Paraquat and accountability for AGVET chemical harm

Submission to the Senate inquiry into the continued use and regulation of paraquat

Rural and Regional Affairs and Transport References Committee

12 October 2026

Voice of Australia's organic industry

Organic Operators Australia

OOA is the peak industry body advocating for Australian certified organic operators and the integrity of certified organic production. We promote transparent representation, healthy production environments, effective policy and informed consumer choice.

This submission addresses paraquat as a test of the wider agvet regulatory framework. It proposes comprehensive proponent-funded assessment, remediation funding, financial assurance, ethical accountability and verification of chemical use in the field.

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Executive summary

Organic Operators Australia asks the Senate to make protection of human health and the environment the governing priority in agvet chemical regulation. We contribute following invitations from Parkinson's Australia and the Committee, building on the Chair's board-endorsed notes of 11 September 2024 and OOA's subsequent regulatory submissions. [1–4]

OOA considers the practical balance too favourable to continued chemical access, agricultural profitability and export revenue, and insufficiently protective against serious harm. This is our assessment of the policy outcome. Agricultural prosperity cannot ethically depend on transferring preventable disease, environmental damage and remediation costs to workers, families, neighbours or taxpayers.

APVMA's June 2026 decision retained paraquat with tighter controls and did not find convincing evidence of a direct causal association between approved uses and Parkinson's disease. OOA considers the published associations sufficiently serious to warrant independent reassessment and stronger preventive action. The scientific record includes positive and non-significant findings; neither alone resolves every exposure scenario. [5–7,9–11]

Proponents must fund comprehensive assessment of credible health and environmental pathways, including long-term and indirect effects. They must contribute to an independent remediation and health-support fund, maintain adequate insurance, and provide enduring financial security. Regulators must disclose the evidence and uncertainty supporting approval and verify that actual use remains within its assessed basis.

Contributions must reflect authorised treatment, actual use and potential harm. Obligations must survive product withdrawal, restructuring and departure from Australia. The Commonwealth must provide no indemnity to manufacturers or distributors for product-related liability.

OOA calls for farm application audits and targeted soil-residue monitoring. Residues must be interpreted alongside records, soil properties and treatment history.

The Committee should recommend immediate independent scrutiny, prompt protective restrictions, and suspension or cancellation of uses that cannot satisfy the safety criteria. Reform should retain proponents' responsibility throughout the product lifecycle while supporting farmers to adopt safer, effective weed management.

Recommendations

R1 Independent reassessment and protective action.

Independently review the paraquat decision taking into consideration a wider scope of environmental and human health harm, including chronic neurological risk, downstream environmental effects, actual exposure and workable controls. Publish a timetable and interim protections. Suspend or cancel uses that cannot meet the safety criteria.

R2 Comprehensive assessment at proponent expense.

Require proponents to fund assessment of credible material health and environmental pathways, targeted testing and resolution of decision-critical uncertainty. Include formulations, relevant mixtures, repeated exposure and susceptible populations, with reasons for exclusions.

R3 Independent stewardship of evidence.

Independently oversee commissioning, protocols, data access and publication. Require disclosure of sponsorship, conflicts, adverse findings and relevant unpublished results.

R4 Remediation and health-support fund.

Establish a statutory, independently governed fund financed by agvet proponents, with contributions proportionate to authorised scope, use and potential harm. Cover environmental restoration, exposure investigation, appropriate medical and care support, and an accessible compensation pathway under defined eligibility rules. Harmed individuals / organisations may claim under this fund with such claims able to survive the absence of causation where correlation is otherwise reasonably compelling.

R5 Insurance and enduring financial security.

Require adequate product-liability and environmental insurance, explicit scrutiny of long-latency and pollution exclusions, and additional secured assets for material uninsured exposure. Preserve obligations after withdrawal, insolvency or corporate exit. Reject government indemnities and liability waivers for manufacturers and distributors.

R6 Risk disclosure and accountable decisions.

Append a plain-English Risk Disclosure Statement to future agvet assessments and material reconsiderations. Publish the evidence basis, exposure assumptions, controls, residual risks, dissenting expert views and review triggers. Health and environmental safeguards must not be displaced by profitability or export considerations. The toxicity of the treatment, and the toxic load of the application dose should be disclosed – What is the toxin concentration in the treatment, and what is the tolerance in the treated area (further dilution / number of applications within a time frame etc)

R7 Field audits and environmental surveillance.

Establish nationally consistent state and territory audits with APVMA feedback. Reconcile stocks and applications, inspect equipment and controls, and test soil using validated methods. Combine random sampling with risk-based and incident-driven inspections. We cannot continue to ignore off-label use of toxins in agriculture. A label should have the effect of a license to use the product according to the label. Off-label use or use non-compliant to the label is an act of environmental vandalism and contamination of products intended for human consumption. If we are going to approve a toxin for use in Australia, then the manufacturer, distributor and user must be appropriately responsible for aggregate long and short term harm.

R8 Farmer transition and public accountability.

Fund independent agronomy, alternatives trials and adoption support without indemnifying chemical suppliers. Set clear milestones, publish compliance and exposure findings, and provide an annual report to Parliament on reassessment, remediation funding and outcomes.

1 Purpose and policy foundations

OOA's interest

Organic Operators Australia represents the interests of certified organic operators and the integrity of organic production and claims. Our interests extend to soil function, biodiversity, water quality, the health of agricultural workers and communities, and the ability of neighbouring operators to manage contamination. Our policy approach connects the health of productive environments with the health of people. [17]

The Chair's notes of 11 September 2024 raised paraquat and Parkinson's disease alongside an industry-governance principle: robust consensus requires differing views to be heard and fairly considered. The board's endorsement of those notes is the foundation for OOA's contribution here. Industry representation must include farmers and workers concerned about chemical exposure, including those living with illness. It must not treat commercial unanimity as a prerequisite for raising a health concern. [2]

Our recent OGTR position paper provides a method for assessing credible pathways from exposure to harm, distinguishing demonstrated mechanisms from hypotheses, and increasing testing where uncertainty matters to a decision. Our August 2026 APVMA letter separately proposes standard risk disclosure within existing assessment and label processes. This submission applies those principles to paraquat and recommends broader financial-accountability reforms for the Senate's consideration. [3,4]

Safety is a condition of approval

The Agvet Code addresses human and environmental safety in section 5A. Product registration under section 14 ordinarily requires satisfaction of the safety, trade and efficacy criteria, or compliance with an established standard. Trade protection is not a statutory permission to disregard safety. The Committee should test whether the evidence and controls support the applicable criteria, rather than assume that economic usefulness answers the safety question. [8]

OOA recognises the difference between APVMA's registration and label responsibilities and state and territory control of use after retail sale. National reform must connect these functions: field evidence should inform registration decisions, and approval assumptions should guide local inspection priorities. [15]

The fund, mandatory financial assurance and enduring corporate obligations proposed below are reforms for government and Parliament to establish. OOA does not suggest that an APVMA label condition alone can create them. Existing powers should meanwhile be used for evidence requests, reconsideration, disclosure and risk management where legally available. No part of the proposal should delay immediate action on a use that fails the safety criteria.

2 The paraquat decision and scientific evidence

What the June decision establishes

APVMA made its final regulatory decision on 22 June 2026 and published it on 23 June. The review commenced in 1997. Its public implementation record permits supply of relevant old-labelled products until 22 June 2028, while products manufactured after 23 June 2026 must bear the new approved label. The Committee should examine whether these transition arrangements provide timely protection and clear instructions to users. [5]

The final technical report identifies risks to birds and mammals as a principal driver of restrictions. It strengthens worker controls, including closed mixing and loading, personal protection and enclosed cabs for broadacre boom application; backpack application was not supported for paraquat-only or paraquat–diquat products. The assessment therefore supports only specified uses with controls, not an unrestricted assurance of safety. [6]

OOA acknowledges that APVMA evaluated health and environmental risks and changed permitted uses. Our criticism concerns the adequacy and independence of the evidence assessment (or otherwise the weighting of commercial interests over safety concerns), the treatment of chronic risk and uncertainty, and whether the controls will work consistently in practice. A lengthy review ending in tighter instructions must still answer whether the remaining exposures are acceptable.

The Parkinson's evidence requires a balanced but preventive response

Selected primary studies illustrate why independent adjudication of the evidence is necessary. These are different designs and exposure measures; their estimates should not be treated as interchangeable or simply averaged.

Study	Principal finding	Interpretation
Tanner et al 2011 [9]	Nested case-control study; 110 Parkinson's cases and 358 controls. Reported paraquat use was associated with Parkinson's disease: odds ratio 2.5, 95% confidence interval 1.4–4.7.	Clinically assessed disease is a strength. Retrospective exposure reporting, small exposed groups and co-exposures limit causal interpretation.
Paul et al 2024 [10]	829 cases and 824 controls. Estimated workplace exposure in every year of the assessed window: odds ratio 2.15 (95% CI 1.46–3.19); corresponding residential estimate 1.91 (95% CI 1.30–2.83).	Historical application records reduce reliance on recall. Proximity models estimate exposure rather than measure individual absorbed dose; confounding and selection require evaluation.
Shrestha et al 2020 [11]	Prospective Agricultural Health Study analysis of 66,110 participants and 491 incident cases. Ever-use of paraquat: hazard ratio 1.09 (95% CI 0.84–1.41), not statistically significant.	Prospective design is a strength. Exposure and outcome misclassification and incomplete follow-up remain relevant; this result is not proof of no effect in every subgroup or use pattern.

Odds ratios and hazard ratios compare groups under particular study assumptions; they are not an individual's probability of developing Parkinson's disease. The positive findings warrant serious attention. The non-significant cohort finding and limitations of exposure measurement must also be addressed. Differences in exposure timing, disease ascertainment, susceptibility and co-exposure can affect interpretation. [9–11]

APVMA's neurotoxicity assessment concludes that a direct causal association has not been convincingly demonstrated. It questions indirect exposure estimates and the relevance of injection-based animal studies to pesticidal exposure. These questions must be resolved rather than persist as uncertainties. They should be independently tested alongside the strengths of clinical case ascertainment, historical application records and converging evidence, rather than treated as reasons to demand an unattainable level of certainty. [7]

OOA asks the independent review to examine whether individual case-control studies using geographical exposure estimates were appropriately distinguished from purely ecological studies; whether bias and missing exposure information could obscure as well as inflate associations; and whether repeated, low-level exposure and long disease latency were adequately addressed. Assessment of biological mechanisms must distinguish experimental plausibility from demonstrated harm at actual human doses and routes.

The obligation of proof must be on the absence of harm, not to prove the existence of causation.

The decision threshold for preventive regulation is different from establishing that a particular product caused a particular person's disease. A credible risk of serious, irreversible harm can justify proportionate restrictions while remaining uncertainties are investigated. OOA recommends that this discipline be explicit in regulatory guidance and, where necessary, legislation. It should neither require proof of zero risk nor treat unresolved uncertainty as proof of safety.

Environmental and community exposure

Paraquat binds strongly to soil, which can reduce biological availability while allowing residues to persist. The technical report's treatment of soil binding and its acknowledged non-target risks make soil type, repeated application and off-site transport relevant to surveillance design. Total residue, biologically available residue and actual injury are distinct measurements. [6]

Exposure assessment should cover mixing, loading, application, equipment cleaning and re-entry, as well as drift, contaminated dust, runoff (including subsoil contamination of water table) and take-home contamination where plausible. It should identify children, pregnant workers, older people and other potentially susceptible groups rather than rely solely on an average adult operator scenario.

The relevant question is actual historical or current exposure at particular sites and under particular authorisations.

3 Comprehensive assessment funded by proponents

A complete pathway from use to harm

OOA calls for assessment broad enough to identify material harm, and sufficiently specific to test it. An application should explain the product's identity and formulation, how it is used, where it travels, who or what encounters it, the dose and duration of exposure, the biological response, and the resulting health or environmental consequence. Intended pesticidal activity alone is an incomplete assessment boundary.

The approach adapts the logic of OOA's OGTR paper. Comprehensive coverage means screening all credible pathways, documenting exclusions, and obtaining the evidence needed to resolve material uncertainty. [3]

OOA proposes four assessment stages:

- **Initial screening.** Define authorised uses, receiving environments, susceptible populations, formulation components, impurities and credible unintended effects. Publish the pathways retained and the reasons for screening others out.
- **Targeted testing.** Resolve uncertainties in dose, route, persistence, uptake, biological activity and relevant health or ecological endpoints. Use validated methods, suitable comparators and controls that distinguish causation from coincidental change.
- **Realistic complex systems.** Where a pathway remains credible, examine repeated exposure, relevant mixtures and formulations, actual climatic and soil conditions, and affected organisms or communities. Long-term or developmental studies should follow plausible mechanisms and exposure, not be omitted merely because acute tests are satisfactory.
- **Post-approval verification.** Specify baselines, measurable indicators, review dates and action thresholds. Monitoring must trigger reassessment, restriction or withdrawal when assumptions fail; it cannot legitimise an unmanageable risk.

Human health and environmental scope

For human health, the assessment should address acute toxicity and credible chronic neurological, reproductive, developmental, endocrine, immune and other systemic effects. Genotoxic and epigenetic questions should be examined where mechanisms and exposure warrant them.

Exposure should be evaluated across working lifetimes and relevant non-occupational settings. Vulnerable groups, historical exposure, interacting products and realistic failures of protective measures should be considered. Public-health surveillance should complement experimental toxicology and identify where evidence is insufficient to support the proposed scale of use.

For the removal of doubt, and legacy assumption of "nil" for low contamination result must now be considered for its longer term, accumulated risks over time, rather than any assumption of single application events.

Environmental assessment should address persistence, degradation products, soil and sediment movement, water contamination, non-target organisms and recovery after repeated treatment. Microbial community changes should be linked, where possible, to functional outcomes such as nutrient cycling or plant–microbe relationships. Biodiversity effects should be considered at the landscape scale where use patterns create that exposure. These are proposed assessment domains, not claims that paraquat has been shown to cause every listed effect.

The final decision should identify which concerns were resolved, which remain uncertain, and why residual risks are acceptable within the proposed controls. A food-residue limit answers a different question from the protection of an applicator, a soil ecosystem or a neighbouring property. Compliance with one benchmark should not be presented as a universal safety assurance.

Funding without sponsor control

Proponents should pay the full reasonable costs of required assessment, independent replication where needed, field verification and follow-up. Where multiple suppliers rely on the same active constituent, shared studies can avoid duplication, but no registrant should avoid its contribution or its product-specific obligations.

An independent body should set protocols and select accredited investigators. Study registration, analytical plans, data access and publication should be conditions of funding. Adverse, inconclusive and negative findings must be reported. Any protection of legitimate commercial information should be narrowly applied and should not conceal material risk information or prevent independent scientific scrutiny.

An adverse overseas decision, credible new disease association, exposure above assessed levels, repeated compliance failures or previously unrecognised environmental effect should trigger a documented review. Proponents should not be able to resolve a data request solely by withdrawing the product while leaving past exposure and potential liabilities unexamined.

4 Remediation and financial assurance

A national fund with independent governance

OOA proposes a statutory Agvet Harm Remediation and Health Support Fund, financed by proponents and governed independently of contributors. Its purpose is to ensure that resources are available when approved treatments cause or credibly contribute to harm, including where the responsible company is insolvent or no longer operates in Australia.

Eligible purposes should include environmental investigation, containment and restoration; appropriate exposure-related medical assessment, treatment, rehabilitation and long-term care; and compensation through a defined claims process. Where damage is irreversible, funding must address care and loss rather than promise restoration that is scientifically impossible. Prevention and emergency response should have dedicated provision.

Governance should include environmental, clinical, actuarial and legal expertise, with affected-community, worker and agricultural representation, including organic operators. Contributors should have no veto over investigations, benefit decisions or publication. Annual audited accounts should disclose contributions, reserves, claims, administrative costs and remediation outcomes, subject to claimant privacy.

Australia cannot continue to be the test market for agvet synthetic chemicals and biology. Global statistics demonstrate exponential growth of agvet chemical sales in Australia – a significant outlier in comparison to every other country which constrains such use.

Contributions proportionate to approved treatment

Liability provision should begin before market access and continue throughout the product's lifecycle. An independently assessed initial contribution should reflect authorised uses, likely hectares or treatment numbers, dose, frequency, exposure pathways, persistence and plausible severity of harm. Annual contributions should reconcile forecasts with actual sales and use, expressed in comparable units of active constituent where appropriate.

Rates should distinguish relevant product and use risks rather than charge every chemical the same percentage of revenue. Approval of a materially expanded use should trigger reassessment. Shared-active-constituent arrangements must prevent free-riding, double counting and migration of supply to lightly capitalised entities. A transparent actuarial method should account for long latency and aggregate exposure without presenting uncertain damage estimates as established facts.

Legacy exposure requires a separate design process using available market-share, exposure and corporate-successor evidence. The scheme must establish fair rules for attribution, evidence and review; it should not simply presume that every past supplier caused every reported illness. Any retrospective obligations need an express legislative basis and procedural safeguards.

Insurance that responds when claims arise

Every manufacturer, importer, registration holder and distributor within the defined scheme should demonstrate insurance proportionate to its role and foreseeable product-related exposure. Review must examine actual policy wording, not merely a certificate of currency. Relevant questions include pollution exclusions, gradual injury, neurological disease exclusions, territorial limits, aggregate caps, deductibles, retroactive dates and cover after supply ceases.

OOA's requirement is adequate insurance backed by additional security for material gaps. A policy that excludes the principal plausible claim is not adequate. Secured reserves, a bond or other enforceable financial assurance should address material coverage limits and residual exposure; they should supplement the insurance requirement, not disguise its absence. If the required insurance is unavailable, or remaining exposure cannot be adequately secured, the proposed scope of supply should not be authorised under the reformed scheme.

An independent actuarial review should periodically test aggregate limits against plausible correlated claims and remediation scenarios. Coverage must remain responsive over an

evidence-based period appropriate to disease latency and environmental persistence. A standard short insurance renewal cycle is not an adequate answer to harm that may emerge decades later.

Corporate exit must not extinguish responsibility

Financial security should be enforceable in Australia and protected from ordinary corporate insolvency to the extent provided by the scheme. Registration transfer, restructuring, cancellation and withdrawal should trigger a review of outstanding obligations. Release of security should require independent evidence that remaining liabilities are adequately provided for; it should not occur automatically when sales stop.

Where appropriate, local responsible entities, enforceable parent guarantees and succession obligations should support recovery. A parent guarantee alone is insufficient if the parent can move assets beyond practical enforcement. The objective is not to compel a company to keep selling an unsafe or unwanted product. It is to prevent commercial exit from leaving Australians with the costs of historical exposure.

No government indemnity and no purchase of immunity

OOA opposes any Commonwealth indemnity for an agvet chemical manufacturer or distributor's product-related liability. Government must not offer a guarantee, hold-harmless arrangement or equivalent protection that transfers those liabilities to taxpayers – who are also the claimants (a curious supposition suggesting the cost of harm should be carried by the harmed). Contributors must remain accountable for their conduct and products; participation in the fund must not create immunity, cap otherwise available legal liability or extinguish existing rights.

The claims framework should distinguish prompt assistance based on defined exposure and clinical criteria from final determinations of legal liability. Independent decision-making, accessible review and rules against duplicate recovery are essential. People should not have to complete years of litigation before obtaining every form of assistance, but eligibility must remain evidence-based. The fund should be able to pursue recovery from responsible parties where justified.

Neither payment into a fund nor purchase of insurance establishes safety. Prevention remains the first obligation. Financial assurance provides resources for residual and realised harm; it is not a licence to cause it.

5 Ethics independence and risk disclosure

An unacceptable transfer of costs

OOA considers it morally indefensible to preserve agricultural profitability or export earnings by accepting preventable serious harm borne by people who do not share in the commercial benefit and may have no meaningful choice about exposure. Farm workers, contractors, children, neighbours and future landholders must not become the involuntary underwriters of chemical-dependent production.

In OOA's view, the paraquat outcome illustrates a regulatory balance too favourable to continued commercial access and too reluctant to act on credible indications of long-term harm. The Committee should test that judgment against the decision record, the treatment of independent science and the actual protection delivered. A finding of personal bad faith is not required to recognise and correct a structurally inadequate outcome.

Proponents have ethical responsibilities to disclose adverse evidence promptly, support independent investigation and meet remediation obligations. Regulators have responsibilities to explain uncertainty honestly, hear affected people and take timely preventive action. Economic analysis should include illness, unpaid care, lost working capacity, damaged ecological function and contamination costs, rather than count only the benefit of the chemical and the cost of changing practice.

Farmers' commercial constraints are real. They justify investment in safer weed management and practical transition support. They do not justify lowering health protections for agricultural communities. Likewise, availability of insurance or low market share should not reduce the scientific standard required for approval.

Scientific disagreement must remain visible

The board-endorsed 2024 notes emphasise that suppressing differing views weakens industry governance. The same principle applies to regulation. The Committee should obtain APVMA's study inclusion and exclusion rationales, expert advice, relevant meeting records, funding and conflict declarations, and the reasons for accepting or rejecting material submissions. It should hear independent neurologists, epidemiologists, exposure scientists and ecologists alongside proponents, conventional and organic producers, workers and affected communities. [2]

Expertise and conflicts should be assessed transparently. Industry funding is a reason for scrutiny and safeguards, not automatic rejection of a study. Conversely, an affected person's advocacy does not invalidate their evidence. Competing interpretations should be tested against methods and data, and unresolved scientific dissent should be recorded in the decision.

Complete the risk model with disclosure

OOA's August APVMA letter proposed a Risk Disclosure Statement as a standard assessment output. The statement should identify the active and product, affected people and environments, exposure pathways, principal evidence and benchmarks, decision rationale, required controls, residual risk, uncertainty and authoritative registration record. [4]

For paraquat, it should make clear the uses and exposure assumptions to which APVMA's conclusions apply, the disputed neurological evidence, what restrictions are changing and when, and what new findings would trigger review. Appropriate warnings and instructions should also be carried into approved labels and conditions through the relevant legal processes. Communication must not compress a conditional regulatory conclusion into an unqualified public claim that the product is safe.

6 Field verification and enforcement

Test what happens after approval

OOA has received anecdotal reports that some users apply extra chemical above label directions to ensure efficacy. We have not quantified the practice or verified individual allegations. The appropriate response is independent surveillance that tests the assumption of label compliance, protects compliant operators and identifies where training, equipment, incentives or enforcement are failing.

A nationally consistent program should be implemented through state and territory control-of-use authorities, with APVMA receiving findings relevant to registration and label decisions. Existing pesticide records provide a starting point: NSW's sample application record includes product identity, application rate and total quantity. Harmonisation should build on useful records rather than require duplicate systems. [15,16]

OOA recommends that farms using paraquat and other chemicals with comparable concerns be subject to application-rate audits and targeted soil-residue checks. Audit coverage should combine a representative random sample, higher-frequency inspection of high-risk uses and investigation of incidents or complaints. Inspectors need appropriate powers, expertise and resources; operators need clear expectations and procedural fairness.

Application records and physical verification

The audit should reconcile opening stocks, purchases, transfers, documented disposal and closing stocks with recorded applications. Records should identify the product and registration or permit, concentration, date, treated location and area, rate, total quantity, repeat treatments, applicator and relevant conditions. Active-constituent units must be consistent; litres of differently concentrated products are not directly comparable.

Inspectors should check mixing practices, calibration, nozzle condition, speed, flow, spray overlap, weather records, drift controls, personal protection and any required closed systems. Where spot spraying is used, the actual treated fraction and dose on treated ground must be verified. Whole-paddock averaging must not conceal excessive local application.

Record reconciliation provides a reason to investigate a discrepancy, not automatic proof of an offence. Findings should be checked against lawful permits, inventory errors, contractor records and the applicable label at the time of use. Repeated or deliberate breaches should attract proportionate enforcement, with prompt restrictions where people or ecosystems face material risk.

Soil and environmental monitoring

Monitoring should begin with treatment history and a suitable baseline or reference site where feasible. Sampling should specify georeferenced locations, depth, timing, field heterogeneity, repeat intervals and chain of custody. Accredited laboratories should use a method validated for paraquat in the relevant soil matrix, with blanks, duplicates, recovery checks and reported detection and quantification limits.

Results must distinguish measured total or extractable residue from bioavailable fractions where the method supports that distinction. Interpretation should consider soil texture and binding capacity, prior lawful use, degradation, erosion and off-site deposition. A soil detection cannot reliably reconstruct a single application rate without additional evidence. Conversely, a non-detection cannot establish absence of historical exposure or earlier harm.

Soil data should be paired with application records and, where pathways warrant it, dust, sediment, water, vegetation or wildlife observations. Health and ecological action levels should be set by competent authorities for defined purposes. Food maximum residue limits must not be repurposed as soil safety thresholds. Exceeding a surveillance trigger should initiate investigation; enforcement should rest on an appropriate evidentiary basis.

Surveillance must change decisions

The program should publish aggregate audit coverage, confirmed breaches, exposure findings and response times, while protecting personal medical information. Serious incidents and evidence that label controls fail in normal practice should reach APVMA promptly. Repeated failure of an approval assumption should lead to reassessment of the authorised use, not merely repeated reminders to operators.

OOA supports ethically governed longitudinal research linking credible exposure histories with clinical outcomes. Health monitoring should be clinically appropriate and voluntary where required, with informed consent and privacy protections. It should not be advertised as a proven screening test that predicts whether an individual will develop Parkinson's disease.

7 International lessons and implementation

Compare regulatory reasoning and practical outcomes

International experience is relevant because it shows different responses to uncertainty and provides opportunities to compare actual outcomes. It does not remove Australia's responsibility to assess local exposure, conditions and evidence.

European Union. In 2007 the Court of First Instance annulled the directive authorising paraquat. Its reasoning included deficiencies in consideration of neurotoxicity and Parkinson's material, operator protection and animal-health assessment. That decision is an important governance precedent; it was not a clinical finding that paraquat caused every alleged case of Parkinson's disease. [13]

United States federal regulation. EPA retains restricted-use controls and has not found a clear link between labelled uses and Parkinson's disease. Its current account also identifies greater uncertainty about volatilisation following newer vapour-pressure data and an additional data requirement. Continued authorisation therefore coexists with unresolved exposure questions. [12]

California. DPR announced on 10 August 2026 that all paraquat product registrants had voluntarily cancelled their registrations following reevaluation and data requests, with the

final cancellation on 6 August. Dealer sell-through may continue for up to two years after each cancellation. This is a voluntary-cancellation phase-out, not an immediate cessation of all use. It illustrates why data obligations, withdrawal arrangements and continuing financial responsibility must be designed together; it does not establish a company's motive for withdrawal. [14]

The Committee should seek comparative evidence on application controls, compliance, health and environmental surveillance, transition costs and weed-management outcomes. OOA does not rely on an unverified count of national bans or assume that foreign approval or prohibition alone settles the Australian decision.

Deliverable milestones

Within three months of the government response, publish the independent paraquat review's scope, membership, conflicts policy and timetable; identify urgent protective measures; commence a coordinated field-audit pilot; and adopt a prospective risk-disclosure protocol within available powers. The review should have a defined completion date and publicly explained extensions only where necessary.

Within six months, publish the first surveillance findings and consult on the remediation fund, contribution method, mandatory insurance, secured reserves and enduring corporate obligations. Identify the legal changes and intergovernmental agreements required. Set measurable expectations for audit coverage, reporting and responses to breaches.

Within twelve months, introduce the necessary legislation and implementation instruments, publish baseline financial-assurance requirements, and begin the national reporting program. These are proposed delivery targets, not reasons to defer action on unacceptable current exposure.

Transition support should draw on organic and other low-chemical production experience while testing performance in the relevant crops, soils and climates. Trials should assess rotations, cover crops, mechanical and precision methods, harvest weed-seed control and safer chemical options where appropriate. Alternatives must be evaluated for worker safety, soil disturbance, erosion, energy, efficacy and cost; replacing one hazard with another is not a successful transition.

OOA asks the Committee to recommend a regulatory settlement in which protection is demonstrated, use is verified and commercial proponents retain responsibility for harm. We would welcome the opportunity to provide further evidence on practical traceability, input records, contamination management and the proposed risk-disclosure framework.

Appendix A Response to the terms of reference

The following map addresses each of the eight terms of reference circulated for the inquiry. Topic descriptions are abbreviated for navigation. [1]

Term	Topic	Submission response
(a)	Scientific evidence considered by APVMA	Section 2; R1–R3
(b)	Adequacy, transparency and independence of decisions	Sections 3 and 5; R1, R3, R6
(c)	Paraquat, Parkinson's disease and neurological conditions	Sections 2 and 3; R1, R2
(d)	Implications for workers, rural communities, golfers and others	Sections 2, 4 and 6; R4, R5, R7, R8
(e)	Emerging evidence, uncertainty and long-term health impacts	Sections 2, 3 and 6; R1–R3, R6, R7
(f)	International regulatory approaches	Section 7; R1, R8
(g)	Changes needed to secure public confidence	Sections 3–7; R2–R8
(h)	Related matters	Section 1 and section 4; governance, remediation and enduring liability

References

The numbered references distinguish OOA's policy material, regulatory records and published research. Web sources were consulted on 18 September 2026. The submission's reform proposals are OOA recommendations and are not presented as existing legal requirements.

[1] Senate Rural and Regional Affairs and Transport References Committee. Submission invitation—Inquiry into the continued use and regulation of paraquat. Letter to OOA, 10 September 2026; read with the terms of reference circulated with the invitation. Submissions close 22 October 2026.

[2] Hislop Speers P. Email to the OOA Board concerning paraquat, Parkinson's disease and industry governance, 11 September 2024. Board-endorsed policy notes supplied for this submission.

[3] Organic Operators Australia. Position Paper to OGTR on Novel Proteins and Genome Dynamics. July 2026. In particular, the causal-pathway model, sections 5–7, and safeguards against overreach. OOA policy document.

[4] Organic Operators Australia. Completing APVMA's risk-based assessment model through standard risk disclosure. Letter to Scott Hansen and Ed Cram, version 2.0, 27 August 2026. OOA policy correspondence.

[5] APVMA. Paraquat chemical review. Final decision and implementation record, updated 11 September 2026. Source

[6] APVMA. Paraquat Final Review Technical Report. June 2026. Executive summary and sections addressing worker health, environmental fate and non-target organisms. Source

[7] APVMA. Paraquat final regulatory decision – consideration of neurotoxicity submissions. June 2026. Executive summary, epidemiology assessment and overall conclusions. Source

[8] Agricultural and Veterinary Chemicals Code Act 1994 (Cth), Schedule, particularly sections 5A, 5C, 5D, 14 and the reconsideration provisions. Authorised compilation C2024C00508, 14 October 2024, listed as the latest version on the Federal Register. Source

[9] Tanner CM, Kamel F, Ross GW, et al. Rotenone, paraquat, and Parkinson's disease. Environmental Health Perspectives. 2011;119(6):866–872. doi:10.1289/ehp.1002839. Source

[10] Paul KC, Cockburn M, Gong Y, Bronstein J, Ritz B. Agricultural paraquat dichloride use and Parkinson's disease in California's Central Valley. International Journal of Epidemiology. 2024;53(1):dyae004. doi:10.1093/ije/dyae004. Source

[11] Shrestha S, Parks CG, Umbach DM, et al. Pesticide use and incident Parkinson's disease in a cohort of farmers and their spouses. Environmental Research. 2020;191:110186. doi:10.1016/j.envres.2020.110186. Source

[12] United States Environmental Protection Agency. Paraquat Dichloride. Registration-review account, including November 2025 update on volatilisation uncertainty and further data requirements. Source

[13] Court of First Instance of the European Communities. Sweden v Commission, Case T-229/04, judgment of 11 July 2007. Court press release No 45/07 summarising the annulment and reasons. Source

[14] California Department of Pesticide Regulation. DPR Announces Voluntary Cancellation of All Pesticide Products Containing Paraquat-Dichloride. 10 August 2026. Source

[15] APVMA. Use of agvet chemicals in Australia. National scheme and state and territory control-of-use responsibilities. Source

[16] NSW Environment Protection Authority. Pesticide application record. Official sample recording product identity, application rate, quantity and other application particulars. Source

[17] Organic Operators Australia. About us. Organisational purpose and objectives. Source