Effects Of The Use Of Paraformaldehyde (PFA) Sterilising Pellets On Sugar Maple Health: A Review

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Research Review

Wounding the wood of trees always represents a normal stress which triggers a natural defence reaction from wood tissues, and tapping maples opens a three inch deep wound

herbaria collection plants. These findings would suggest that the PFA pellet may extract phenols from wood living tissues. Therefore, discoloration and compartmentalisation, due to the production of phenols, would not occur in the wood closer to the taphole but much further away. Furthermore, the larger bleached decayed areas found in the PFA treated wood, may very well be produced by the species of decay fungi that grow well only when the concentration of phenols is very low (Tattar and Rich 1973). Earlier it was found that different species of fungi respond differently to varying levels of phenolic compounds (Shortle et al. 1971).

As recently as 1993, both U.S. and Canadian government agencies have denied new registration for the manufacturing of the PFA pellet, under the advice of the North American Maple Syrup Council and the International Maple Syrup Institute. However, unconfirmed information supports that the PFA pellet is still being manufactured, and that three million or more pellets may have been used during both the 1993 and 1994 sap seasons.

Conclusions

The research results cited above should help to convince the maple producers and forest managers that higher and wider discoloration, compartmentalisation and decay in maple wood by the use of the PFA pellet restricts the healthy sapwood areas and diminishes translocation of sap and nutrients. Furthermore, technological advances for better sanitation in sap collection and storage presently in use by the maple industry, tested by research to be safe for maple tree health and syrup quality, have made the use of the PFA pellet unnecessary. The use of the pellet, combined with overtapping and other biological and environmental stresses, could eventually become a greater threat to maple tree health and survival. "Caring for the forest in the 21st Century" should be our motto. Let us keep the maples, with their sap, autumnal red leaves and hardwood timber, alive for future generations of maple syrup producers, leaf peepers and timber users.

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