

Newsletter to Participants No. 9: November 2010

Desorption of methyl bromide

It is well known that sorption and diffusion of fumigant into porous materials such as wood can occur when materials are fumigated, i.e. during fumigation of logs with methyl bromide the fumigant goes into the wood. After fumigation and after initial ventilation the process is reversed and some of the fumigant may be released slowly over time by desorption and diffusion. STIMBR is investigating this process in relation to export log fumigation.

We know that desorption of methyl bromide from logs is hard to detect from an uncovered stack, even by the most sensitive of monitoring instruments. We believe there are unlikely to be health implications because of the slow release over a protracted period directly into the air. Modelling based on limited laboratory data has been undertaken, but validation is required and will be undertaken over the coming year.

There are two implications from fumigant desorption that need careful attention. The first is in relation to options for fumigant recapture. For example, we want to know what proportion of the fumigant might be unavailable for recapture because of slow desorption. STIMBR is investigating the level of methyl bromide desorption from logs and how this will impact on recapture requirements. The second is in relation to what happens when fumigated materials are placed in an enclosed space e.g. a shipping container. If the container is closed up after initial ventilation and not reopened for some days a hazardous build up of fumigant may occur. Fumigation operators are well aware of this risk and they take care to advise more ventilation time before entering such containers. ERMA's "Safety precautions with fumigated freight containers" advises that containers should be assessed for the need for further ventilation. Additions to guidelines and a warning may be needed to alert uninformed workers.

STIMBR is currently working on a Q&A for workplace use on methyl bromide that will explain the potential issues and risks associated with its use. The Q&A will provide safety advice. We intend making this available to workplaces throughout New Zealand that may come into contact with methyl bromide fumigation or product that has been treated with methyl bromide.

If you are concerned about the potential hazards, specifically from unopened containers containing product that has been treated with methyl bromide, you may wish to ask organisations to provide warnings in the workplace to alert uninformed workers.



Primary Growth Partnership Funding

STIMBR has been successful in stage one of its application for PGP funding support. We were asked to submit a full business case, a process which has been completed and is now with the PGP assessment panel. The case covers most of the areas of work STIMBR was planning to advance in the current year but the close to 1 for 1 support will certainly speed up progress. Key areas of focus in the programme include:

- extending the application of phosphine with significant support from ZESPRI,
- continuing evaluation of alternative fumigants including methyl iodide, EDN, and GRAS (generally recognised as safe) compounds, also supported by ZESPRI,
- further work on fumigant monitoring and modelling,
- increased work on both existing and new recapture/destruction technologies,
- refinement of risk management strategies and non-fumigant control methods, and
- a workshop of experts encouraged to think laterally on the whole methyl bromide issue.

If STIMBR's business case is accepted there will be an intensive contracting period, but hopefully the green light will flash a few months into the New Year.

Phosphine for Indian Log Trade

The preparation of the case for Indian acceptance of in-transit fumigation of logs with phosphine is now under way and is expected to be presented to the Indian authorities by MAF early next year.

We feel all the issues raised by Indian quarantine officials have been addressed, with a further container trial being completed under Dr Wei-Young Wang's direction.

Plant and Food Research's Don Brash has led a determined initiative to provide the efficacy data required and in drafting the required document.

Acceptance of in-transit fumigation with phosphine will significantly reduce New Zealand's methyl bromide use in what is a growing log export market.

Upcoming Event - Tauranga Seminar

STIMBR is planning to hold a seminar around February-March next year to discuss its progress and future plans with the wider industry.

The voluntary levy on methyl bromide use provides the income necessary to advance STIMBR initiatives and to leverage additional funding such as that from the PGP. While STIMBR is managed by industry representatives, we believe the wider sector, and in particular contributors to the levy, should have a strong interest in how this funding is spent. Continued support is dependent on a strong focus on industry's priority issues and progress in addressing them. This seminar aims to enhance two way communication and ensure continued support for its programme.

All members will be advised of details early in the New Year.



John Bain (Scion) extracting insects from the insect-infested logs exposed in the Indian phosphine trial, using a mechanical log splitter.

Treatment of Top-stow

Even if approval is granted for in-transit phosphine fumigation of logs to India, as with shipments to China, top-stow will still require fumigation with methyl bromide.

Top-stow comprises around a third of logs in a shipment. We can view this as at risk from further constraints on methyl bromide use or as an opportunity to further reduce consumption of the fumigant. We choose the latter.

STIMBR is funding research into the use of cylinderised phosphine, as opposed to pellets or blankets, for the treatment of top-stow. Cylinderised phosphine avoids the lag time involved with pellets and blankets and the concentration can be much more finely controlled. The proposed research to be carried out by Plant and Food Research will examine the question of exposure time and fumigant concentration as well as treatment temperature.

We continue to push the boundaries in seeking solutions to the currently unavoidable consumption of methyl bromide by the forest produce export sector.

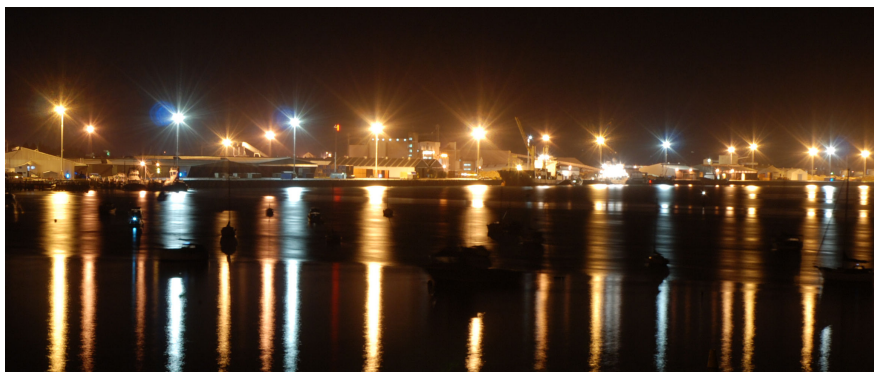


Deck cargo or top-stow is a significant component of log shipments.

Risk Management Trial

A major trial was undertaken last summer by Dr Stephen Pawson (Scion) examining the potential of risk reduction strategies for Arhopalus on an operational site, in this case the Port of Tauranga. Previous research sponsored by STIMBR had shown light wave length greatly affected the strength of attraction to Arhopalus beetles and the present study aimed to compare randomised yellow (high pressure sodium) and white (metal halide) lights on the 30m high towers used for night operations on the port. UV light traps beneath each tower were used to sample beetles.

Disappointingly low insect numbers over the summer compromised the results to some extent but white light was shown to be more attractive than yellow. What did show up in the results was the very strong attraction of fresh cut logs for Arhopalus with much greater catches closer to the log yards. It is also worth noting that yellow light is not only less attractive to Arhopalus but is also more energy efficient than white.



White and yellow lights on towers along Port of Tauranga wharf

STIMBR AGM

STIMBR held its annual general meeting in Wellington on the 22nd September with a very good turnout of members. The chairman Gordon Hosking presented his report printed below



Chair's Annual Report "A year of solid progress in research and representation."

- Continued support from independent Levy Group
- Second year of Sustainable Farming Fund research programme
- Successful application for Primary Growth Partnership (PGP)
- Dedicated STIMBR website for membership communication

Specific areas of progress:

Protecting methyl bromide use.

- Management of Picton issue and production of information brochure presenting scientifically defensible position on methyl bromide fumigation.
- Submissions to, and representation at, ERMA methyl bromide reassessment hearings.
- Expert review of toxicology of methyl bromide and evaluation of glutathione issue.
- Attendance and presentation at Brisbane methyl bromide workshop.
- Review of dispersion models and potential applicability to methyl bromide fumigation.
- Sponsorship of workshop on methyl bromide monitoring protocols for service providers on ports and other fumigation sites.
- Investigation of desorption of fumigant following initial ventilation.

Strengthening phosphine as an alternative fumigant.

- Completion of two further trials to provide data to Indian quarantine authorities in seeking approval for in-transit fumigation of logs.
- Presentation of research results and case for in-transit phosphine treatment to Indian quarantine authorities.
- Expert review of toxicological literature pertaining to phosphine.

- Replicated phosphine efficacy trials for insect contaminants of logs in support of both China and India acceptance of in-transit treatment.

Development of non-fumigant strategies.

- Major on-port research trial of risk management strategies for *Arhopalus* adults through lighting manipulation and UV light traps.

Education/media initiatives.

- Production of generic brochure on methyl bromide fumigation for use nationally.
- Commissioning of survey of effectiveness of Picton communication strategy.
- Sponsorship of two New Zealand participants at MeBr Technical Options Committee meeting in Spain in lieu of government support.

Funding of STIMBR.

- Development of financial systems has been slow but are now in place.
- Successful application for levy funding of \$282,000
- Membership subscriptions of \$15,000
- Leveraged government funding of approximately \$133,000 (SFF)
- Management costs for time, travel, accommodation, and office costs of \$22,000

The future.

- Retention of existing members support, and recruitment of additional members.
- Agreed business plan for 2010 – 2011 progressing priority research projects, ensuring effective management and accountability, and ensuring STIMBR credibility in the methyl bromide debate.
- Ensuring funding support from levy group by maintaining a strong focus on industry concerns and maintaining and extending leveraged funding.
- Development of a successful case for PGP support funding.

*Gordon Hosking
Chair STIMBR
22 September, 2010.*