns about food. Australian industry revenue is expected to increase at an annualised 13.5% over the five years through 2019-20, to US$1.8 billion. This includes anticipated growth of 14.2% in the current year.

In 2017, global organic production[vi] was valued at US$97 billion worldwide, and domestically around AU$2.6 to the domestic economy. With 35.7 million hectares certified to organic production, Australia has the largest area of land certified to organic production or 51% of the organic land worldwide. The organic industry represents around 3% of Australia's farmgate value.

There are approximately 3200 certified operations in Australia covering producers, processors and handlers. Approximately two-thirds[vii] of certified organic foods produced in Australia are exported to 61 different countries. Top export destinations for organics from Australia by tonnes were the USA, China, New Zealand, South Korea, and Singapore.

The proposed 'vision statement' for the agvet regulatory system that would take into consideration the organic industry sector interests is:

An Australian agvet chemicals regulatory system that provides all Australian primary producers and veterinarians with timely access to a range of independently approved, safe agvet chemicals for Australian conditions, encourage competition and choice, preserve and protect producer ability to produce food using other food production systems and tools, while protecting human, animal, plant and environmental health.

Core objectives

During the past 40 years the organic industry has emerged as a viable and productive contributor to world food supplies without the use of artificially-produced chemical inputs or dependence on imported chemical inputs.

Consequently, much can be learned and gained from an open-minded consideration of organic practices.

The following four limitations identified in the Introduction to the Issues Paper highlight challenges to access and competitiveness and provide useful insights when considering the proposed 'hierarchy of principles' with a view to achieving the objective of providing users with access to safe chemicals:

- with the growth in imports it is likely to result in Australia becoming largely a price-taker for the cost of agvet chemicals
- Australia's relative remoteness, highly variable climate, large internal distances, and small market size (2 to 4% of the global agvet chemicals market) act as cost barriers that can slow or prevent the availability of agricultural chemical and veterinary medicine products that are more readily available to international competitors
- the small size of the Australian market for these products and the tyranny of distance for distribution are not things that can be easily fixed by governments
- Australian farmers do not have access to the same chemical inputs as their competitors, they must absorb higher production costs, lower production per hectare, less flexible production practices, slower time to market and other penalties avoided by their overseas competitors.

While the proposed solution to these issues is to remove regulatory barriers and simplify processes, we do not support removing the objective of fostering domestic chemical manufacturing.

Local industry and other responses can provide a broader range and mix of solutions for Australian producers, adding to their resilience and price competitiveness and a more viable Australian-based agvet chemical sector.

As outlined in our response to the Proposed Vision Statement, Australia's organic sector now makes a significant and rapidly growing contribution to food production and the prosperity of the agricultural sector in Australia.

Importantly, it is hard to conclude that one system is more profitable than the other because like conventional agriculture, success often depends on site and soil variation, crop specific factors, availability of marketing opportunities, labour availability, agronomic factors, and the skill of the farmer.

However, given the relatively small size of the organic sector, compared to conventional chemical-based agriculture, we are not suggesting that conventional practices be abandoned for organic, but that organic agricultural practices provide solutions that can be incorporated and encouraged in Australia's agvet chemical system.

The following studies support the veracity of investing in a agvet system that supports the development of organic veterinary and agricultural solutions to unwanted animal, plant and disease in Australia, for the benefit of local producers and economy.

Back in 2009 United Nation's research[viii] indicated that organic farming experiences higher prices with lower input costs than conventional farms, which is often offset by lower productivity in the first few years as follows:

- Yields – American studies showed that in wetter areas (e.g., the Corn Belt), conventional yields are higher than organic, but in dry areas, organic yields surpass conventional. In developing countries, organic yields are generally higher than conventional, but are much higher under less favourable conditions (e.g. drought). When comparing relative yield and composition of vegetables over 12 years, conventional farms yielded 24% more, but organic vegetables had 28% higher dry matter.

- Quality – Organic produce has been found to have higher levels of vitamins, minerals, healthy fatty acids and phytonutrients.
- Production cost – Production costs are generally lower for organic farms. Most European studies found that variable (operating) costs are 60–70% lower but fixed costs were higher, compared to conventional farms. Overall, the total production costs of organic farms were lower in the studies.
- Labour – Labour costs are often greater on organic farms. European studies found labour costs to be 10–20% greater than on comparable conventional operations.
- Debt – Conventional farmers have significantly higher debt loads than organic farmers, particularly those in developing countries.

Since 2009, the Farming Systems Trial (FST)® at Rodale Institute is America's longest running side-by-side comparison of organic and conventional agriculture which began in 1981. The systems used in the Rodale study represent organic dairy or beef operation, an organic cash grain system, and a conventional synthetic grain farm. Data collected throughout the ongoing trial measures differences in soil health, crop yields, energy efficiency, water use and contamination, as well as the nutrient density of crops grown in organic and conventional systems managed with different levels of tillage.

Among the many advantages, it has found that the organic farming system:

- yields match conventional yields after a five-year transition
- outperforms conventional farming in years of drought by up to 40%
- earns 3–6 times greater profit for farmers
- leaches no toxic chemicals into waterways
- uses 45% less energy
- releases 40% fewer carbon emissions
- water volumes percolating through soil were 15–20% higher than the conventional systems and are more profitable than conventional ones.

What organic management practices could improve access and competitiveness?

Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and good quality of life for all involved. Local production, marketing and supply are encouraged, to build community resilience and economic and food security.

Practices that secure unwanted animal, plant and disease controls continue to be developed through practical on-farm development, 'citizen science' with many highly qualified organic producers applying and sharing science-based research principles to developing on-farm solutions to problems. A growing body of data drawn from international trials and peer reviewed studies attests[ix] to the efficacy of organic solutions and augment Australia's organic industry development.

The organic industry has spurred many new and innovative agricultural input businesses that supply effective pest and disease control solutions, crop fertilisers and soil amendments ,sanitisers and cleaners that can advise and supply conventional producers. Such a program built into the landscape of solutions provided to conventional producers would spur further local research and product development, employment growth and local industry opportunities, as well as improve access to supply.

Supporting and encouraging local Australian production in place of imports, including lower-cost suppliers of efficacious organic inputs, will provide a range of alternatives and encourage the development of innovative solutions to make Australian agriculture more competitive and less dependent on imported products. Therefore, the following is suggested:

Proposed Hierarchy of Objectives

To protect the health and safety of people, animals, plants and the environment while providing safe timely access and choice of agvet chemicals and alternative solutions

- To protect trade
- To promote growth and competition in local primary industry and agricultural input manufacturing
- To enhance Australia's agricultural producer competitiveness
- To address Australian producer reliance as a price taker of imported agvet chemicals
- To protect the environment and animal welfare
- To protect human health

Principles and social license

What can be learned from the organic industry sector?

As noted in the discussion paper, the social licence of the agvet chemical industry is under challenge.

The perceived risk of overuse, misuse and even the use of agvet chemicals is an area of debate and is at the heart of community doubt about the safety of agvet chemicals used.

In this regard, organic production systems have emerged because a growing proportion of consumers worldwide, want to consume organically produced food, cosmetics and fibre products that are produced with the lowest possible environmental impacts, and the minimal use of artificial inputs, including agricultural and veterinary chemicals.

The publishing of accumulated research supports the perceived relationship to health outcomes[x] motivating people to buy organic product and to seek out organic certification labels. For example, people are motivated to buy certified organic food[xi] because of a belief in the health and environmental benefits, as well as access, price, control over food choices and food safety as well as social and socio-economic status. A study published during 2016[xii] concluded that organic farming delivers equally or more nutritious foods that contain less or no pesticide residues and provide greater social benefits than their conventional counterparts. A 2018 French study involving nearly 69,000 participants who reported on their dietary intake, concluded that a higher intake of organic food was associated with a reduced risk of cancer of the breast, skin, prostrate, lymph and colon.

Other studies have found that organic foods are much higher in many compounds that in dietary intervention and epidemiological studies have been linked to a reduced risk of chronic diseases, including CVD and neurodegenerative diseases and certain cancers. Results of a meta-analyses[xiii] during 2014, that looked at the composition of organic and conventional meat reported for the first time that there are significant and nutritionally meaningful composition differences between organic and non-organic meat. A 2014 meta-analyses[xiv] of 343 peer-reviewed publications found that concentrations of a range of antioxidants such as polyphenolics were between 28% and 85% higher in organic crops and organic crop-based foods. The study also found that the frequency of pesticide residues was four times higher in conventional crops, and contained significantly higher concentrations of the toxic metal cadmium, than Organic foods.

In response to consumer demand, all major supermarkets now stock organic produce, either in the health food sections or among their conventional produce. There are now many dedicated organic retailer shops, organic farm gate sales and pick-your-own operations that are successful thriving businesses that contribute to Australia's economic prosperity.

Can organic principles help to improve the design of the system?

While the organic industry supports the Principles as outlined in the discussion paper, overuse, and potential abuse of agvet chemicals pose a direct threat to the integrity of organic farmland and industry. Therefore, the organic sector is seeking principles that place a far greater emphasis on reduction, and that protect and improve choice, efficiency, transparency, and responsibility.

Additionally, the increased use of some agvet chemicals in past years contributes to declining social licence.

For example, reported widely as the most used agvet chemical globally, an estimated 8.6 billion kilograms of glyphosate was used globally since 1974, with total use increasing from about 51 million kg in 1995 to about 750 million kg in 2014—nearly a 15-fold jump.[xv] In the US, over 4,000 lawsuits were filed against Monsanto—the company that manufactured this herbicide. Emerging science also reinforces the need for more rigorous or comprehensive testing and controls over agvet chemical use. For example, a recently published report indicates

that species are in decline across the world because of industrial farming and heavy pesticide use, which are threatening food production according to the 2020 Insect Atlas.[xvi]

Naturally occurring substances as defined in the appendices of the National Standard for Organic and Biodynamic Produce are permitted for use in organic production systems for the control of unwanted plants, animals and diseases. However, precautionary principles are applied to these external inputs. For example:

- Where inputs are required, they should be used with care and with the knowledge that even permitted inputs can be subject to misuse and may alter the soil and/or water ecosystems or farming environment; and the use of any product has the potential to introduce unwanted residues and contaminants.
- External farming inputs must be kept to a minimum and applied only on an 'as needs' basis. Inputs must not be used as a permanent measure to support a poorly-designed or badly-managed system.
- Products containing non-active ingredients not listed in the Standard are restricted for use and only permitted where no other listed ingredients can fulfil their role, and they are essential for application of the active ingredient.

Such principles underpin the social licence and reputation afforded to the organic industry by the community and provide a guide to developing the principles for the agvet chemical sector.

How can the organic sector help conventional producers become more sustainable?

Organic agricultural practices can help with resistance management strategies for fungicides, insecticides, and herbicides.

While some are prohibited or restricted because of their broad or non-specific toxicity, naturally occurring minerals, compounds, plant, and animal extracts have proved to be highly successful in managing unwanted life forms in organic food production systems.

In this regard, organic practices could be used to discourage the emergence of resistance by incorporating them as substitutes or 'break controls' to prevent overuse, underuse or repetition of chemical use on the same species.

For example, organic wine grape production faces the same challenges as conventional production, with numerous and strict market standards for minimum residues, yet many organic wine producers do not have the same challenges, are profitable and achieve high quality wines without the use of conventional chemicals. Appendix 1 (Natural origin chemical inputs used in organic viticulture) provides some examples of controls used in organic wine production.

This is not a new concept as many organic management practices have been taken up by conventional producers. Most recently, consumer demand for more sustainable agriculture, producer interest and need for more environmentally sustainable agriculture has seen a significant rise in regenerative agriculture.

Importantly, regenerative agriculture was started by people who are active members of the global organic community[xvii] as a means of bringing the conventional agriculture sector closer to organic practices that are already in use worldwide.

Farming methods promoted under the banner of Regenerative Agriculture have long been championed by organic and biodynamic farmers[xviii] as the original soil health advocates and regenerative agricultural practices represent a forward step along the pathway towards organic production and sustainable agriculture. Reportedly, many conventional farmers feel trapped[xix] by the lack of knowledge required to farm without non-natural chemical inputs, their farms are big and highly specialised, with many carrying operating loans and other debts. In

Australia, regenerative agriculture appears to be emerging as a system that provides conventional farmers with an accessible sustainable alternative without abandoning conventional chemical inputs that are not permitted in organic production systems.

Hence, organic production systems have a lot to offer conventional producers because they provide a solution to sustaining the health of soils, ecosystems and people, relying on ecological processes, biodiversity and natural cycles adapted to local conditions. The Foundation Principles[xx1] state that Organic Agriculture should:

- sustain and enhance the health of soil, plant, animal, human and planet as one and indivisible
- be based on living ecological systems and cycles, work with them, emulate them and help sustain them
- build on relationships that ensure fairness regarding the common environment and life opportunities
- be managed in a precautionary and responsible manner to protect the health and wellbeing of current and future generations and the environment.

Are there opportunities to build local capacity and industry?

The short answer is yes.

Organic practices and principles provide conceptual platforms and practical examples for disruptive control strategies and technologies that are underutilised in conventional production, and an emerging niche area of development that justifies government intervention.

In Australia, local issues need local solutions but they have very low return on investment. Including provisions that support local industry rather than abandoning local manufacturers is a key to ensuring continued growth in local industry and ensuring Australian producers can remain competitive. Additionally, the IBIS 2018 Report[xxi] indicates that Agchem companies are marginally profitable at around 5% of earnings before tax, and are expected to achieve marginal expansion of 1.1% during the forecast five years.

To address the market barriers, greater incentives are required to stimulate local investment as well as address the declining competition in Australia.

In this regard low ecotoxic solutions present real opportunity.

For example, Azadirachtin, which is registered globally in food crops including New Zealand is still unregistered in food crops in Australia. Extracted from Neem plants, this presents an opportunity for an Australian local industry of Neem plantations to both capture and store CO2, but also harvest for Azadirachtin production for local and export markets.

Biological controls such as Trichoderma isolates from Metcalf Biologicals Tasmania are reportedly excellent local isolates that are suited to Australian conditions but remain unregistered due to the cost of registration. Overseas suppliers with less effective isolates are now filling the niche that these products would have filled. The NSW Department of Primary Industry and other Departments of Agriculture reportedly have a number of noxious weed biological controls and other entomopathogenic isolates that are specific to our country that will not be developed due to the cost of Australian Pesticides and Veterinary Medicine Authority registration.

Organic practice and low ecotoxic solutions provide an opportunity to find solutions that balance user, environment, and the safety needs of the public, while ensuring that products supplied are effective for their intended use.

The following principled policy suggestions support achieving improved social licence.

POLICY SUGGESTIONS

Performance

Objectivity – to build social licence

- Provide a broader scope of scientific evaluation, gathering evidence from independent sources outside the agvet chemical sector
- Encourage greater health science and research sector involvement in evaluation and risk assessment
- Engage more positively with organic farm management practices and support shared learning and training programs

Efficiency – to reduce the regulatory burden

- Develop and embed precautionary principles in agvet regulatory principles
- Incorporate incentives to achieve an ongoing decline in the volume of chemicals used
- Achieve reduction targets for maximum allowable agvet chemical residues in foods
- Encourage the replacement of artificially produced agvet chemicals with naturally occurring products wherever possible.

Access

Certainty to ensure system capacity and public confidence

- Guaranteed and appropriate funding arrangements based on the volume of chemicals used.
- Support capacity building for local suppliers and solutions

Shared responsibility

Transparency and accountability – to ensure a cooperative model of regulation and improve social licence

- Fund and support regular user, stakeholder, and community consultancy forums.

Risk versus hazard

Agvet chemicals are generally seen by the community as hazardous and harmful, and hence risk is heavily influenced by predetermined values and beliefs.

This is reinforced by the responsible label content[xxii] requirements and cautionary messages on products. For example, signal headings such as 'caution, poison, and dangerous poison, or cautionary words such as 'keep out of reach of children' all point to the hazardous nature of these products.

Despite reassurances from the manufacturer that the toxicological potency of the substance, and the recommended extent and frequency of exposure, ensures the chemicals or poisons are safe to use, the use instructions and labels on these chemicals are appropriately designed to alert and raise 'alarm bell' responses from consumers and users to ensure that they are aware that the chemicals are poisonous and dangerous if used or handled inappropriately.

Ideally, risk-based assessment attempts to determine the likelihood and damage caused by an adverse event. The significance of the event is measured against the perceived toxicity and subsequent impact on that which is affected, such as in the case of over exposure or dangerous high levels of residues in food, humans or the environment, including plants, animals, water or soils.

Those whose value system tends them towards a low tolerance for any level of exposure see high risk and question safety assurances, often doubting the veracity of the supporting science. As referenced previously, research shows that many in the community do not trust authority reassurance[xxiii] that even if a pesticide residue is detected on a food product, it is safe, and poses no risk to their health and wellbeing. This is the area of debate because opinions, trust and suspicions about the motivation and agenda of manufacturers varies greatly. As a result, agvet chemicals tend to be accepted by the food consuming public as an unavoidable requirement for their food supply, but at the same time, consider them with caution, or to be avoided if possible.

Adding to the complexity of risk assessments are the largely uncontrollable external factors, such as human error, type and amount of chemical used, environmental conditions such as rain, wind and exposure to sunlight, and harvest and post-harvest processing. Given the extensive number of variables,[xxiv] and the many possible adverse consequences, the organic sector supports a precautionary approach to risk assessment as the most appropriate.

In achieving regulation that provides for a balanced approach to risk that engenders a higher level of pubic and user confidence about the safety reassurances provided by authorities and manufacturers, the following is offered for consideration.

POLICY SUGGESTIONS

To limit uncertainty and hence doubt in the veracity of the system as much as possible:

- Employ a combined assessments approach that openly acknowledges the hazards and risks
- Improve transparency by supporting inclusiveness, articulating and widely promoting contributions to risk assessment, their criteria and findings
- Openly and fairly acknowledge doubt and address concerns.

Regulating supply

Why does Australia's organic industry require rigorous regulation of agvet chemicals?

Irrespective of the model or reform mechanism employed, the underlying values, priorities and commercial interests of conventional industry and government will drive the agenda. Hence the model employed is for the conventional agribusiness sector to decide.

However, Australia risks falling behind our contemporaries and major trading partners if we do not protect Australia's organic industry and the conventional industry. Numerous European countries, such as Germany, are setting targets of up to 20% of agricultural land to be under organic certification by 2030.

Poorly administered agvet chemical controls, regulation and on-farm practices pose a significant risk from cross-contamination, and the potential loss of certification and organic market access for Australia's organic producers.

Currently, there is no recognised mechanism to facilitate co-existence that protects the rights of all producers to produce food in a manner they choose, and protect organic and biodynamic producers from loss caused by the effects of cross-contamination such as a loss of market access, and decertification.

This has led to the need for tolerances in Organic Standards around the presence of some chemicals in soils. Tolerances for organochlorines such as dieldrin have occurred because the contamination cannot be removed from the soil – there is now no choice. New or additional occurrences like this must be prevented.

Recognising the findings of OECD countries with Europe or North America in determining if a product is safe for users, consumers and eco-toxicity may require less local regulation, or the need to repeat expert work. This is particularly relevant for products with low eco toxicity and presents opportunity for an improved level of global harmonisation/standards for biological controls (metabolites, spores, cfu) and semio-chemicals (insect pheromones for traps, lure and kill, mating disruption) (See the Appendix for examples of acceptable organic inputs) that fall within certain groups and meet certain environmental and health and safety standards. Such an approach, could help to reduce the need for tight extensive government regulation, monitoring enforcement.

In terms of current risk to the local environment, regulation must include a mechanism to review biologicals and chemicals to protect our unique fauna and flora, including the individual constituents left behind as it breaks down, while providing a platform and incentives for local innovation and growth. This should remain the responsibility of the Department of Agriculture Water and Environment.

For the organic sector, any regulatory supply system should recognise and protect the rights of the organic industry and farmers to choose and control what production system they employ and what chemical inputs are used or that enter their property. Hence the organic industry supports a regulatory regime that ensures the responsible use of agvet chemicals, that is regulated in the interests of all Australians, our flora and fauna and the environment.

Built-in safeguards are needed to prevent cross boundary drift/leakage and protect access and the choice of all food producers (conventional or organic) to use the practices they choose.

Before release, suppliers of products deemed to be significantly impacted by climate/soils like selective herbicides must also submit at least one successful independent replicated field study to prove efficacy of the product at suggested label rates, and the low impact and all residues, not just the active ingredient on the soil and ground water. This is important to not only to protect both users and the environment, but also represents good agricultural practice standards.

Supporting a local industry is crucial to achieving this, because from the outset of testing, they are subject to local regulatory requirements, reputation management and community licence.

Historically, the removal of government regulators in place of self-regulation has proved problematic. A lack of adequate government involvement and resources, despite the stringent documented regulatory scheme currently in place, is self-defeating and resulted in inadequate levels of independent third-party scrutiny.

Laws and regulations that cannot be policed and enforced are not laws at all.

Effective regulation should also include provisions to deter and penalise third parties from deliberate, inadvertent, or negligent cross-boundary contamination. Appropriate penalties and sanctions should apply where a neighbour's soil, water, plant, animal, or ecosystem has been contaminated, with deleterious environmental and commercial effects, that result in loss of income, reputation, or the ability to freely pursue the commercial enterprise of choice.

POLICY SUGGESTIONS

- Reduce the need for strict regulation and enforcement by support to develop and use low ecotoxic solutions and local production
- Ensure all producers that choose not to use chemical-based agricultural practices are protected from loss or damage through cross-boundary contamination
- Provide a mechanism or fund that can be accessed for compensation when commercial loss is incurred.

Shared responsibility

The organic sector prefers that government, manufacturers and users of agvet chemicals share responsibility.

To ensure community trust and licence, this includes transparent well-funded product testing and research that is subject to open peer review.

Additionally, irresponsible application on farm, and poor or limited product and container stewardship on the part of manufacturers, pose a high commercial risk for organic producers, the environment, and downstream users. This includes leakage caused by poor on-farm application and management practice, and poor clean-up and waste disposal systems.

The organic sector therefore supports regulatory responsibilities that are shared and rest with those who are most able to deliver efficient and effective compliance; and that are supported by processes, infrastructure and education that are adequately funded and resourced to ensure compliance, and prosecution for non-compliance.

Certified organic production is subject to rigorous globally recognised quality assurance standards that are administered by an independent third party. Hence the organic industry supports assessor accreditation, formal training for all users, and quality assurance that is monitored and accredited by a well-funded and resourced independent third party.

The industry also supports a statutory duty of care on industry and/or users to strengthen incentives for responsible use of chemical products to minimise risks to human health, animals and the environment.

Chemicals to be regulated

What implications does excluding domestic or urban use products have for the organic sector?

As mentioned previously, the definition of agvet chemicals and their risk is determined by the value systems, priorities, and perceptions of individuals.

The risks and hazard that chemicals pose when manufactured and released into the environment are not predominantly defined by the setting in which they are used, but by the toxicology of the substance and knowledge and skill of the user or handler.

The 2018 IBIS World Report[xxv] which looked at pesticide manufacturing in Australia, found that while the major market for pesticides accounted for just under two-thirds of pesticide consumption, remaining sales are split among households, the export market, and other non-agricultural users.

This illustrates that just because a chemical is used as an antifouling paint, pool additive, or companion product, does not make it any less toxic to the target life form or others that may be adversely affected.

Significantly, as outlined in previous sections of this submission, organic market consumers purchase certified organic products because they expect that conventional agvet chemicals that are the subject of this consultation are not used in food that is Certified Organic. Organic Standards reflect this and producers are required to meet these standards.

For the organic sector, this means that chemicals used in commercial and domestic applications and released into the environment pose a potential risk to organic operations, human health, environment, and the integrity of certified organic products through downstream contamination.

What are the implications of using intuitive titles for the organic sector?

To mitigate risk as much as possible, the organic sector prefers that accurate information and traceability about a product's makeup and origins is made clear in the first instance, on all titles.

Packaging titles that describe 'purpose' are subject to interpretation and the use of misleading phrases.

For example, the example provided of an intuitive title 'plant protection product', could also be described as an 'insect killing poison' if that was its purpose. Both are accurate, but for the uninformed, we can expect that the negative intuitive title containing the words 'poison and killing' to be alarming; while the positive description of 'protection' fails to communicate that the chemicals contained in a product are hazardous. Positive titles can, however, serve to help improve the image and public relations of the agvet chemical in question, but it should not occur at the expense of increasing risk due to ignorance.

Further, medicines are generally understood to be substances used to treat health-related diseases. However, products that are applied to the skin of an animal to ward off parasites for example, while being veterinary in their application, are not medicines, and in this instance the use of the term 'medicine' is misleading.

Additionally, the meaning of the word 'organic' by chemical scientists to describe certain compounds that occur in nature, is vastly different to the common globally-understood term 'organic' used to describe something that has been produced or that occurs naturally. Food produced by organic farming is vastly different to an organic chemical compound. Intuitive titles could include the term 'organic' as an accurate description of a product's chemistry, but these words conveys a vastly different meaning to the public and to agricultural producers.

Titles that include terms like 'protection', 'medicine' and 'natural' infer safety and a benign level of risk or need for concern. Therefore, without very specific parameters, prescribing excluded terms and independent regulation, an intuitive title 'approach increases the risk of incorrect interpretation, the use of misleading titles, and hence risk to people and the environment.

For the organic sector, should intuitive titles be employed, corresponding Australian legislation enacting domestic regulation of the word 'organic', as it is in Europe, Japan and the USA, would also be required to ensure adequate protection of the organic industry, products and services and to prevent confusion across all users and domestic markets.

How might the sole use of smart labels affect the organic sector?

While smart labels such as QR Codes can provide more detailed information online, sole use of these labels to convey comprehensive warnings and use information assumes that users can or will bother to use their device while working with machinery and under time pressures, to access and read all the information and become thoroughly familiar with the risks, appropriate use and disposal. This is an incorrect assumption.

The organic sector supports the current prescriptive labelling scheme because it provides readily available, onsite information that can be accessed and read at the moment of use.

Current prescription labelling does not require an additional device or steps in the process to becoming familiar with the warnings and risks, appropriate handling, and application of the chemical product.

The organic sector prefers that a combination of smart labels and the current prescriptive labelling scheme would afford the highest level of protection and risk mitigation.

Such an approach may also help to improve the social licence afforded the agvet chemical sector in Australia.

Appendix

1. Natural origin chemical inputs used in organic viticulture

Input category	Chemical	Supplier	Australian standards status	USDA standards status	Status: Approved (A) Restricted (R) Prohibited (P)
Fungicide	UniShield (Microthiol Dispers	UPL Australia Ltd	Allowed input	Allowed with restrictions	R - For use as plant disease control, or as an insecticide (including acaricide or mite control). May only be used if the requirements of 205.206(e) are met, which requires the use of preventive, mechanical, physical, and other pest, weed, and disease management practices.
Fungicide	Nordox*	Tanuki Pty Ltd	Max 8 kg/ha	Allowed with restrictions	R - For plant disease control. May only be used if the requirements of 205.206(e) are met, which requires the use of preventive, mechanical, physical, and other pest, weed, and disease management practices. Must be used in a manner that minimizes copper accumulation in the soil.
Fungicide	Airone (Badge x2)	Reylon (Australia) Lty Ltd	Max 8 kg/ha	Allowed with restrictions	R - For plant disease control. May only be used if the requirements of 205.206(e) are met, which requires the use of preventive, mechanical, physical, and other pest, weed, and disease management practices. Must be used in a manner that minimizes copper accumulation in the soil.
Adjuvant	Synertrol Horti Oil	Organic Crop Protectants	Minor ingredient only	Allowed with restrictions	R - May be used as an adjuvant in combination with an allowed pesticide if the requirements of 205.206€ are met.
Fungicide	Eco-Carb	Organic Crop Protectants	Allowed input	Allowed with restrictions	R - May be used for plant disease management only, and only if the requirements of 205.206(e) are met, which requires the use of preventive, mechanical, physical, and other pest, weed, and disease management practices.
Fungicide	Eco-Protector	Organic Crop Protectants	Allowed input	Allowed with restrictions	R - May be used as an adjuvant in combination with an allowed pesticide if the requirements of 205.206€ are met.
Herbicide	Slasher	Organic Crop Protectants	Restricted input	Not NOP	R - SLASHER Weedkiller can be used where mechanical cultivation, mulching and mowing, grazing, flame/steam weeding or biological control is deemed ineffective. Under this definition SLASHER Weedkiller is a Restricted Input
Herbicide	Weedzap	Zadco for Quality Gro (JH Biotech)	Allowed input	Allowed with restrictions	R - May only be used if the requirements of 205.206(e) are met, which requires the use of preventive, mechanical, physical, and other pest, weed, and disease management practices.
Insecticide	Biopest	Sacoa Pty Ltd	Allowed input	Allowed with restrictions	R - May only be used if the requirements of 205.206(e) are met, which requires the use of preventive, mechanical, physical, and other pest, weed, and disease management practices.
Fertiliser	Zinc Sulphate	Redox Pty Ltd	Demonstrated need	Allowed with restrictions	R - May be used to correct documented micronutrient deficiencies.
Fertiliser	Ferrous sulphate	Redox Pty Ltd	Demonstrated need	Allowed with restrictions	R - For use on a voluntary basis, if legally permitted. Shall be used if legally required.
Fertiliser	Manganese Sulphate	Redox Pty Ltd	Demonstrated need	Allowed with restrictions	R - Must not be used as an herbicide, defoliant or desiccant. Micronutrient deficiency must be documented by soil or tissue testing or other documented and verifiable method as approved by a certifying agent.
Fertiliser	Fish Plus	Sustainable Farming Solutions/OFS	Allowed input	Allowed with restrictions	Allowed
Fertiliser	Fish Emulsion	Sustainable Farming Solutions/OFS	Allowed input	Allowed with restrictions	Allowed
Fertiliser	Super Kelp	Sustainable Farming Solutions/OFS	As part of overall fertility program	Allowed with restrictions	Allowed
Fertiliser	Organic-N	Sustainable Farming Solutions/OFS	Allowed input	Allowed with restrictions	
Fertiliser	DJ's Seaweed	DJ Growers	As part of overall fertility program	Allowed with restrictions	Allowed
Fertiliser	DJ's Fish Emulsion (Ocean Plus)	DJ Growers	Allowed input	Allowed with restrictions	Allowed
Fertiliser	Rapid Raiser	Neutrog Fertilisers	Allowed input	Allowed with restrictions	
Fertiliser	Bounce Back	Neutrog Fertilisers	Allowed input	Allowed with restrictions	
Fertiliser	Cultured Compost	Peats Soil & Garden Supplies	Allowed input	Allowed with restrictions	
Fertiliser	Gypsum	Cooke Plains Gypsum	Demonstrated need	Allowed with restrictions	R - For correcting calcium and sulphur deficiencies and soil salinity problems, as documented by visual symptoms or by testing of soil or plant tissue.
Fertiliser	Seabird Guano	Subcofindo (via DJ Grower Services)	Demonstrated need	Allowed with restrictions	R - Includes bat guano, seabird guano, and decomposed and dried deposits from wild bats or wild birds. Domesticated fowl excrement is considered manure, not guano. Must not be directly treated with pesticides. Guano that is not composted or processed is subject to raw manure restrictions at 205.203(c)(1). See also COMPOST categories. May only be (i) applied to land used for a crop not intended for human consumption; (ii) incorporated into the soil not less than 120 days prior to the harvest of a product whose edible portion has direct contact with the soil surface or soil particles; or (iii) incorporated into the soil not less than 90 days prior to the harvest of a product whose edible portion does not have direct contact with the soil surface or soil particles.

2. Example of some organic inputs used in animal husbandry

NOTE: Conventional veterinary chemicals and medicines are used in cases where humanitarian issues take precedent. The animal is isolated from the main heard or flock, for a specified period. The table below is sourced from the NASAA Organic and Biodynamic Standard.

PERMITTED	RESTRICTED	PROHIBITED
Copper sulphate	Rotenone	Synthetic parasiticides on a routine basis
Magnesium salts	Monosodium fluorosilicate (Animal products must be quarantined for 3 weeks after treatment)	Antibiotics on a routine basis
Homoeopathic remedies	Pyrethrum	Medication in the absence of illness
Herbal remedies	Neem	Sub-therapeutic doses of antibiotics
Limestone and dolomite	Hydrogen peroxide	Hormones
Natural vitamins	Vaccinations	Proprietary anthelmintic agents
Vegetable/Herbal oil extracts	Tallow	Chemically synthesised tranquillizers
Clays		Modified organisms or products thereof
Sulphur		Prophylactic use of allopathic medicine
Garlic, garlic oil and extracts		Synthetic growth promoters and stimulants
Seaweeds		Synthetic substances used to suppress natural growth
Seaweed meal or extracts		
Sea salt and salty water		
Methylated spirits		
Cider vinegar		
Zinc sulphate		
Diatomaceous earth		

3. Organic inputs for plant pest & disease

The table below is sourced from the NASAA Organic and Biodynamic Standard and lists products permitted for the control of plant and pest disease, and any restrictions on rates of application and sources where relevant. Operators are reminded that it is their responsibility to ensure that the use of permitted products does not contravene legislated requirements.

INPUT PRODUCT OR SOURCE MATERIAL	APPLICATION RATES AND PURPOSE OF USE	SOURCE AND SPECIFICATIONS
Bacillus Thuringiensis		Non-GMO or GMO derived
Biodynamic Preparations		
Biological Control	Must have a history of release for 3 years, be indigenous, or be subject to NASAA approval based on EIS or equivalent	Non-GMO or GMO derived, free of all unspecified organisms
Boric acid	Not to be used in direct contact with food, soil or plant tissue	
	Fungicide	No more than 6kg/ha
Copper in the form of bordeaux and burgundy mixes, copper hydroxide, copper oxychloride, (tribasic) copper sulphate, cuprous oxide, copper octanoate	Monitor bio accumulation, strategy for reduction in soil, not in aquatic systems	
Clay (including Bentonite and Kaolin)		
Derris elliptica, Derris Dust, Rotenone CAUTION – MAY BE HEALTH RISK	Not near aquatic systems or on edible plant portions	Unfortified, natural extraction
Diatomaceous Earth		
Foliar Sprays		Must not contain any prohibited materials and must not substitute for soil building programs
Fungal Preparations		Non-GMO or GMO derived
Homoeopathic preparations		

INPUT PRODUCT OR SOURCE MATERIAL	APPLICATION RATES AND PURPOSE OF USE	SOURCE AND SPECIFICATIONS
Iron Phosphate	Molluscicide	
Lime Sulphur (calcium polysulphide)		
Mechanical traps		
Milk		Must not lead to soil contamination Non-GMO or GMO derived
Mineral Oils (summer/winter/paraffin)	Light petroleum derivatives allowed as suffocating oils on foliage, dormant summer oils. Direct application to harvested crop prohibited	

Sources and references

[i] IFOAM Organic International, Definition of Organic Agriculture

[ii] National Standard for Organic and Bio-Dynamic Produce—Department of Agriculture and Water Resources Edition 3.7 September 2016

[iii] National Association for Sustainable Agriculture Australia (NASAA Organic Ltd)

[iv] National Farmers Federation, Get Australia Growing, Ideas for Economic Recovery

[v] IBISWorld Organic Farming in Australia — Market Research Report, December 2019 Organic growth: Rising demand for organic produce supports industry revenue and profit

[vi] FiBL & IFOAM – Organics international, The World of Organic Agriculture, Statistics & emerging Trends 2019

[vii] Department of Agriculture, Water and Environment

[viii] Noémi Nemes, Food and Agriculture Organisation of the United Nations, Comparative Analysis of Organic and Non-Organic Farming Systems: A Critical Assessment of Farm Profitability 2009

[ix] *Sustainable Agriculture Research Journal*

[x] Andre' leu 2018 Poisoning Our Children Acres U.S.A. (March 1, 2018) Language: English ISBN-10: 160173140X ISBN-13: 978-1601731401

[xi] Tatiana Anisimova, Integrating Multiple Factors Affecting Consumer Behavior Toward Organic Foods: The Role of Healthism, Hedonism, and Trust in Consumer Purchase Intentions of Organic Foods 2017 *Journal of Food Products Marketing*

[xii] John Reganold, Regents Professor of Soil Science & Agroecology at the Washington State University, Can we feed 10 billion people on organic farming alone? *The Guardian* US Edition 2016

[xiii] Composition differences between organic and conventional meat: a systematic literature review and meta-analysis Dominika Średnicka-Tober et al, *British Journal of Nutirition* 2016 Mar 28; 115(6): 994–1011.

[xiv] Marcin Barański et al, Higher antioxidant and lower cadmium concentrations and lower incidence of pesticide residues in organically grown crops: a systematic literature review and meta-analyses, 2014 Sep 14; 112(5): 794–811.

[xv] Charles M. Benbrook, 'Trends in glyphosate herbicide use in the United States and globally' *Environ Sci Eur* 28, 3 (2016). https://doi.org/10.1186/s12302-016-0070-0

[xvi] Heinrich Boll Stiftung et al, Insect Atlas, Fact and figures about friends and foes 2020 Heinrich Böll Foundation, Berlin, Germany; and Friends of the Earth Europe, Brussels, Belgium

[xvii] Regeneration International

[xviii] Kendra Klein, Senior Staff Scientist at Friends of the Earth, published article in *Foodtank*, Why Talk of Regenerative Agriculture Should Include Pesticide Reduction September 2019

[xix] Regenerative Agriculture can make Farmers Stewards of the Land Again, The Conversation February 11 2019

[xx] IFOAM Organics International, The Four principles of Organic Agriculture

[xxi] IBISWorld Industry Report C1832 Pesticide Manufacturing in Australia November 2018 Arna Richardson

[xxii] Australian Pesticide and Veterinary Medicines Authority, Label Content

[xxiii] United States Environmental Protection Agency, Food and Pesticides

[xxiv] Victorian Government, Better Health Channel Pesticides and other Chemicals in Food

[xxv] IBISWorld Industry Report C1832 Pesticide Manufacturing in Australia November 2018 Arna Richardson