# Ethanedinitrile as a devitalising agent for stored grain

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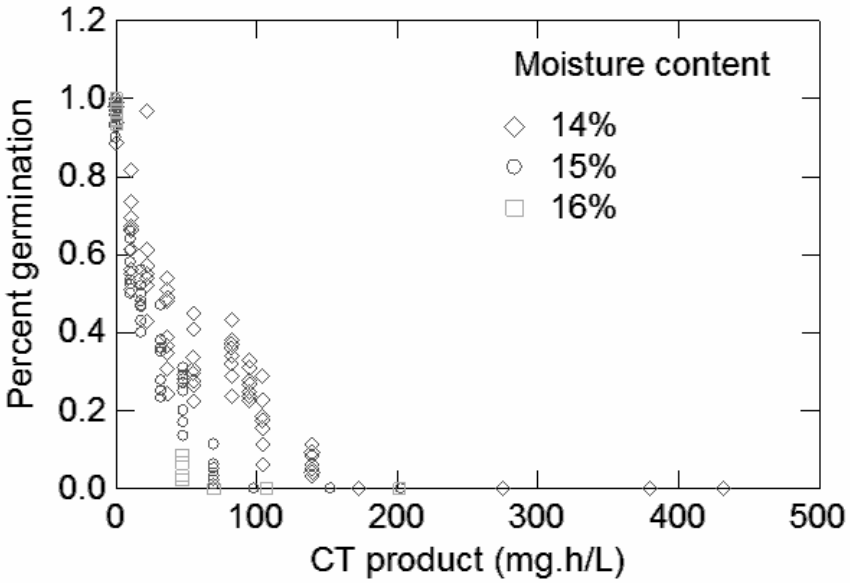
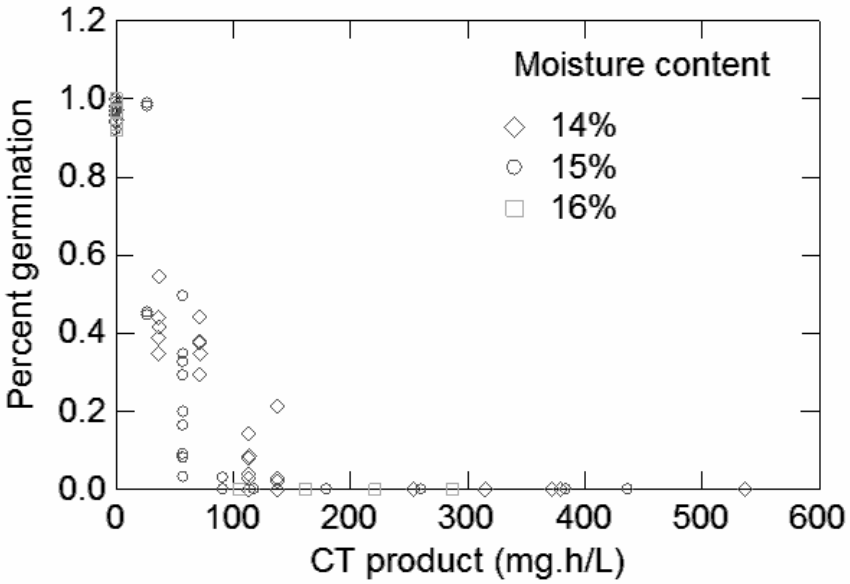
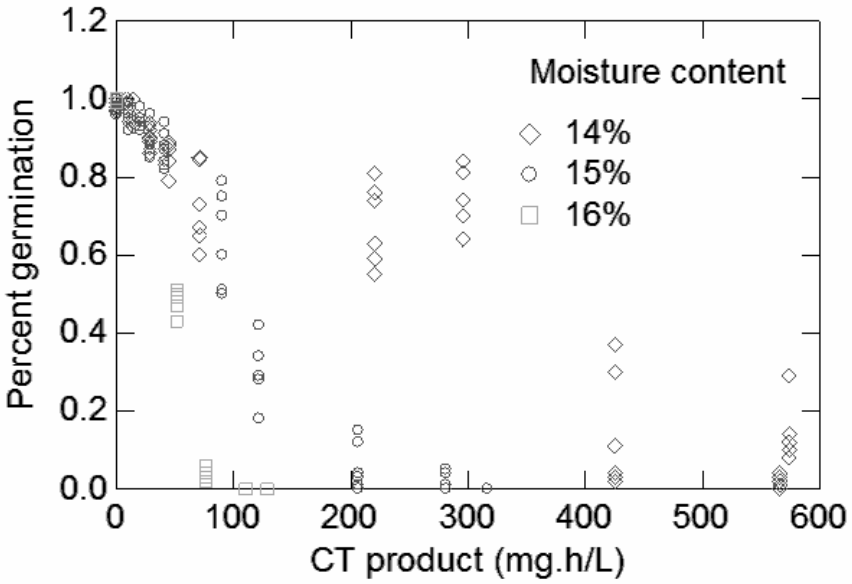
Ethanedinitrile ($C_2N_2$) is a simple chemical and is patented by CSIRO Australia as a fumigant and sterilant for soil, timber, grain and medical uses. Most initial work was on timber and soil uses as grain was largely devitalised by treatment and this was not seen as a priority area.
The Australia intensive livestock industry needs reliable cost effective sources of feed grain particularly during drought which can occur three years in ten. In Years of drought more grain must be imported than the current import protocols can cope with. As preliminary data indicated that $C_2N_2$ may provide a solution, the intensive livestock industry approached CSIRO to have it assessed for devitalising imported feed grain. Results presented here show that $C_2N_2$ is an effective devitalising agent for wheat, barley, sorghum and maize. The dose required to achieve complete devitalisation reduces at higher moisture contents. At 14% moisture content barley is the most difficult to completely devitalise. However, at 16% moisture content barley is devitalised at a similar dosage to wheat and maize.



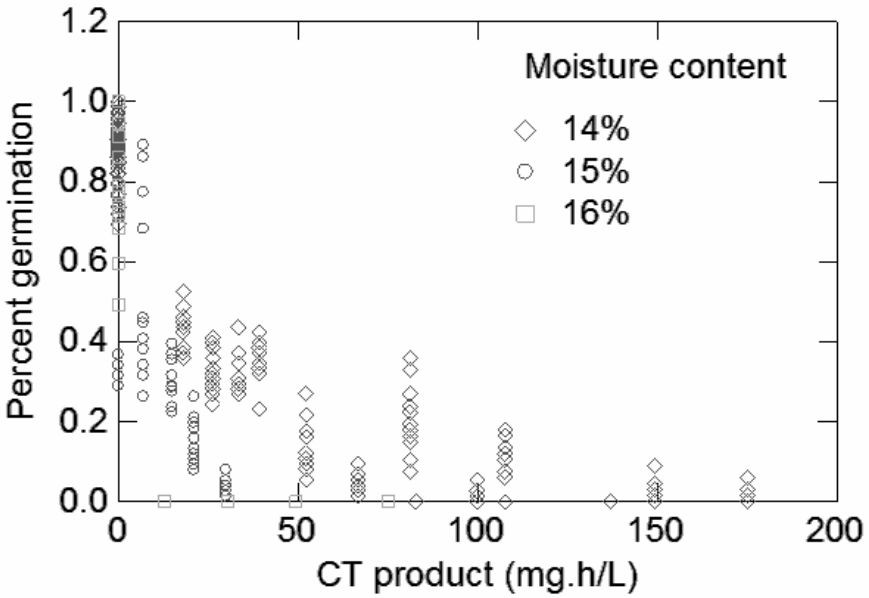

Dosage of ethanedinitrile $C_2N_2$ to devitalise wheat at three moisture contents 14, 15 and 16%




Dosage of ethanedinitrile $C_2N_2$ to devitalise maize at three moisture contents 14, 15 and 16%




Dosage of ethanedinitrile $C_2N_2$ to devitalise barley at three moisture contents 14, 15 and 16%




Dosage of ethanedinitrile $C_2N_2$ to devitalise sorghum at three moisture contents 14, 15 and 16%