

# **INDUSTRY REVIEWS AIR INJECTION TECHNOLOGY AND ITS USE IN THE PRODUCTION OF MAPLE SYRUP**

In recent years, some maple equipment manufacturers have sold air injection (AI) technology equipment for the production of maple syrup. For purposes of the recent industry review conducted by the International Maple Syrup Institute, air injection technology is defined as the forced introduction of air through a series of perforated pipes submerged in boiling sap in the front and/or back pan of a maple syrup evaporator. In recent years, several research studies have investigated aspects of the use of this technology. AI was designed primarily to produce lighter-colored syrup which generally produced a higher market price for syrup in the bulk market. Independent research findings confirm that the use of AI can significantly lighten the color of syrup. Also, some maple producers in Canada and the United States have reported that niter deposits on their evaporator pans have been reduced significantly using AI, although this has not been found to be the case in controlled research investigations.

In 2008, some maple industry representatives raised questions regarding whether or not use of AI was in full compliance with maple regulations in Canada and the United States. Further, there were also questions regarding whether or not the syrup produced with AI had char-

acteristics consistent with the norms for pure maple syrup and assured the production of a safe and high quality product. Several research studies have been conducted on the use of AI since 2002 in an attempt to answer some of these questions.

In 2008, a committee of the International Maple Syrup Institute (IMSI) was formed to review research findings for AI and make recommendations to IMSI's Board of Director's regarding its use. Representatives on the Committee included maple equipment vendors, maple packers, maple producers, maple researchers, and maple regulators. The committee mandate focused on reviewing the characteristics of air injected syrup compared to non-air injected syrup, an assessment of possible safety risks to the consumer, and a determination of legal conformance in Canada and the United States.

Representatives from University of Vermont Proctor Research Center in Vermont and Centre Acer in Quebec completed a thorough review and integration of independent research findings evaluating AI in Canada and the United States. The technical paper produced was very useful in helping document many of the characteristics of air injection syrup. This served as a backdrop to committee discussion which ensued. Legal references were consolidated by representatives from the Vermont Agency of Agriculture and the Canadian Food Inspection Agency. These also provided important background to committee discussions.

After review and discussion of research findings as well as legal references, the Air Injection Committee

forwarded the following industry position and associated recommendations for the consideration of IMSI's Board of Directors at their Board meeting on February 2, 2009, in St. Hyacinthe, Quebec.

There is no objection to the use of air injection technology since the characteristics of the syrup produced using air injection technology generally fall within the norms for pure maple syrup and there is no evidence of safety issues with the syrup produced. This statement regarding use of air injection technology together with the five recommendations listed below was unanimously supported by IMSI's Board of Directors.

1. That proper conditions of use of air injection technology be defined and provided to maple extension agents, maple stakeholders and others. This would include the use of an appropriate air filter, appropriate air uptake positioning and the use of equipment made of appropriate material for contact with food;

2. That the maple industry actively step up efforts to raise stakeholder awareness regarding technical and potential marketing implications of using air injection technology. Technical marketing implications are discussed in IMSI's Committee report;

3. That the maple industry sets payment for bulk syrup to reflect ongoing consumer demand and market forces. It is fully acknowledged in the report that many consumer prefer darker table grade syrups;

4. That industry requests that a research study be initiated to compare the bio-active properties, including antioxidant content (with associ-

ated health benefits) of syrups produced with and without air injection; and,

5. That the maple industry verbally advises maple regulators regarding the maple industry position on the use of air injectors. Such advice should help maple regulators determine if the use of air injection technology is compliant with state, provincial and federal regulations. It is suggested that maple regulators advise both IMSI and the appropriate provincial or state associations of any concerns regarding the legalities of using AI technology in the production of maple syrup.

The International Maple Syrup Institute is following up on the above referenced recommendations as required.

Please contact Dave Chapeskie, R.P.F., Executive Secretary of IMSI if you have questions or wish to receive a copy of the Position Paper on Air Injection Research and/ or the IMSI Committee Report which was endorsed by IMSI's Board of Directors in February 2009.

Prepared by:  
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