

Innovative spout will increase maple production up to 90 percent

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Tim Perkins, director of the University of Vermont's Proctor Maple Research Center, holds the innovative new spout he developed for tapping maple trees in the production of maple syrup. The spout increases sap production by 50 to 90 percent per tree. The spout employs a small ball, visible to the left, to block bacterial backflow into the tree's tap hole, which stimulates a wound response that block the tap hole and ends sap flow. Credit: Sally McCay

An innovative new maple spout developed by the University of Vermont's Proctor Maple Research Center with funding from the U.S. Department of Agriculture secured by Senator Patrick J. Leahy, will have a dramatic impact on maple syrup production and will boost job creation and economic development in the state, the senator announced at a press conference August 17.

The new spout will increase sap yields by 50 to 90 percent per tree.

The announcement was made at Progressive Plastics in Williamstown, Vt., which began commercial production of the device, called a check valve spout, the day of the press conference. Progressive Plastics is manufacturing the spout for Leader Evaporating Company of Swanton, Vt., which licensed the technology from UVM and will market and sell it.

Blocking backflow

The check valve technology was developed by Timothy Perkins, director of the Proctor [Maple](#) Research Center. It employs a valve - a small ball that rolls back and forth in a chamber within the spout - to block the flow back into the tree of sap containing bacteria.

All tapped maple trees pull sap back into their tap holes, as they try to balance the negative pressure established both by natural process and by vacuum systems, which are pervasive in the industry. Bacterial backflow in turn causes the tree's natural defense system to wall off the contaminated area of the tap hole, essentially plugging it and ending a sugarmaker's season. Such walling off typically occurs late in the season.

By allowing the tree's sap to continue to flow, the new spout will extend the sugarmaking season by one-and-a-half to two-and-a-half weeks, according to testing conducted by the Proctor and confirmed by Leader's field testing. The sugaring season is typically four weeks long.

The tap could also mitigate the effect of global warming on the Vermont maple industry. Warming has shortened the Vermont maple season by 10% over the last 40 years, according to research conducted by Perkins.

1 million advance orders

Although Leader has not yet listed the spout in its catalog or on its web site, the company has already received 1 million advance orders. Leader is projecting sales of three million units this maple season, making the spout its number one selling product. In the future, sales could be significantly higher.

According to Gary Gaudette, president of Leader Evaporator, the check valve spout could have a revolutionary impact on the maple industry.

"It's going to add as much to syrup and sap production as vacuum tubing did. I'm confident that this is going to be the thing to use in the future." There are between 50 and 55 million taps in use in North America, Gaudette said.

Both Leader and Progressive Plastics are in hiring mode despite the recession, leadership at both companies said, and both anticipate the new spout will add further to their need to bring on new staff.

Source: University of Vermont

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