UPDATE ON EDN™ FOR POST HARVEST APPLICATION

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EDN (active ingredient -Ethanedinitrile C_2N_2) is a broad-spectrum fumigant, highly toxic to insects, nematodes and fungal pathogens of timber and logs. EDN is neither an ozone depleting substance nor is it a green-house gas. It is currently registered for use with-in Australia and is in the process of being registered in New Zealand, South Korea, Malaysia, Russia and USA. Scientific Research is underway in a number of countries to support the registration and phytosanitary approvals for the use of EDN.

EDN has a number of advantages for use as a forest product phytosanitary treatment. The boiling point of EDN is -21 ° C which allows it to be applied as a gas. It is efficacious at low temperatures. EDN is a smaller molecule with a high vapour pressure which allows it to achieve equilibrium quickly in a fumigation environment resulting in higher efficacy. EDN has potential as a phytosanitary alternative to methyl bromide for treatment of pallets, sawn timber and logs.

Research conducted by the New Zealand Institute for Plant & Food Research Limited (PFR) has shown that a treatment period of 24 hours is efficacious to all the life stages of three species of forest insects tested in New Zealand. About 0.5 % of the product remained at the end of the treatment period at the highest proposed dose rate. This remaining gas can be quickly and safely ventilated into the atmosphere without a need for a scrubber or recapturing system.

AERMOD modelling using the maximum proposed dose rate and treatment time of 24 hours was modelled for Tauranga Port, New Zealand. The model was supported by local meteorological data collected over 5 years to predict EDN emissions during treatment and ventilation. Up to 30 stacks with each stack measuring 1000 m^3 volume was modelled. The model supports a 10 m buffer zone to protect workers and 20 m for bystanders in a worst-case situation.

Laboratory testing, field studies and modelling findings show that EDN can be used as an alternative to methyl bromide without compromising worker and bystander safety.

Further scientific research is being conducted in the USA, Canada, EU, Australia, New Zealand, India, Malaysia, South Korea and South Africa to gain approval between trading partners, regulatory authorities and for the phytosanitary requirements.