

2006 Philadelphia Annual Meeting (22–25 October 2006)

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**Presentation Time:** 8:00 AM-12:00 PM

# VERMONT TERROIR: INVESTIGATING THE RELATIONSHIP BETWEEN MAPLE SYRUP CHEMISTRY AND BEDROCK LITHOLOGY

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The idea that the quality and taste of food is intimately linked to the place where it is produced, known as terroir, has long been important in the wine and coffee markets. The goal of this study is to explore if and how a geologic component of terroir, specifically bedrock lithology, relates to maple syrup produced in Vermont. It is widely known among syrup producers that the taste of unblended syrup varies greatly from one site to another, but little formal work has been conducted on this topic.

Eighteen small-scale producers were chosen from across Vermont, distributed on three bedrock types: limestone, shale, and pelitic schist. None of the producers blend their syrups, and all utilize sap collected from a spatially restricted stand of sugar maples (known as a sugarbush). Sap and syrup samples were collected on three consecutive days from each sugarbush and were analyzed using ICP-AES following chemical digestion. Samples collected on different days, from different sugarbushes, and from different rock types exhibit a high degree of variability in chemical composition. However, concentrations of Ca, K, Mg, and Si are greatest in samples from sugarbushes over limestone, and lowest in those from schist. Using the Kruskal-Wallis test, differences in Ba, Ca, K, Mg, Si, and Sr concentration are highly significant ( $P < 0.05$ ) in sap samples derived from sugarbushes over the three rock types. In syrups, differences in the amount of Mg and Si are highly significant, while differences in Ca and K are notable ( $P \sim 0.10$ ). The disparity may reflect the influence of specific processing techniques and will be examined in future research.

Preliminary results from this study suggest that bedrock type contributes to the diversity and uniqueness of maple syrup produced in different areas. Future work will focus on additional local factors that may influence syrup composition and will examine the possibility of linkages between chemical composition and syrup flavor profile.

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Session No. 143--Booth# 65

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Pennsylvania Convention Center: Exhibit Hall C

8:00 AM-12:00 PM, Tuesday, 24 October 2006

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