Hops Cultivation in Wisconsin: A Nineteenth Century Interlude

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Abstract
After the early frontier of Wisconsin was settled by Europeans following the 1840s, Wisconsin farmers experimented with a number of crops and other agrarian activities in their search for viable and profitable economic alternatives. One of these activities was the cultivation of hops. Hops, used exclusively for the brewing of malted beverages, became an important crop for Wisconsin farmers during the middle of the 19th century, then disappeared. This paper examines the factors which led to both the growth and the demise of hops cultivation in Wisconsin and locates the areas where its production was most important within the state.

Introduction
The nineteenth century was an exciting, dynamic period of change and expansion in the United States. Both the place and the process of the frontier were functioning at a rapid, uneven pace as Americans and newcomers raced westward for lands, resources, and opportunities. There was also a search for profits among these migrants in many sectors of the newly-developed regional economics. Agricultural specialties, forest products, and minerals were but some of the resources found, developed, and exploited. By the time the fast-moving American frontier reached what was to become the state of Wisconsin by the 1830s, many farmers began to open and settle lands within its boundaries. Most of these early Wisconsin farmers were at first engaged in a "mixed" form of subsistence farming, but that soon changed. After land was cleared and transport systems were functioning, Wisconsin farmers switched over to an increasingly commercial sort of farming.

This more modern form of farming included local and regional tendencies to increase levels of commercialization, farmland clearance, specialization, and longer-distance marketing of now-for-profit products. The other, brief patterns of subsistence frontier farming were left behind as quickly as possible. Moreover, there was a good deal of experimentation with various specialty crops and animals by American farmers -- including those in Wisconsin -- in this search for commercial viability. One such specialty crop that was important for Wisconsin during the last half of the nineteenth century was hops (Danhoff 1969).

The Background and Development of Hops as a Crop

Hops have had, and continue to have, one major use by human consumers: to flavor and help preserve ales and beers. Hops actually grow wild in Wisconsin and other portions of nearby Canada and United States, but the varieties that would become the mainstays of commercial hops cultivation in North America originally were domesticated in Bohemia during the Middle Ages. They were introduced in Britain by the early 1500s, and into western Europe shortly thereafter. These domesticated hops were then brought to the New World by the Dutch, who were brewing in New Amsterdam by 1624, and the English, who made ales in Massachusetts by 1637 (Vogel, et al. 1946).

Hops buds and their natural oils provide a special bitter taste to malted beverages, clarify the "wort" or fermenting fluids carrying the alcohol-producing malt sugars, and help to preserve the finished products before the invention of refrigeration. Hops, however, have no other commercial uses. Hops cannot be used as animal fodder, and no other kind of direct human consumption has ever been discovered for it, other than in malted beverages.

For nineteenth century U.S. farmers, hops cultivation was also both capital- and labor-intensive. Requiring a necessary and substantial outlay of money and materials for poles and frames for the hop vines to grow on and for well-drained, fertile lands, hops also required large amounts of fertilizers, insecticides, and extensive on-the-farm processing facilities (Darlington 1984). These facilities included houses with built-in sources of heat for the drying process, baling machines, and storage areas. Hop growing was also labor-intensive in that much of the preparation of frames, planting, cultivating, weeding, and fertilizing was done by hand. Additionally, until mechanical harvesters were invented in the mid-twentieth century, large, temporary work crews were hired for the harvest (Tomlan 1992).

Hops tend to be particularly sensitive to environmental stimuli and stresses. Late spring and early autumn frosts are destructive of hop buds. Overly high levels of summertime temperatures and humidity concentrate the hop oils and make them too bitter to use in brewing. Ideally, the areas in North America most suited for hops cultivation on a commercial scale lie north of the Ohio River Valley, south of the Canadian Shield, and in areas having between 35 and 55 inches of precipitation annually (Tomlan 1992; Rumney 1983).
Ales and beers were common drinks in colonial and nineteenth-century America, but were most favored in the northern states and nearby southern Canada. Whiskey had by the early 1700s become the drink of choice south and west of the Chesapeake Bay, and these regional consumption patterns reflected the development of hops growing regions, or lack thereof (Hedrich 1933).

Initially, ales and beers were brewed at home in small batches by the women of the household for immediate consumption. Only in the late 1700s and early 1800s did commercial breweries develop, mainly in the larger urban markets, in order to have access to a sufficiently large clientele and to get their wares to customers before they spoiled. Hops could not prevent spoilage, and refrigeration was a facility of the future (Arnold 1933).

By the turn of the nineteenth century, specific areas specializing in hops began to form in America. The first was in eastern Massachusetts and southern New Hampshire. A substantial beer-drinking population, large and growing urban markets, and improved transportation system stimulated demand for hops in the New England region until well into the 1840s. The second major hops region evolved from the 1840s to approximately 1910 in central New York. This region was to become overwhelmingly dominant in the American hops industry until California, Oregon, and Washington took over that role.

Demographic, economic, and environmental factors conspired to reduce production, first in New England, and later in New York and other regions. The cultivation of hops drain soils of nutrients, requiring large amounts of re-fertilization. They are also susceptible to plant diseases and pests, and because they are perennials, they cannot be a part of a crop rotation. As labor costs rose, many farmers migrated to the west. For a while, farmers in Wisconsin, many of whom were originally from New England and New York, took up hops farming.

**Wisconsin Hops, 1840 to 1900**

After the War of 1812 was finished, Americans
Figure 2. Location of Hops Production in Wisconsin in 1870

Note: One dot represents 10,000 pounds

Source: United States Census of Agriculture (various years, especially 1850-1920)
Figure 3. Location of Hops Production in Wisconsin in 1890

Note: One dot represents 10,000 pounds

Source: United States Census of Agriculture (various years, especially 1850-1920)
moved westward in roughly east-to-west and parallel paths of migration into the new lands west of the Appalachians. Many of the newcomers to what would become Wisconsin came from New England and New York, as well as from foreign sources (Mitchell 1978; Tomlan 1992). They brought with them knowledge and skill in farming, including the growing of hops and of brewing. It is interesting to note, however, that most of these early hop growers and brewers were transplanted Yankee/Yorkers and not Germans. The Germans and their beers would come later to Wisconsin. By the 1850 census, there were ten breweries, producing 18,820 barrels and 33,000 bottles of beer (Walsh 1972). The basis for a commercial hops growing industry was begun.

Much of the hops grown in Wisconsin from this early period through the heyday of hops cultivation were grown in the Central Plains and along the eastern and northern fringes of the “Driftless” area of the southwestern part of the state. This area of mainly deposited soils had enough terrain variability to drain well, without having major problems with steep-slope erosion. Soils were well-watered, and also sufficiently fertile for the demands of hops. Additionally, this area was accessible to some of the population centers and the beer-making industry of the state (Vogeler 1986).

Within this environmental setting came a boom, albeit a brief one, for hops cultivation by Wisconsin farmers. This boom, largely limited to the late 1860s, 1870s, and early 1880s, was stimulated by a number of factors. In the late 1860s, Wisconsin was producing 5,000,000 pounds of hops per year (Figures 1-3, above).

One of the reasons for this growth was that the period witnessed a number of problems within the older eastern hop growing areas in New England and New York. Problems in the aforementioned areas included late frosts, insect infestation, and blights that severely damaged the eastern groves (Nesbit 1973; Tomlan 1992). For a while, prices for hops rose and many Wisconsin farmers were able to take advantage of profitable hops production. For example, hops sold for twenty-five cents a pound on the New York market in 1861, and seventy cents a pound in 1867 (Current 1976). Brewing of various kinds of beers rapidly increased after 1850, with the in-migration of beer-drinking peoples from western and central Europe, particularly from Germanic regions. The state’s infrastructure improved, making transport of raw materials and finished products like beer more mobile and readily accessible to an expanding rural and urban market. Yet, this flush of profit and activity would not last. Again, a number of factors conspired to pull down this industry in Wisconsin.

First, after the troubles in eastern hops growing areas during the 1860s, the structure of that portion of hops cultivation in the United States changed. The oldest hops growing regions in New England quickly faded away. Soil exhaustion, high labor costs, urbanization, the development of more profitable alternative crops and new agricultural opportunities (like dairying), and a growing preference for lightly hopped “lagers” quickly made New England’s hops groves a thing of the past. New York growers tended to increase hops cultivation, with new capital, land, and technological resources. And, new and highly productive hops growing areas in Washington, Oregon, and northern California (with fresh soils, cheap labor, and intercontinental railway connections) quickly became more competitive. Additionally, hops buying, distribution, and speculation became more of a corporate process, thereby bypassing the small family farmers who grew hops as just one of several crops. The switch in tastes from “English” drink to lighter lagers also shrunk demand for Wisconsin hops.

Secondly, a number of forces from within the state began to influence Wisconsin’s hops growers. The state’s Methodist convention of 1867 (literally in the midst of some of Wisconsin’s most important years as a hops-growing area) resolved to urge local farmers to discontinue hops cultivation and any other activities that would be used for the making of malted or distilled beverages. The state’s Baptists, Congregationalists, and Presbyterians made similar exhortations for abstinence from all forms of alcoholic drink, and so did a number of (mainly German) Catholic groups. Incidentally, the Lutheran, Episcopal, and most Catholic groups did not rail against hops (Current 1976).

Economic forces also helped to depress hops in Wisconsin. With the resurrection of hops production in New York and the Pacific Northwest, the national average price for a pound of hops was ten cents by 1868. Only those larger groves that could operate under economies-of-scale were able to survive, as the smaller operators opted for other activities such as dairying, “Corn-Belt” corn-beef-swine production, and other specialties such as cranberries.

Concluding Comments

While hops growing activities of Wisconsin were largely just memories by 1900, for a short period in the state’s agricultural history, hops was a leading and
mostly profitable alternative for many of the state’s farmers. In many ways, Wisconsin hops became important during a brief “window of opportunity” -- mainly from about 1800 to 1885 -- and then gradually disappeared. Overproduction, speculation, changing tastes in beers and ales, uneven applications of labor and technology, and alternative production systems conspired to first encourage and support Wisconsin hop cultivation, and then to cause its demise by the turn of the twentieth century. While hops may be grown by a few who would “brew their own,” hops cultivation in Wisconsin is but a memory today.

Literature Cited


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Attachment 1

Map of India
(States and Union Territories)