



A National Pathway to Market for Dieback Risk-Managed Basic Raw Materials (BRM)

EXECUTIVE SUMMARY

Movement of gravel is a primary pathway for the spread of *Phytophthora* Dieback (Dieback). In Western Australia, this risk is actively managed through established policy, procurement requirements, and industry practice, including Main Roads WA specifications and DBCA guidance.

However, supply of verified uninfested material is increasingly constrained and often cost-prohibitive to transport.

Metham sodium treatment enables gravel to be treated in a controlled stockpile environment, reducing pathogen presence and providing a practical, risk-managed supply option where uninfested material is limited.

Recent large-scale trials demonstrate:

- ~95.8% reduction in *Phytophthora*
- ~96.6% reduction in *P. cinnamomi*
- ~91.8% reduction in *P. multivora*

TREATED BRM

Treated BRM is gravel treated with metham sodium to reduce *Phytophthora* pathogen presence under operational conditions, providing a practical supply option where uninfested material is limited or transport is cost-prohibitive.

Treatment Process

Gravel is stockpiled under controlled conditions and treated during formation. Metham sodium converts to a gas (MITC), which moves through the material and targets *Phytophthora*. Stockpile design, including bunding and surface sealing, supports gas retention and effective exposure.

Following a defined withholding period (~28 days), the gas dissipates and the material can be handled, transported, and used as normal, with no persistent residues remaining.

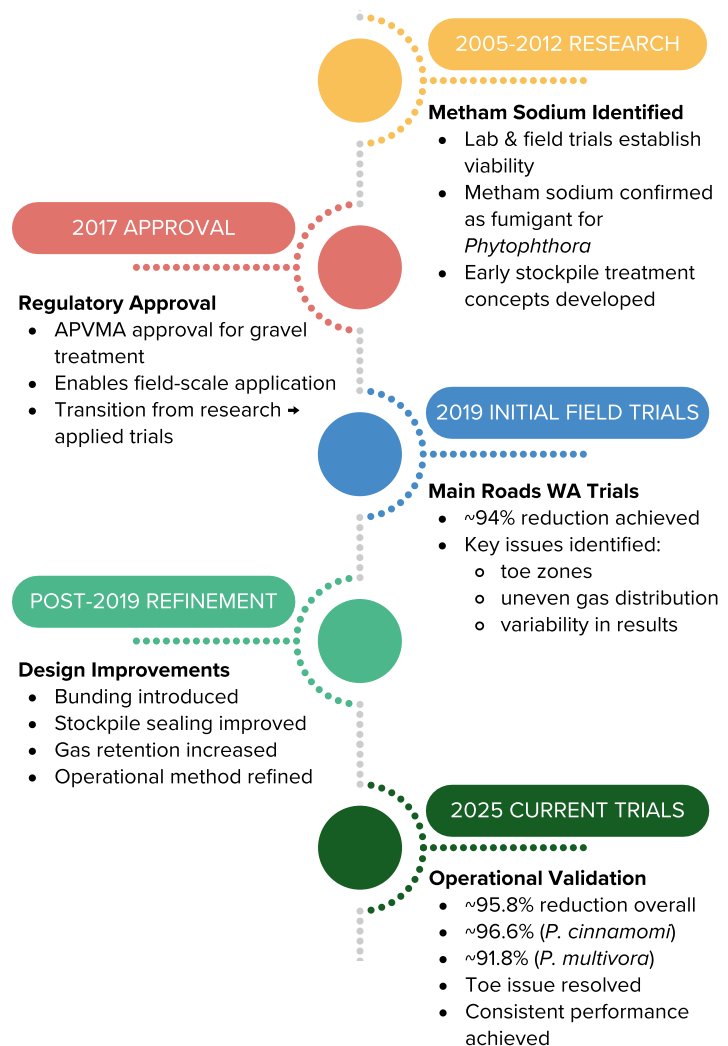
Treated BRM provides a practical option where uninfested material is limited, uncertain, or not viable to transport. It enables material to be treated and used closer to the point of need, supporting delivery across metropolitan, regional, and site-based works.



PROJECT BACKGROUND

This work builds on a progression of research, field trials, and industry-led development in Western Australia. Early trials confirmed the potential of metham sodium treatment, while identifying limitations in stockpile performance, particularly in gas distribution and variability. Refinement of stockpile design, application methods, and operational controls has resulted in a repeatable and reliable treatment method, now demonstrated at scale.

PROJECT TIMELINE





USING TREATED BRM IN PRACTICE

Treated BRM is applied as part of standard project delivery, enabling material to be sourced, treated, and used as part of standard project delivery. In Western Australia, this approach has progressed beyond trials and is now being applied within state infrastructure contexts. Application is not yet universal and varies depending on land tenure and project requirements. As implementation increases, monitoring of treated sites (including surrounding vegetation) is recommended to support ongoing confidence, validate performance, and inform refinement.

Source → Classify → Treat → Verify → Supply → Use

MATERIAL STRATEGY

Material sourcing should be planned alongside cost, logistics, and risk outcomes and not determined solely by availability or distance.

In practice:

- assess local material sources early
- compare transport and treatment as part of cost planning
- identify where treatment can reduce haulage and staging constraints

IMPLEMENTATION

Implementation requires early integration into project planning and clear definition of responsibilities across supply and delivery.

In practice:

- identify material sources and treatment locations during planning
- confirm treatment method and delivery approach (fixed or mobile)
- schedule treatment to align with construction timelines (including withholding period)
- define responsibilities for treatment, handling, and verification

PROCESS AND CONTROL

Consistent process control is required to achieve reliable outcomes. This includes managing stockpiles to support effective treatment conditions and maintaining clear records of treatment inputs, timing, and handling.

These steps form the basis of a repeatable and scalable approach to material supply.

RELEVANCE BEYOND WESTERN AUSTRALIA

The WA pathway demonstrates a practical model for adoption in other jurisdictions.

Implementation requires:

- alignment with local policy and regulatory settings
- establishment of assurance and certification approaches
- integration into procurement and approval frameworks

SUPPLY AND CERTIFICATION

Treated BRM should be integrated into supply and procurement systems to enable consistent use across projects.

In practice:

- establish defined treatment procedures for stockpiles (quarry-based or site-managed)
- maintain documentation and traceability of treated material
- apply a consistent assurance approach to confirm treatment and handling
- include treated BRM as a material option within specifications and tenders

VERIFICATION AND AUDIT

Verification focuses on confirming that treatment has been applied correctly through standard project records.

This includes:

- treatment inputs, volumes, and timing
- stockpile construction and management
- confirmation of withholding period completion

These records support a practical audit process aligned with existing quality assurance systems.

IMPLEMENTATION PRIORITIES

To move from pilot use to standard practice:

Establish a minimum assurance approach

Define what constitutes treated BRM for use across projects, including treatment documentation, withholding confirmation, and traceability.

Develop standard specification wording

Enable treated BRM to be included in contracts, tenders, and development approvals as a recognised material option.

Formalise treatment procedures

Document consistent methods for stockpile treatment, management, and handling across different project types and delivery models.

Define roles and responsibilities

Clarify responsibility for treatment, verification, certification, and acceptance of material.

Implement monitoring of treated sites

Establish repeatable monitoring approaches (including surrounding vegetation) to validate performance and support ongoing confidence.

