SUGAR BUSH MANAGEMENT - REALISTIC EXPECTATIONS

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Sugar bush management involves the selection of crop trees, judicious thinning, provision for regeneration, wise application of forest protection procedures and proper tapping. All of these serve to maintain, enhance and improve a sugar bush for the production of maple sap. The development of a high sustained yield sugar bush is the basis for a profitable maple enterprise.

There are many variables to deal with when managing a sugar bush, such as age of trees, diameter, height, rate of growth, species composition of the stand, tree form, tree condition, live crown ratio, stand density and all the environmental and biological factors that influence tree health. These complex, often inter-related, conditions and factors contribute to sugar bush productivity. They must be considered when managing the sugar bush.

SUGAR BUSH PRODUCTIVITY

Sugar bush productivity can be readily measured by the taphole yield factor. The taphole yield factor refers to the number of taps required to produce enough sap for one gallon of standard density syrup. The number of tapholes required to produce a gallon of maple syrup varies from a high of around 10 to 12 in low yielding sugar bushes to a low of about 3.0 to 2.5 in very high yielding sugar bushes.

Since the taphole yield factor is a major factor influencing the profitability of a maple operation, it is recommended that maple producers compute the taphole yield factor for their sugar bushes at the end of each season.

It is calculated by dividing the total number of tapholes in the sugar bush by the number of gallons of maple syrup produced.

SUGAR BUSH PRODUCTIVITY

Productivity Class	Taphole Yield Factor
Excellent	Less than 3
Good	3 - 4
Average	5 - 6
Poor	More than 6

While it is not realistic to expect that productivity in every sugar bush can be upgraded to excellent, it is a fact that many maple producers with low yielding sugar bushes have improved the taphole yield factor considerably through the application of wise sugar bush management practices. Also the installation of tubing and vacuum collection systems will increase production in years when weather conditions for natural flow are somewhat less than ideal.

Realistic Expectations

It is important for every maple producer to have realistic expectations from sugar bush management activities. Since many variables occur between sugar bushes and even within sugar bushes, expectations must also vary. Unrealistic expectations give rise to unnecessary concern and frustration.

Time is one of the most important variables to recognize when managing a sugar bush. Trees are not static, nor is the sugar bush - time brings changes, change is not always positive - timing is important in setting up a thinning schedule for the sugar bush. Often thinnings carried out are too late to be most effective.

Many maple producers have a tendency to retain old growth, often overmature trees. With today's modern tubing systems it's hard to tell how well an individual tree is running. Old trees are thus retained in the stand long after they should have been cut. Improper or lack of management can result in tree problems including reduced sap production.

SOME FACTS TO CONSIDER

1. Don't expect all trees to live to the grand old age of 300 - most don't. Don't expect even aged old growth sugar maple stands to produce forever without considering regeneration.

2. Your future is in your young trees. Don't ignore the management of young maple trees and immature stands that form part of your sugar bush.

3. Some dieback in a tree crown does not necessarily mean that sap production will diminish and the tree will soon die.

4. Occasionally, trees sometimes dieback a little or even die following release. Often these trees are codominants, intermediate, suppressed or defective trees in the stand. When possible pick fast growing, good quality, dominant trees for crop trees.

5. Some dieback in a few trees or the death of a few maple trees in a sugar bush does not normally mean that all trees are doomed to dieback or die in the near future.

6. Not all sugar maple trees are growing on ideal sites. Sugar maple trees not growing well are often on poor sites.

7. Not all sugar maple stands are located within the ideal climatic range for the species.

8. Proper tapping has not been shown to reduce the lifespan of a sugar bush. If a maple tree is tapped for 75-100 years - I ask what else on a farm produces that long?
   How long should you realistically expect a maple tree to produce?

Paper presented at the North American Maple Syrup Council Meeting, Portsmouth, N.H. U.S.A. October 25, 1988.

PRODUCTION AND FARM VALUE OF MAPLE PRODUCTS IN ONTARIO 1924-1988

Year	Maple Syrup Production in gallons	Maple Syrup Farm Value $	Maple Sugar Production in Pounds	Maple Sugar Farm Value $	Total Farm Value of Syrup and Sugar $
1924	774,000	1,795,000	407,000	98,000	1,893,000
1925	705,000	1,699,000	783,000	172,000	1,871,000
1926	778,000	1,806,000	677,000	149,000	1,955,000
1927	721,000	1,621,000	627,000	150,000	1,771,000
1928	758,000	1,758,000	570,000	131,000	1,889,000.
1929	490,000	1,146,000	426,000	111,000	1,257,000.
1930	641,000	1,455,000	482,000	121,000	1,576,000
1931	534,000	1,432,000	594,000	131,000	1,563,000
1932	550,000	825,000	351,000	63,000	888,000
1933	395,000	683,000	208,000	37,000	720,000
1934	532,000	957,000	462,000	83,000	1,040,000
1935	646,000	1,065,000	561,000	95,000	1,160,000
1936	618,000	1,070,000	538,000	91,000	1,161,000
1937	440,000	831,000	231,000	49,000	880,000
1938	571,000	839,000	79,000	14,000	853,000
1939	479,000	738,000	66,000	13,000	751,000
1940	519,000	829,000	50,000	11,000	840,000
1941	371,000	682,000	43,000	11,000	693,000
1942	577,000	1,492,000	69,000	19,000	1,511,000
1943	474,000	1,447,000	25,000	8,000	1,455,000
1944	511,000	1,589,000	30,000	11,000	1,600,000
1945	123,000	387,000	7,000	2,000	389,000
1946	235,000	740,000	7,000	2,000	742,000
1947	717,000	2,868,000	67,000	27,000	2,895,000
1948	389,000	1,529,000	23,000	8,000	1,537,000
1949	399,000	1,587,000	42,000	17,000	1,604,000
1950	507,000	2,053,000	33,000	13,000	2,066,000
1951	379,000	1,626,000	44,000	19,000	1,645,000
1952	459,000	1,932,000	16,000	8,000	1,940,000
1953	121,000	523,000	14,000	7,000	530,000
1954	264,000	1,130,000	19,000	11,000	1,141,000
1955	217,000	972,000	12,000	6,000	978,000
1956	270,000	1,272,000	6,000	4,000	1,276,000
1957	338,000	1,574,000	13,000	7,000	1,581,000
1958	318,000	1,529,000	32,000	18,000	1,547,000
1959	190,000	960,000	9,000	7,000	967,000
1960	250,000	1,302,000	13,000	8,000	1,310,000
1961	319,000	1,608,000	24,000	17,000	1,625,000
1962	311,000	1,579,000	16,000	10,000	1,589,000
1963	219,000	1,141,000	8,000	6,000	1,147,000
1964	155,000	837,000	8,000	6,000	843,000
1965	187,000	1,047,000	10,000	8,000	1,055,000

Year	Maple Syrup Production in gallons	Maple Syrup Farm Value $	Maple Sugar Production in Pounds	Maple Sugar Farm Value $	Total Farm Value of Syrup and Sugar $
1966	312,000	1,832,000	18,000	16,000	1,848,000
1967	224,000	1,365,000	14,000	14,000	1,379,000
1968	228,000	1,435,000	11,000	12,000	1,447,000
1969	191,000	1,279,000	8,000	9,000	1,288,000
1970	182,000	1,243,000	17,000	20,000	1,263,000
1971	148,000	1,060,000	15,000	18,000	1,078,000
1972	180,000	1,388,000	14,000	19,000	1,407,000
1973	124,000	1,103,000	12,000	21,000	1,124,000
1974	142,000	1,486,000	16,000	28,000	1,514,000
1975	120,000	1,437,000	9,000	20,000	1,457,000
1976	133,000	1,741,000	14,000	33,000	1,774,000
1977	146,000	2,056,000	9,000	24,000	2,080,000
1978	143,000	2,138,000	12,000	32,000	2,170,000
1979	179,000	2,949,000	18,000	55,000	3,004,000
1980	103,000	2,020,000	8,000	24,000	2,044,000
1981	143,000	3,141,000	13,000	51,000	3,192,000
1982	169,000	3,978,000	47,000	203,000	4,181,000
1983	157,000	3,696,000	18,000	72,000	3,768,000
1984	182,000	4,485,000	19,000	86,000	4,571,000
1985	218,000	5,600,000	26,000	120,000	5,720,000
1986	138,000	3,801,000	34,000	163,000	3,964,000
1987	115,000	3,927,000	28,000	153,000	4,080,000
1988	154,000	5,809,000	26,000	185,000	5,994,000

* Source: statistics Canada