

Maple Syrup Digest

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History of the George D. Aiken Sugar Maple Lab



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A Short History of the George D. Aiken Sugar Maple Laboratory

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In today's world of maple industry research most are familiar with the work of the Proctor Maple Research Lab in Vermont, the Cornell Maple Program in New York, and the Centre ACER in Québec. What is easily forgotten is that from 1973 to 1982 the USDA Forest Service operated another dedicated maple research center, the George D. Aiken Sugar Maple Laboratory in Burlington, Vermont.

Maple-related research by the Forest Service began in Burlington in 1956 with the creation of a general research station as a sub-unit of the Forest Service's Northeastern Forest Experiment Station. With offices in the federal building in downtown Burlington, researchers like William J. Gabriel, Albert G. Snow, and Harold W. Yawney, worked in partnership with University of Vermont (UVM) faculty on questions skewed towards maple sap and syrup production, including a well-known sweet tree breeding program. At that same time in the 1950s and 1960s, the USDA's Agricultural Research Service was home to a maple research program in its Eastern Regional Research Center in Philadelphia under the direction of C.O. Willits.

Despite there already being a federal laboratory-based research program in Philadelphia, as early as 1962, Vermont Senator George D. Aiken began speak-

ing about the idea of starting a Forest Service maple laboratory in Vermont to study ways to help the maple industry address problems with marketing maple products. Senator Aiken kicked the maple laboratory idea into full gear in 1964 when he began inserting funding requests in the annual appropriations bill. It took eight years of ongoing pressure and funding requests before Senator Aiken's efforts paid off in 1971 when the one million dollars required for construction was finally allocated. At the same time, the maple research program in Philadelphia was being discontinued following the 1969 retirement of C.O. Willits, its founder and longtime director.

A contract was awarded to a local Burlington builder in April 1972 and construction on the Lab began a few months later. Secretary of Agriculture Earl Butz, Senator Aiken, and Forest Service Chief John R. McGuire in attendance at the grand opening ceremony on August 20, 1973, announcing the naming of the Lab in honor of the senator who had championed the Lab's creation.

Located on Spear Street in South Burlington on lands leased from UVM, the Aiken Lab was a beautiful and well-planned facility with 41 rooms of laboratory, office, and work space, complete with attached greenhouses, state

of the art computer technology, and the staff to help crunch numbers. What it was lacking however, was its own dedicated sugarbush and sugarhouse. As a result, Aiken Lab research was always dependent on working with private sugarbush owners or the sugarbush at UVM's Proctor Maple Research Center.

The Aiken Lab's first director, Dr. Lawrence David Garrett, was transferred to Burlington from another Forest Service research lab in West Virginia two years before its 1973 opening. With his new position, he was tasked with developing a five-year plan focusing on marketing and continued improvements in sap and syrup processing. Garrett did not have a background in maple sugaring, rather his expertise was in forest and agricultural economics. However, he did not let that slow him down and he dove in to his challenge, soliciting input from industry representatives and quickly learning as much as he could about the maple industry in a very short time. In response, Dr. Garrett and his staff developed several projects and initiatives that caught the industry off guard. In an interview with the author, Dr. Garrett shared that in hindsight their plan was a bit too aggressive for some, with a focus on streamlining the syrup grading system, developing an international marketing organization, and the introduction of new techniques for sap and syrup processing. Organizational change was slow to come to the maple industry and Dr. Garrett often required the help of Bill Clark, then president of the Vermont Maple Sugarmakers Association, to open doors and get industry to

o listen to the ideas and programs that were being proposed. Vermont Maple Sugarmakers

As a federally funded facility, Dr. Garrett felt that the Lab should have a strong emphasis on outreach to the maple industry, through both direct engagement and meaningful and accessible publications. One of the most important early efforts of the Aiken Lab was to bring together maple industry representatives from the U.S. and Canada to begin discussing their shared interests in marketing maple products. In August of 1974 the first US-Canadian Maple Marketing Conference was held in Burlington at the Aiken Lab, which resulted in the agreement that the maple industry needed an international organization to aid in the promotion of maple products. A few months later in November at a second meeting in Montreal, Aiken Lab staff proposed an organizational model and bylaws for the creation of the International Maple Syrup Institute (IMSI) and the stage was set for its formation.

Earlier maple research begun by Burlington based Forest Service researchers prior to the creation the Lab continued, such as William J. Gabriel's work with tree physiology and genetics and Russell S. Walters work perfecting tubing and vacuum systems to improve sap production. New studies led by Paul Sendak looked at consumer preferences and attitudes on syrup types. Lab staff also worked on improvements in syrup quality, investigating maple flavor and color parameters in efforts to develop a universal grading system. Other new

research aimed at more fuel-efficient methods of syrup production investigated sap preheater technology, heat exchangers, and vapor compression distillation.

Building on their successes and accomplishments in the first five years of work, the Lab looked to address other areas of need in the maple industry with a second five-year plan. In the second five years of the Lab, Dr. Garrett began meeting with representatives from various food production sectors to learn more about that area of industry. The Lab was tasked with coming up with new ideas for new maple products, such as dried maple flakes that was developed by Lyman Jenkins. According to Garrett, had he stayed in Burlington and the Lab's purpose not been redirected, he would have added food scientists to the staff and pushed for a significant focus on the development of other maple products. The second five-year plan was also influenced by a desire by the Forest Service and the Department of Energy to study the efficiency of wood energy and other alternatives to petroleum-based fuels, an important consideration during the 1970s energy crisis.

Dr. Garrett's success with directing the Aiken Lab was noticed by Forest Service leaders and in 1980 he was asked to put his skills to work leading a new laboratory in Flagstaff, Arizona with the largest science-based research program in the Forest Service. Without Dr. Garrett at the helm, the Aiken Lab was now in a vulnerable position, and in 1982 the Forest Service announced

it was refocusing the Lab's research emphases. Moving away from research important to the maple industry, the Lab was directed to study the effects of acid rain and environmental stress on forest health along with considerations of forest management for recreational use. In justifying their decision, USFS officials claimed that the Aiken Lfab had done as much as it could to improve maple sugaring and that acid rain was a more pressing issue. As something of a culmination of the Lab's work and a definitive closure of the maple research program, that same year, the Forest Service published "Sugar Maple Research: Sap Production, Processing, and Marketing of Maple Syrup" a synopsis of much of the important work accomplished in the Lfab's ten short years.

Despite the change in direction of the Lab, existing Forest Service staff continued working in conjunction with UVM faculty to conduct research of interest and importance to the maple industry. Most notable was research by the Forest Service's Paul Sendak and UVM's Mariafranca Morselli into the economics of the use of reverse osmosis technology and its effects on sap and syrup quality. With the discontinuation of maple industry related research, the Lab was renamed the George D. Aiken Forestry Sciences Laboratory in 1988 and in 2013 the Forest Service transferred ownership of the Lab to the Rubenstein School of Environment and Natural Resources at the University of Vermont. Dr. Matthew M. Thomas is a maple industry historian. You can read more maple history articles like this at his website, www.maplesyruphistory.com.



Figure 1
Senator Aiken speaking to the audience at the grand opening of the Aiken Lab in August 1973. (photo courtesy UVM Special Collections).



Figure 2
Planting a commemorative maple tree at the grand opening of the Lab, left to right - Senator Aiken, Forest Service Director of Northeast Forest Experiment Station Warren Doolittle, Forestry Technician Bob Gaboury (kneeling), Agriculture Secretary Earl Butz, and Aiken Lab Director Lawrence David Garrett (photo courtesy USDA Forest Service).