

## Tapping Survey results—2012

**YIELDS** There were over 200 participants in this year’s survey (a few are still coming in).

Yields in gallons per tap are below:

System	Buckets	Tubing w/o pump	Tubing w/ pump < 2000 taps	Tubing w/ pump 2000-67000 taps
# sugarmakers	10	41	55	84
Gal/tap	.081	.091	.174	.253

There were additional sugarmakers who had mixed gravity and pumped systems, and other who only sold sap. Why did I separate vacuum producers by tap number? One reason is that among producers with < 2000 taps, 15% reported vacuum at the pump < 20”, and 45% had vacuum <24”; corresponding percentages for producers with 2000 taps or more were 4% and 24%.

In order to better put this year in perspective, I sorted through past years of this survey and pulled out the yield per tap for sugarmakers who had sent me data every year since 2008. There were 28 sugarmakers: 5 using just gravity, 2 with about an equal mix of gravity and vacuum, and the rest with all taps on vacuum, and having operations ranging from 900 to 7000+ taps. Average production of the 28 operations is below:

year	2008	2009	2010	2011	2012
Gal syrup/tap	0.333	0.306	0.276	0.336	0.188

**TAPPING DATE** 58% of producers reported that this year they tapped the earliest ever. As far as next year, producers were about equally divided between those who planned to tap according to the weather, and those who had already decided when they would tap next year—which in many cases will be earlier than this year. The most common answer to the question—“anything you wish you had done differently?” was “tapped earlier,” given by 45 people.

**LAST BOIL** 71% said their last boil was March 25 or earlier. Reasons for quitting while there was still sap to boil (109 people fell into this category and several had more than one reason for stopping) were: too difficult to filter sap—27 producers; worried about damaging RO membrane—17 producers; too difficult to control foam—28 producers; too difficult to filter the syrup—46 producers; don’t wish to produce commercial syrup—63 producers. Other reasons I didn’t list included sap sugar was too low, and sap was ropy and wouldn’t turn into syrup.

**OFF FLAVORS** 13% of producers who boiled after March 25 claimed to have made no off flavored syrup. Altogether, the percent of off-flavored syrup reported times the total syrup made equates to 25,600 gallons, or 13.5% of all syrup made by this group.

**DARK SYRUP** The question about “OK tasting commercial” confused some people as several reported 100%. I meant what percent of syrup was made that was OK tasting but too dark for our

VT grade B. A lot of this syrup was reportedly made this year. According to the new proposed grade change, this syrup would be a table grade. Support for this portion of the grade change, which would put no lower limit on light transmittance as long as the syrup was not off-flavored, was as follows: In support—54%; opposed—32%; unsure—14%. Sugarmakers in NH, Maine etc.—this proposed change will apply to you too—it's for the whole industry.

**SPOUTS** Of 173 producers reporting the use of some type of plastic spout, 37% used some clear spouts, and 18% used all clear spouts. Since it was a very warm season, it would have been interesting to determine if clear spouts ran longer than black spouts, but I couldn't tell from these data. Many people used only one type of spout, and those that had more than one type generally said that they all seemed to quit about the same time in the 80 degree weather.

**TAPPING DEPTH** Reported tapping depth ranged from .75" to 3.25". I asked whether you use a stop or just eyeball the depth; 58% of producers use the eyeball method, which in my experience means that your tapping depth varies somewhat, as it is quite difficult to drill the same depth every time unless you are being very deliberate and have few holes to drill. Using a stop, other than something like tape which soon wears out, means that some holes will be less deep due to projections of the bark. When people set a depth stop, are they measuring from the point of the drill, the portion of the drill that is full width, or something in between?

After reading some discussions of tapping depth I decided to revisit this topic in 2012. At the PMRC, I tapped 20 trees with an average diameter 18," with 2 tapholes per tree—one shallow and one deep. Tapholes were on opposite sides of the tree, and also offset vertically. The shallow hole averaged one and five sixteenths inches from the outside of the bark (measured from the point of the drill) and the deep hole averaged two and one quarter inches from the outside of the bark. Half the shallow holes faced E, half W, likewise for the deep holes. Sap was collected under 24-25" vacuum in the clear vacuum chambers that we use at PMRC to measure volume from tapholes under vacuum. Results were interesting, although the season was short (I stopped collecting sap on 3/19). The total sap volume from the deeper holes was 70% greater than from the shallow holes, and the deeper hole out-produced the shallow hole on every tree.

According to your data, 15% of you tap 1 1/4" deep or shallower, 41% tap 1 1/2 " deep, and rest tap deeper than this. I'm sure that you would like to know if there will be difference in sap volume between 1 1/2" holes and something deeper; that will have to wait until next year. If you have comments or suggestions about this I would like to hear them.

**TUBING WASHING** Few people reported that they intended to change tubing washing procedures this year despite the weather.

**EVAPORATOR CLEANING** 75% of producers use acid at least once to clean the evaporator, and 39% use it more than once. Other methods include using water, vinegar, and letting the syrup rot in the pan at the end of the season. Many of you saw the agreement worked out with the Vermont Department of Environmental Conservation regarding neutralization of maple

cleaning water before dumping it—if you were at Hyde Park or Bellows Falls this winter it was in the folder with the program; if not it can be found here on the VMSMA website:

<http://vermontmaple.org/files/Procedures-for-neutralizing-maple-wash-water.pdf>

Comments and suggestions on improving these procedures, particularly in regard to neutralizing RO cleaning water, are welcome. We did the best we could, given that we really needed an agreement with DEC to stave off more restrictive regulations, but if you have better methods or ideas, please share them.

**INVASIVE PLANTS** The only county in which sugarmakers claimed that they either did not have invasive plants or weren't sure if they were present in their woods, was Essex. Sugarmakers in southern counties and near the Connecticut River or Lake Champlain were more likely to have them; many producers are actively trying to remove invasives, and some admit that the plant populations are out of control. For all the many sugarmakers who said that they didn't know if species like honeysuckle, barberry, or Oriental bittersweet were present in their woods, the Vermont Nature Conservancy provides excellent information for identification and control of these nuisance species:

<http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/vermont/volunteer/invasives-in-vermont.xml>

[http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/vermont/volunteer/nature\\_conservancy\\_invasives\\_landowner\\_guide\\_april\\_2010.pdf](http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/vermont/volunteer/nature_conservancy_invasives_landowner_guide_april_2010.pdf)

Controlling your invasive plants is time well spent, because once established on your property these plants will only increase and spread if left alone.

**TICKS** Fifty five percent of sugarmakers in this survey said that they had ticks in their woods; an additional 14% thought they might be present. Orleans was the only county in which sugarmakers claimed not to have ticks. Tick populations are moving north with milder weather, and ticks are active for more months of the year when the winter is less severe. Most of the ticks you will find on you are deer ticks, which often carry Lyme disease, so precautions and self examination after spending time in the woods is a good idea.

**Gravity producers:** I wrote a new article for the June 2012 Maple Digest on my research with 3/16" tubing and the high vacuum I have achieved using it.

For those of you looking for the webpage **TREEMET** on the PMRC site—I did not run this experiment in 2012, due to failing equipment, too little time due to other research commitments, and lack of funds to replace equipment. I may start it up again in the future.

Many of you sent in suggestions for **research**. These have been compiled and given to Tim Perkins, director of the PMRC, who sets the research agenda for PMRC staff.

Some things you wish you had done differently, besides tap earlier:

Wish we had not run 85 degree sap through the RO.

Never try to boil sour sap from a heat wave. It was a disaster!

Shot more red squirrels.

Skipped the buckets.

Found ways to keep sap cool.

Some comments on the survey, from producers:

March 14<sup>th</sup> was the date of our last boil (Windsor Cty), same date as our first boil last year.

My worst season in 40 years (Orange Cty).

This year seemed to defy conventional wisdom about what makes sap run (Chittenden Cty).

Should I have tapped earlier? My neighbors made 600 gallons before I tapped a tree. People asked all January if I was tapping and I thought it was too early, that the weather would straighten out in February and there would be a normal season. (Rutland Cty).

Poison Ivy is what is hopeless to control here. Suggestions? (Merrimack Cty, NH). [yes, deer supposedly love it—but they bring other problems].

I've heard from sugarmakers in 3 counties that squirrel damage this year was the worst they had seen (Windham Cty).

How to clean evaporator—I find and hire a local teenager who has never done it before and has no idea what a lousy job it is!

Economics—maybe this year will wake a few people up—like dairy farmers, you can't borrow your way out of this. Do a budget plan—it's a business!

Regards,

Tim Wilmot—UVM Extension Maple Specialist