

Greetings:

5/23/11

This year there were 219 survey participants with a total of 889,462 taps: 47 producers with less than 500 taps, 110 producers with 500-3999 taps, and 62 producers with 4000 or more taps. 58 producers used gravity exclusively for sap collection, 135 used vacuum exclusively, and the rest had mixed gravity and vacuum systems.

It was a good year for many people. 43% of gravity sap collectors said 2011 ranked #1 in amount of syrup made, as did 59% of people with vacuum. Most people interpreted this question as the amount made per tap, but I realize that some people said it was the best year in terms of total volume—and for some this happened because they added taps. Of the 890k taps belonging to participants, almost 101k taps were new this season. Twelve people reduced their tap number, while 38 people added at least 500 taps.

The average yield (gallons of syrup per tap) was .206 for all gravity collectors, and .415 for all vacuum collectors. Not everyone had a great year, for various reasons, one of which was that the first 2/3 of March was too cold in some locations.

While this survey was not totally random, and the numbers may be skewed a bit because of who did or did not participate, the following can be taken as a general trend, based on this survey: The total amount of syrup made by all producers can be divided by the size of operations: 7.1% was made by producers with less than 2000 taps, 10.5% was made by producers with between 2000 and 3999 taps, 25.6% was made by producers with between 4000 and 9999 taps, and 56.8% was made by producers with 10,000 taps or more. There were 58 producers who used only gravity for sap collection. Together they made 1.8% of total syrup made by all producers in this survey. Another 39 producers had some taps on gravity, mostly a small percentage of their taps. They added about another 1.7% to the total syrup in this survey. Thus only 3.5% came from gravity, the rest from vacuum. Also, reverse osmosis was used in virtually all large operations—only one operation with 4000+ taps did not use RO. 85% of all syrup was made using RO; of 108 producers who reported using it, 32 concentrated to 8% or lower, 35% concentrated between 9% and 13%, and 33% concentrated to 14% or higher. Because most of the latter group were large producers, 54% of all syrup (made by respondents to this survey) came from sap concentrated to 14% or higher (4 producers went to 20% or higher).

Of the 212 producers who reported their tapping date (not counting 2 from Connecticut), 39% started tapping by February 15, including many producers from northern VT counties. 29% started tapping in March. The latest boil reported by county was: Bennington 4/12; Windham 4/15; Orange 4/18; Windsor 4/19; Franklin 4/23; Rutland and Addison 4/24; Caledonia, Essex and Orleans 4/25; Chittenden and Washington 4/27; and Lamoille 4/29. The largest group finished between 4/8 and 4/12. 36% of producers boiled at least 2 months after they started tapping.

As an aside, some sugarmakers from Eastern Quebec visited the PMRC on 5/19. Their 20k tap sugarbush is between Riviere-du-Loop (north of Quebec City) and the Maine border. Their first boil was 3/27 and last boil was 5/5. They made 2.4lbs/tap (.22 gal/tap) and they considered it to be a good season.

Among vacuum users, 35% had 5% or fewer trees with more than one tap (group 1), while 17% had 50% or more trees with more than one tap (group 2). It is well known that adding a second tap to a tree is unlikely to double the sap yield for that tree, but just how much is gained by the second tap has not been

accurately determined. It depends on the size of the tree, and probably other factors, and this has been the subject of a research project of mine at the PMRC over the last two seasons. I will be reporting the results this fall. Among participants in this study, group 1 producers made about .025 gal/tap more than group 2, which is a smaller difference than I would have expected. Group 2 producers probably made more syrup per acre. It depends on the size tree in which the second tap is placed, and according to this year's data, few people tapped a tree smaller than 18" more than once. This minimum size is quite different than the answers I got to this question in 2009, so either there has been a change, or people are measuring differently this year.

Sap sweetness: 10% of producers said it was less than average, 55% said it was average, and 35% said above average.

Damage: 18% of producers reported 10% or more taps damaged by wind (I realize "damage" can be interpreted many ways), with most of these sugarbushes in western VT. A few producers in SE VT reported significant damage by ice on the same early March day that brought 2-3' of snow to many northern locations. 13% of producers reported animal damage to 10% or more taps.

Tapping depth: 71% of gravity sap collectors tapped less than 2" deep, as did 83% of vacuum producers. This is a real change from the past, and I believe it's a good one. The first edition of the North American Maple Producers Manual, published in 1996, describes a typical taphole as 7/16" diameter and 2.5" to 3" deep into the sapwood, in addition to another 3/8" to 1" through the bark. We now do a lot less damage to our trees when we tap. Also, very few producers using tubing reported using a spout larger than 5/16" diameter. As to the question of whether deeper holes led to greater sap yields in 2011, the data didn't support this, but with so many other compounding factors that influenced sap yield at different sites, it was impossible to be sure one way or another.

New spouts: producers with gravity tubing with 30% or less new spouts averaged .161 gallons syrup/tap. Gravity tubing producers with 100% new spouts averaged .231 gal/tap. 78% of vacuum producers used at least 90% new spouts or spout tips in 2011, and a few of the ones who didn't used stainless steel, which is cleanable. Because vacuum yields are affected by many things, including the pump, the tubing layout, and the time spent on leak checking—it cannot be determined from this data just how much effect new spouts had on yield; however, among producers using less than 85% new plastic spouts, only one made .4 gal/tap.

There were many styles of spouts used. Check valve spouts were the single most common type, and 34% of all vacuum producers in this survey used them on almost all their tapholes, but many other types by many manufacturers were used. As stated above, there are many variables that affect how a vacuum system performs, and this survey is not a substitute for a research study that is designed to look at a single factor in the system. In many cases, only a few of a particular model were used—too small a sample size to conclude anything. Some people made comparisons between different spouts they used; some noted that their check valve spouts ran longer than others; some were very happy with their clear seasonal spouts. Because check valves were used more than any other spouts, there were enough comments to include the two top complaints—several people commented that the adaptor and stubby separated after a freeze, and/or that they were very hard to separate at the end of the season. Breakage of the 2011 model was apparently not an issue. There were some complaints with just about every spout used, but in most cases, only 2 or 3 of any exact model were used and it would be unfair to repeat every anecdote.

Pumps: 51% of producers using pumps had water cooled models. 19% used oil flood pumps, and another 19% used dairy pumps; 17% used oil cooled liquid ring and 5% used sap pullers. The percentages total more than 100 because several people used more than one type of pump. 26 producers used variable frequency drives on their pumps for energy efficiency and ease in diagnosing leaks. Producers with only dairy pumps had the lowest yields, .26 gal/tap, but again that might also be related to other factors such as spout age and tubing layout.

Tubing washing method—here is a comparison with answers given in 2008, for people with vacuum:

Pressure wash with air and water: 2008 35%----- 2011 20%

Inject pan cleaner: 2008 10%-----2011 4%

Water only: 2008 20%-----2011 18%

Chlorine: 2008 5%-----2011 3%

Pull spouts under vacuum or “nothing”: 2008 30%-----2011 52%

A few people used alcohol or peroxide to clean in 2011. Some people clean just their mainlines.

Among gravity tubing producers, chlorine and/or water are still the most popular methods.

A major research study on tubing cleaning is planned for PMRC starting next year, assuming funding can be found to support it.

Gravity tubing: for some reason, producers with gravity tubing consistently average less syrup per tap than people with buckets. This shouldn't happen. A majority of these producers have a slope of 20% or more, which is fine for achieving natural vacuum—assuming the lines are not vented. Don't vent, it destroys any chance of getting natural vacuum and is only useful if the lines are a mess and airlocks hold the sap back. For the past 2 years I have been researching some new methods that might improve yields on gravity tubing. You will hear a report about this in the fall.

Thanks for participating,

Tim Wilmot