

# SWEET POTATO CURING BARNs: AN AGRICULTURAL LANDMARK

by

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(Under the Direction of John Waters)

## ABSTRACT

Sweet potato curing barns were once a major part of the agricultural world, especially in the Mid-Atlantic and Southern states. Sweet potato curing barns are utilized to cure the freshly harvested sweet potatoes, allowing for a longer storage period and a sweeter taste. Craftsmanship and building design provide the features that are essential to a successfully constructed sweet potato curing barn. Features of such structures include ventilation, insulation, some form of artificial heat, and means of air circulation within the barn. In some areas, converted tobacco barns or old farmhouses have been utilized as sweet potato curing barns with only minimal alterations or additions. Decay and neglect of such barns has sparked an interest in raising awareness and understanding of the culture surrounding these structures. Adaptive re-use and the use of tax incentives have provided a way to preserve sweet potato curing barns for future generations to study and enjoy.

INDEX WORDS: Sweet potato curing barn; Historic preservation; Agriculture; Sweet potatoes; Caroline County, Virginia

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By

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## CHAPTER 1

### INTRODUCTION

Sweet potato curing barns have long been a fixture on Southern and Mid-Atlantic farms.<sup>1</sup> Although there are few historic curing barns that are recognizable today, several still exist, either in states of decay or camouflaged by a new use. Sweet potato curing barns are utilized for curing sweet potatoes which allows for a longer storage life, as well as a sweeter flavor. These structures are an essential part of the sweet potato industry, both historically and today.

#### Purpose of the Study

The history of agriculture is often overshadowed by other new, exciting, and seemingly more innovative fields of study. However, there is much that we, as Americans and especially, Southerners, can learn from the evolutions that have changed and enhanced the realm of agriculture and the architecture associated with it. Aspects of the farming landscape, such as open fields, farming equipment, and the noise and clatter of a livestock farm, are often idealized in our minds. Historic barns, especially, have been the focus of much of the romanticism that is associated with these rural, farming landscapes; however, preservation efforts concerning these structures has been lacking.

Sweet potato curing barns are a dying breed. As the agricultural market has changed and sweet potatoes no longer hold the same place of importance that they once

<sup>1</sup> H.C. Thompson, *Sweet Potato Production and Handling* (New York: Orange Judd Publishing Company, Inc., 1929), 11-12.

had, these structures are being lost to decay and neglect. Areas that are still significant producers of sweet potatoes have converted to new, commercial structures that offer everything in the way of innovative design and nothing in the way of character and craftsmanship. As these historic sweet potato curing barns are slowly fading into history, there is much to be documented about these structures for the benefit of posterity and future generations.



Figure 1.1: Sweet Potato Curing Barn – Collins Farm, Caroline County, Virginia

There is a lack of knowledge by those outside the agriculture world concerning the history and subsequent cultural importance of sweet potato curing barns. Many of the individuals that had some form of experience with these structures, whether owning one or utilizing it, are aging and their knowledge is being lost along with the structures themselves. Due to the increasing rate of loss of farmland in many of the historically rural areas, coupled with the apparent lack of interest that the next generation living in these rural areas has in family farms, or farming in general, these structures are falling victim to disrepair and neglect.

It is the goal of this thesis to raise awareness and, subsequently, generate a sense of pride and a place in the hearts and minds of those who are in areas where sweet potato curing barns are currently located or have been historically. Not only are these structures aesthetically pleasing but their utilitarian use has made them an integral part of sweet potato growing areas for decades. As sweet potatoes were once a very valuable and lucrative commodity<sup>2</sup>, sweet potato curing barns were equally important. Without these structures and the role they held in the curing and storing of sweet potatoes, the vernacular farming landscape would be much altered.

In raising awareness, a specific goal of this thesis is to encourage preservation of these structures. Some of the sweet potato curing barns that are no longer utilized in their original capacity on working farms have been converted to storage. Giving these structures a new purpose has, in a manner, preserved them. In other areas, where the farms have not been as active or have been sold to other individuals, these barns are failing. With little or no use, these structures soon decay and deteriorate to the point of no return.

Through educating farmers and landowners about preservation options that are open to them, such as easements and preservation grants, or basic care and maintenance, perhaps the threats of time can be stayed. Preserving these structures for future generations provides a window to the past when sweet potatoes rivaled “King Cotton” in the South.<sup>3</sup> Although preservation can be a time-consuming and costly measure, farmers

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<sup>2</sup> Percy Scott Flippin, *The Royal Government in Virginia, 1624-1775* (New York: Columbia University, 1919) 281.

<sup>3</sup> “Sweet Potatoes Crowd Out Cotton,” *Sweet Potato Journal* 1, no.3 (October 1946): 9.

can agree that historic sweet potato barns can be reused in a profitable and economical manner while sustaining the craftsmanship that was incorporated into these structures.

### Interest and Background

I developed an interest in sweet potato curing barns while growing up in Caroline County, Virginia. Although Interstate 95 divides the county in half, I was raised in a rural area surrounded with farms, fields, and historic barns. On our farm, one barn in particular, was very special to me. The old sweet potato curing barn had been a main part of the farm before my parents moved there. Although sweet potatoes are no longer cured in this barn, remnants of its old purpose remain. The architectural elements that constitute a sweet potato curing barn are still visible, such as ventilation systems and the traditional slatted flooring.

Caroline County, Virginia was traditionally a rural, agriculturally oriented area between the larger cities of Fredericksburg and Richmond. The county had been formed from neighboring Essex, King William, and King and Queen counties in 1727. Early on, settlers began farming along the river beds where the land was rich and productive.<sup>4</sup> Not only was this location advantageous on account of the soil but access to transportation was also important. Transportation was facilitated through the several rivers running either through the county or along its borders, such as the Rappahannock. By the 1830s, railroads, such as the Richmond, Fredericksburg, and Potomac Railroad, were traveling

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<sup>4</sup>Marshall Wingfield. *A History of Caroline County Virginia* (Richmond, Virginia: Press of Trevvet Christian & Co., Inc., 1924), 26.

through the different towns in the county.<sup>5</sup> Milford and other rail line towns in the county became hubs for exporting fruits and vegetables to larger cities such as Richmond, Washington, D.C. or New York City.<sup>6</sup>



Figure 1.2: Milford Station, 1940 - William Griffin Photo<sup>7</sup>

Livestock was a prominent agricultural industry from the beginning, but early settlers and landowners also discovered that tobacco thrived in this area.<sup>8</sup> As farmers, planters, and landowners began looking at other viable crops, they began to diversify into

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<sup>5</sup> Marshall Wingfield. *A History of Caroline County Virginia* (Richmond, Virginia: Press of Trevvet Christian & Co., Inc., 1924), 34-35.

<sup>6</sup> Wingfield, *A History of Caroline County Virginia*, 34.

<sup>7</sup> Caroline County Board of Supervisors, "Cultural & Historic Resources," In *Caroline County Comprehensive Plan 2030* (2010), 7.

<sup>8</sup> Marshall Wingfield, *A History of Caroline County Virginia*, (Richmond, Virginia: Press of Trevvet Christian & Co., Inc., 1924), 26.



strawberries<sup>9</sup>, corn, wheat, barley, sweet potatoes, sumac for tannin production, and excelsior made from pine and cedar trees.<sup>10</sup>

In the 1930s, due to hardships brought on by the Great Depression, residents in Caroline County began to focus even more on money crops such as lumber, tobacco, sweet potatoes and cucumbers.<sup>11</sup> This increase in the county's sweet potato crop created a need for storage houses.<sup>12</sup> Some farmers built individual storage and curing barns on their property, as seen on the farm where I grew up, whereas others came together to form associations and share the responsibility of constructing and maintaining sweet potato curing barns.

In 1941, the United States Army established a 60,000 acre training facility in Caroline County that became known as Fort A.P. Hill.<sup>13</sup> While homes, farms, and small country towns were forever altered, the Army created an installation that has been instrumental in training military personnel for seventy years.<sup>14</sup> Once the land was sold, the sweet potato curing barns that had been located there were lost. Families that

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<sup>9</sup> Marshall Wingfield, *A History of Caroline County Virginia*, (Richmond, Virginia: Press of Trevvet Christian & Co., Inc., 1924), 26.

<sup>10</sup> Mac Saphir, "Farming in Caroline County, Va. – Past, Present and Future," *The Caroline Progress*, June 26, 2008.

<sup>11</sup> Caroline County Board of Supervisors, "Cultural & Historic Resources," In *Caroline County Comprehensive Plan 2030* (2010), 5.

<sup>12</sup> Caroline County Board of Supervisors, "Cultural & Historic Resources," 5.

<sup>13</sup> U.S. Army Installation Management Command (IMCOM), "Fort A.P. Hill History," <http://www.aphill.army.mil/sites/about/history.asp> (accessed May 3, 2011).

<sup>14</sup> U.S. Army Installation Management Command (IMCOM), "Fort A.P. Hill History," <http://www.aphill.army.mil/sites/about/history.asp> (accessed May 3, 2011).

relocated to other parts of the county found it necessary to build new sweet potato curing barns on their own farms or collaborate with other farmers to build community barns.



Figure 1.3: Fort A.P. Hill, 1941<sup>15</sup>

### Methodology

Research for this thesis has included archival and field research. Archival research included looking at various bulletins and circulations published by state universities as well as agricultural extension agencies and cooperatives. In addition, United States Census data, as well as statistics from the United States Department of Agriculture, was reviewed. Previous theses regarding sweet potato curing barns that were written by students at the University of Georgia also provided research material.

Field research was conducted in Caroline County, Virginia. Permission was gained from the various landowners to access sweet potato curing barns throughout the county, as well as photograph them. Although this is representative of only a small portion of the remaining sweet potato curing barns in the nation, conditions discovered

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<sup>15</sup> U.S. Army Installation Management Command (IMCOM), "Fort A.P. Hill History,"

<http://www.aphill.army.mil/sites/about/history.asp> (accessed May 3, 2011).

provided a picture of the challenges that are facing these structures while showing the evolution that they have experienced over the years.

## CHAPTER 2

### AGRICULTURAL OVERVIEW

In the South, raising cash crops was a common way of farming. Raising a crop that could provide a direct income was advantageous in the poorer regions of the United States. Cash crops are different from subsistence crops which are grown to provide food for the family or feed for the livestock.

Cash crops were often grown in the same plots or fields for many years. As they were grown repeatedly in the same area, bugs and other pests began to lower the amount harvested while nutrients from the ground were slowly being depleted. Once an insect or disease resistance gene in a plant has been overcome, the crop has to put all of its energy and resources into staying alive rather than producing leaves, blooms, or fruit for a harvest. Trying to derive nutrients from a depleted source can make a poor quality crop and a low yield. When farmers are no longer able to obtain the maximum crop yield, they are more willing to diversify into another cash crop. Lower yielding crops are ignored in favor of a cash crop that can be easily and efficiently grown.

Historical changes, from the amount of arable land under cultivation to new inventions and technological advances, have been a factor in the evolution of cash crops. As social changes have occurred, such as the culture and abolition of slavery, the Civil Rights movement, and World Wars I and II, agricultural practices have changed to meet new market demands. This trend of changing consumer and market demands can be seen even today.

## Tobacco

Even from the very beginning of Colonial America, tobacco has been a primary crop. At one time, it was so valuable that tobacco was considered a legal tender.<sup>16</sup> This was not favored by the British monarchy, and the subsequent controls that were placed on the colonial tobacco crop deterred many farmers from continuing to plant the majority of their fields in one single crop.<sup>17</sup>



Figure 2.1: Field of Tobacco<sup>18</sup>

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<sup>16</sup> Percy Scott Flippin, *The Royal Government in Virginia, 1624-1775* (New York: Columbia University, 1919), 281.

<sup>17</sup> Benjamin William Arnold, *History of the Tobacco Industry in Virginia from 1860 to 1894* (Baltimore: The Johns Hopkins Press, 1897), 54.

<sup>18</sup> George M. Odium, *The Culture of Tobacco* (Salisbury, Southern Rhodesia: British South Africa Company, 1905), 21.

As some farmers diversified into other cash crops, such as wheat and rice, most continued to supply Europe with tobacco. These individuals fueled a prosperous industry that spread throughout the colonies and has continued into the twenty-first century.

Today, remnants of these agricultural practices are visible in the tobacco barns that dot the rural landscape of the Mid-Atlantic and Southern states. Virginia, especially, used the method of flue-curing which involved hanging the tobacco in a closed barn. The barn was consistently heated, most often with a wood stove, which caused the tobacco leaves to change color as well as chemical content.<sup>19</sup>



Figure 2.2: Flue-cure tobacco barn<sup>20</sup>

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<sup>19</sup> George M. Odium, *The Culture of Tobacco* (Salisbury, Southern Rhodesia: British South Africa Company, 1905), 99.

<sup>20</sup> North Carolina Department of Cultural Resources Office of Archives and History, "Where the Barns Are," State Historic Preservation Office. <http://www.hpo.ncdcr.gov/ctb/where.htm> (accessed April 20, 2011).

Tobacco remained the main cash crop of the Southern and Mid-Atlantic states until the end of the eighteenth century. New technology and mechanization brought a competitor to the agricultural scene and changed the farming practices of many tobacco growers.

### Cotton

Cotton, as a result of the invention of the cotton gin in 1793, rose to the forefront as the main cash crop for the Southern states. It fueled an industry, created jobs, and was an economic indicator for farm production. However, the boll weevil drastically changed the cotton industry. As the destructive pest spread throughout the South, farmers found it more and more difficult to produce the crop that had once been their lifeline and mainstay.

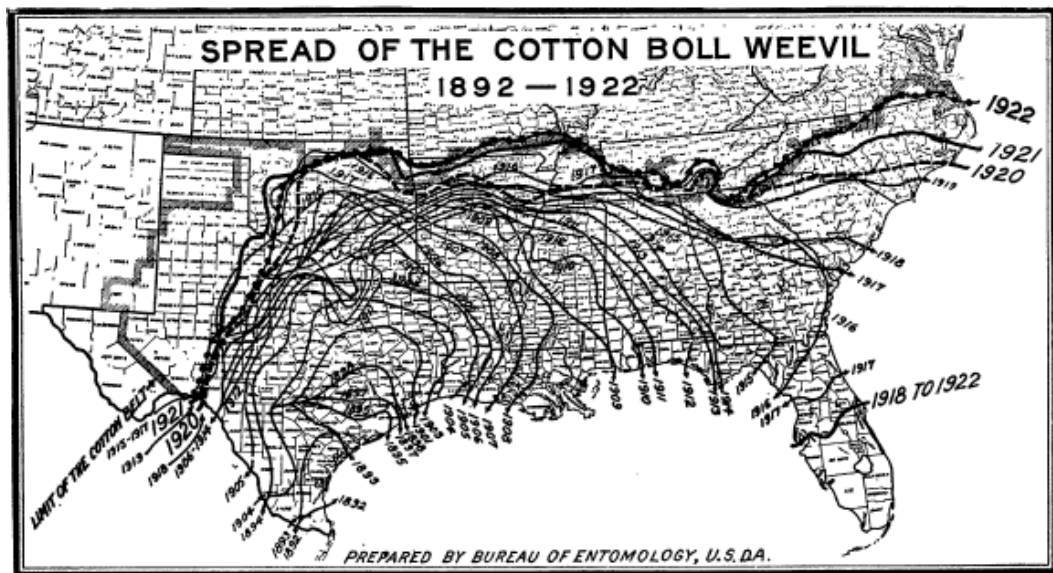


Figure 2.3: Spread of the Cotton Boll Weevil, 1892-1922<sup>21</sup>

<sup>21</sup> Oliver E. Baker, "Agricultural Regions of North America. Part II – The South," *Economic Geography* 3, no. 1 (January 1927): 68.

The spread of the boll weevil was so significant that only thirty years after first appearing in the United States it “had spread into practically every part of the Cotton Belt.”<sup>22</sup> After impacting crop quality and prices for several years, farmers began to recognize the need to branch into other cash crops.

The *Atlanta Constitution* covered a meeting of Georgia sweet potato growers in January of 1922 and reported that Mr. John Bostwick of Bostwick, Georgia,

after telling of the infeasibility of continuing to raise nothing but cotton, said that ‘we were told to diversify and we would not. Then God decided to teach us a lesson and sent millions of boll weevils to our fields and convinced us that we should raise something else. The sweet potato, scientifically produced, cured, graded, packed and sold in a co-operative way will prove the best money crop that Georgia has ever seen.’<sup>23</sup>

While humor can certainly be appreciated after the fact, the boll weevil almost desiccated the South, leaving a wide swath of defunct cotton farms behind. As farmers began looking at other viable cash crops, the sweet potato, or the “fleshy root”<sup>24</sup>, was what many turned to.

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<sup>22</sup> Oliver E. Baker, “Agricultural Regions of North America. Part II – The South,” *Economic Geography* 3, no. 1 (January 1927): 68.

<sup>23</sup> “Bostwick Leads Potato Growers,” *The Atlanta Constitution*, January 28, 1922.

<sup>24</sup> J.B. Edmond and G.R. Ammerman, *Sweet Potatoes: Production, Processing, Marketing* (Westport, Connecticut: The Avi Publishing Company, Inc., 1971), 18.



### Sweet potatoes

Throughout the world and especially in tropical climates, the sweet potato (*Ipomoea batatas* L.) has remained an important crop. Africa, India, Japan, China, the Malayan Archipelago, the Pacific Islands and the southern United States are major producers of the sweet potato.<sup>25</sup> As a member of the morning glory family, sweet potatoes are no relation to white, or Irish, potatoes or yams. Sweet potatoes are also handled differently, in storage and curing, from white potatoes.

Even in the colonies, sweet potatoes had a place in the agricultural system. Records indicate that the sweet potato was grown in Virginia as early as 1648 and was introduced to other North American colonies within the next several decades.<sup>26</sup> The crop was considered extremely important in Virginia and parts of the state were considered to be very well suited to the cultivation of sweet potatoes.<sup>27</sup> Even George Washington grew them on his farm, Mount Vernon.

In 1917, roughly 953,000 acres were planted in sweet potatoes in the United States. Over 87,000,000 bushels were produced from this area, totaling \$96,121,000 in

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<sup>25</sup> H.C. Thompson, *Sweet Potato Production and Handling* (New York: Orange Judd Publishing Company, Inc., 1929), 11.

<sup>26</sup> J.B. Edmond and G.R. Ammerman, *Sweet Potatoes: Production, Processing, Marketing* (Westport, Connecticut: The Avi Publishing Company, Inc., 1971), 3.

<sup>27</sup> James Fitz, *Sweet Potato Culture*, (New York: Orange Judd Company, 1910), 8.

crop value.<sup>28</sup> Sweet potatoes were rivaling cash crops in some areas, becoming one of the most important truck crop vegetables.

During World War I, sweet potatoes were used by the United States Department of Agriculture as a substitute to help alleviate the wheat flour shortage.<sup>29</sup> During World War II, dehydrated sweet potatoes were used to feed military personnel both at home and overseas.<sup>30</sup> Having found a niche in the growing demand created by both wars, sweet potatoes were of extreme importance during this period of agricultural history.

However, the Great Depression had the most impact on the cultivation of sweet potatoes in the South. Considered a “poor man’s crop,” the sweet potato experienced an increase in production from 1931 through 1937 although it had been a substantial industry before the Depression.<sup>31</sup>

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<sup>28</sup> Fred E. Miller, “Sweet-Potato Growing,” United States Department of Agriculture Farmer’s Bulletin 999 (Washington, D.C.: Government Printing Office, 1919), 3.

<sup>29</sup> P.R. Dawson, “Sweetpotatoes for Food and Feed,” In *1950-1951 Yearbook of Agriculture*, edited by Alfred Stefferud (Washington, D.C.: Government Printing Office, 1951), 206.

<sup>30</sup> Dawson, “Sweetpotatoes for Food and Feed,” 205.

<sup>31</sup> P.D. Dukes, Alfred Jones, and W.J. McLaurin, “The First Fifty Years – Retrospective of Cooperative Sweetpotato Research: Before the Collaborators,” *Fifty Years of Cooperative Sweetpotato Research*, Southern Cooperative Series Bulletin No. 369, (1992) ed. A. Jones and J.C. Bouwkamp, 1.

At one time, Southern planters felt that the sweet potato might become their most important crop.<sup>32</sup> Southerners found that sweet potatoes were not only a tasty meal but also a nutritious feed for livestock. The nutritive value of sweet potatoes is about one-third that of an equal weight of shelled corn.<sup>33</sup>

Sweet potatoes were often rotated with cotton, corn, or clover to prevent soil depletion.<sup>34</sup> With this form of rotation farming, sweet potatoes are typically not grown on the same plot for very long before the soil is given a chance to rest and replenish its nutrients. Once planted, sweet potatoes require very little maintenance.

There were no racial divides in the growing of sweet potatoes. In the South, blacks and whites alike had sweet potato patches or fields.<sup>35</sup> Sweet potatoes also transcended class and socio-economic barriers. The crop was used in many different ways varying from feeding livestock to making products such as bread flour and beer.<sup>36</sup>

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<sup>32</sup> Clinton Grow, *Sweet Potato Culture for the Southern Planter* (Seville, Ga.: Crow & Brogdon, 1915), 10.

<sup>33</sup> P.R. Dawson, "Sweetpotatoes for Food and Feed," In *1950-1951 Yearbook of Agriculture*, edited by Alfred Stefferud (Washington, D.C.: Government Printing Office, 1951), 208.

<sup>34</sup> Clemson Agricultural College, South Carolina Agricultural Experiment Station, "Production Practices in Growing Sweetpotatoes In the Coastal Plain Area of South Carolina," by Dudley L. Peery, Bulletin 407 (Clemson, South Carolina, 1953), 9.

<sup>35</sup> Oliver E. Baker, "Agricultural Regions of North America. Part II – The South," *Economic Geography* 3, no. 1 (January 1927): 82.

<sup>36</sup> J.B. Edmond and G.R. Ammerman, *Sweet Potatoes: Production, Processing, Marketing* (Westport, Connecticut: The Avi Publishing Company, Inc., 1971), 4.

Table 2.1: Values for Principal Producing States, 1965-1969<sup>37</sup>

State	Average yield per acre	Acreage harvested	Production
	<i>Cwt.</i>	<i>1,000 acres</i>	<i>1,000 cwt.</i>
Maryland -----	137	3.7	429
Virginia -----	120	13.6	1,617
North Carolina ----	112	20.8	2,448
California -----	98	8.3	814
Tennessee -----	98	3.5	341
New Jersey -----	97	6.2	599
New Mexico -----	93	0.6	49
Kansas -----	89	1.1	95
Mississippi -----	85	12.5	1,037
Georgia -----	84	8.5	714
Louisiana -----	82	51.8	4,253
Alabama -----	81	5.7	464
Arkansas -----	78	2.0	153
South Carolina ----	75	3.2	237
Texas -----	71	12.0	856
Oklahoma -----	66	0.8	54

Many of the Southern states have felt the impacts of sweet potatoes cultivation.

Figure 2.4 illustrates the difference between states that produced sweet potatoes commercially as shaded in gray and those that only had small garden plots. The black line notes the northern-most point where sweet potatoes can be grown for home production.

Alabama considers sweet potatoes to be one of the most important vegetable crops produced in the state.<sup>38</sup> In 1918, Alabama was the highest producer of sweet potatoes in the United States.<sup>39</sup> In more recent years, North Carolina sweet potato production has reached such a level that they have elected to make the sweet potato the state's official vegetable.

<sup>37</sup> "Sweetpotato Culture and Diseases," U.S. Department of Agriculture Agriculture Handbook No. 388 (Washington, D.C.: Government Printing Office, 1971), 13.

<sup>38</sup> Alabama Cooperative Extension Service, "Guide to Commercial Sweetpotato Production," J.M. Kemble, E.J. Sikora, D. Fields, M.G. Patterson, E. Vinson III, ANR-982 (2006), 1.

<sup>39</sup> T.E. Hand and K.L. Cockerham, *The Sweet Potato: A Handbook for the Practical Grower* (New York: The MacMillan Company, 1921), 11.

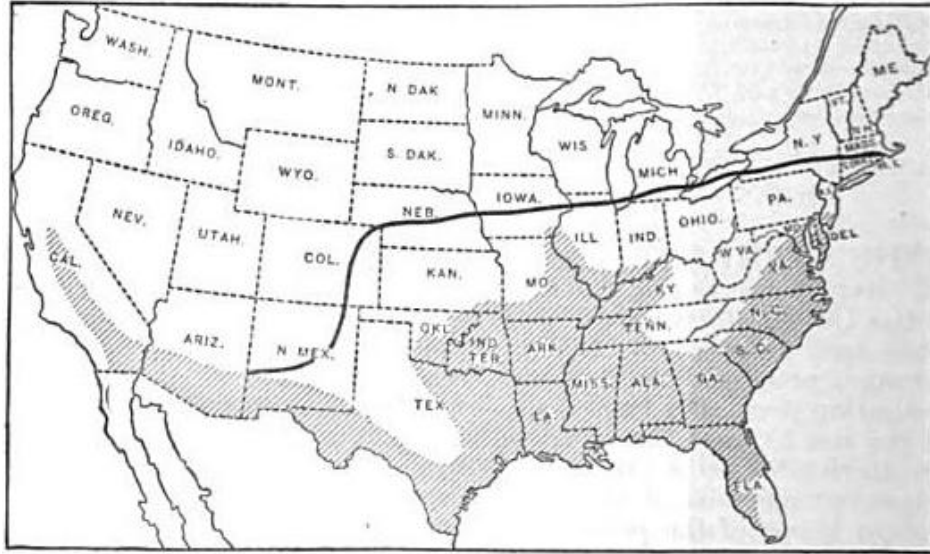


Figure 2.4: Map of Sweet Potato Growing States<sup>40</sup>

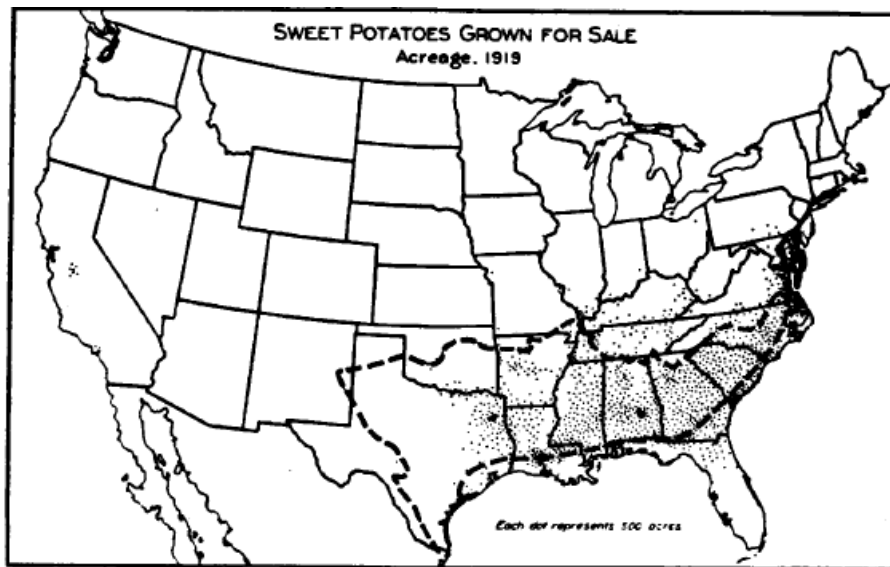


Figure 2.5: Sweet Potatoes Grown for Sale: Acreage - 1919<sup>41</sup>

<sup>40</sup> Fred E. Miller, "Sweet-Potato Growing," United States Department of Agriculture Farmer's Bulletin 999 (Washington, D.C.: Government Printing Office, 1919), 4.

<sup>41</sup> Oliver E. Baker, "Agricultural Regions of North America. Part II – The South," *Economic Geography* 3, no. 1 (January 1927): 82.

In 1955, a thesis written by a University of Georgia student, entitled “An Economic Study of Sweet Potato Storage in Georgia,” noted that “the sweet potato is Georgia’s most important horticultural crop. Year after year it has yielded a high cash income to growers. The per acre income is exceeded only by tobacco.”<sup>42</sup>

Sweet potatoes are a fragile vegetable. Their thin skins can be easily cut or otherwise damaged when being handled. When harvesting the crop, farmers must take a considerable amount of care to ensure that the sweet potatoes are not overly bruised before they are sold.<sup>43</sup> Once harvested, sweet potatoes can either be sold immediately or cured. Curing involves keeping the sweet potatoes at a temperature between 85° and 90° Fahrenheit with a relative humidity between 85 and 90% for approximately ten days.<sup>44</sup> The curing process, if done properly, can “aid in assuring good market quality, as exemplified by good appearance, desirable culinary quality, and freedom from defects.”<sup>45</sup>

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<sup>42</sup> William Clifton Carter, “An Economic Study of Sweet Potato Storage in Georgia” (master’s thesis, University of Georgia, 1955), 1.

<sup>43</sup> E.T. Swink, “Curing and Storing Sweet Potatoes with Electric Heat,” in *C.R.E.A. News Letter*, ed. J.P. Schaezner (Chicago, June 1938), 42.

<sup>44</sup> J.B. Edmond and G.R. Ammerman, *Sweet Potatoes: Production, Processing, Marketing* (Westport, Connecticut: The Avi Publishing Company, Inc., 1971), 223.

<sup>45</sup> L.J. Kushman, United States Department of Agriculture, “Sweetpotato Storage,” *Agriculture Handbook* No. 358 (Washington, D.C.: Government Printing Office, 1969), 1.

Essentially, curing enhances the culinary characteristics of the sweet potato, helps heal the wounds that are incurred during harvesting, and sets the skin to prevent further damage.<sup>46</sup>

Utilizing curing and storage barns has proven to be a safeguard for growers and farmers when it comes to preserving their crop. Curing can occur in large commercial storage houses or smaller curing barns located on the farm. In either instance, it is important that the curing and storage barn be well-designed and well-managed to facilitate this purpose.

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<sup>46</sup> North Carolina Cooperative Extension Service, “The Postharvest Handling of Sweetpotatoes: With Construction Guidelines for Negative Horizontal Ventilation Curing and Storage Facilities,” Michael D. Boyette, Edmond A. Estes, A. Robert Rubin, and Kenneth A. Sorenson (1996), 6.

## CHAPTER 3

### HISTORIC SWEET POTATO CURING BARNES

Agricultural buildings are one of the most neglected parts of our nation's past. At one time there were over 6.8 million farms in the United States; today, that number has dwindled to 2.1 million.<sup>47</sup> Despite the glaring reminders that the rural landscape is quickly and drastically changing, obsolete agricultural buildings tend to be overlooked or dismissed in favor of other preservation efforts.

Of the many barns that have fallen into disuse and a state of decay, sweet potato curing barns remain one of the most unknown and unrecognized. These barns were built throughout the humid regions of the coastal states to facilitate the curing of sweet potatoes. Sweet potatoes, when first harvested, are considered a green crop. Some are directly put on the market, while others are taken to a curing barn. Sweet potatoes are fragile vegetables and are often damaged when they are dug from the ground. Curing allows the wounds to heal, providing a longer storage life by reducing the possibility of rot setting in. Curing also changes the chemical composition of sweet potatoes. During the process, the starch inside the sweet potato is changed to sugars, producing a much sweeter and tastier vegetable.

This chapter will evaluate the components that constitute a historic sweet potato curing barn. For the purpose of this thesis, the National Register of Historic Place's

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<sup>47</sup> U.S. Environmental Protection Agency, "Demographics," U.S. Environmental Protection Agency,

<http://www.epa.gov/agriculture/ag101/demographics.html> (accessed April 27, 2011).



definition of historic will be used. For a building or structure to qualify as historic under the National Register's Criteria for Evaluation it must be at least 50 years old and retain its physical integrity.

Sweet potato curing barns in the Mid-Atlantic and Southern states are structures that have been adapted over the years to meet the new and changing demands and technology that affect the sweet potato industry. According to the Virginia Truck Experiment Station, "a successful sweet potato storage house must possess the following essentials: (1) good control of ventilation, (2) uniform distribution of heat, (3) protection against excessive variation of temperature and (4) adequate moisture control."<sup>48</sup> Other individuals also felt that the most important aspects of a sweet potato curing barn included:

the use of insulation (in roof or ceiling as well as in the side walls); ventilation adequate to control temperature or condensation whenever necessary; a heating system to provide for a 10 to 15 day cure at about 85° F. and a relative humidity of 85 per cent; and a subsequent storage temperature average of 55° F., never dropping below 50° F. Humidity should be at least not much more than 75 per cent.<sup>49</sup>

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<sup>48</sup> Fred W. Geise, "Storing and Bedding Sweet Potato Stock," Bulletin 39 & 40 (Norfolk, Virginia: Virginia Truck Experiment Station, 1922), 223.

<sup>49</sup> Loren W. Neubauer and Harry B. Walker, *Farm Building Design* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961), 259.

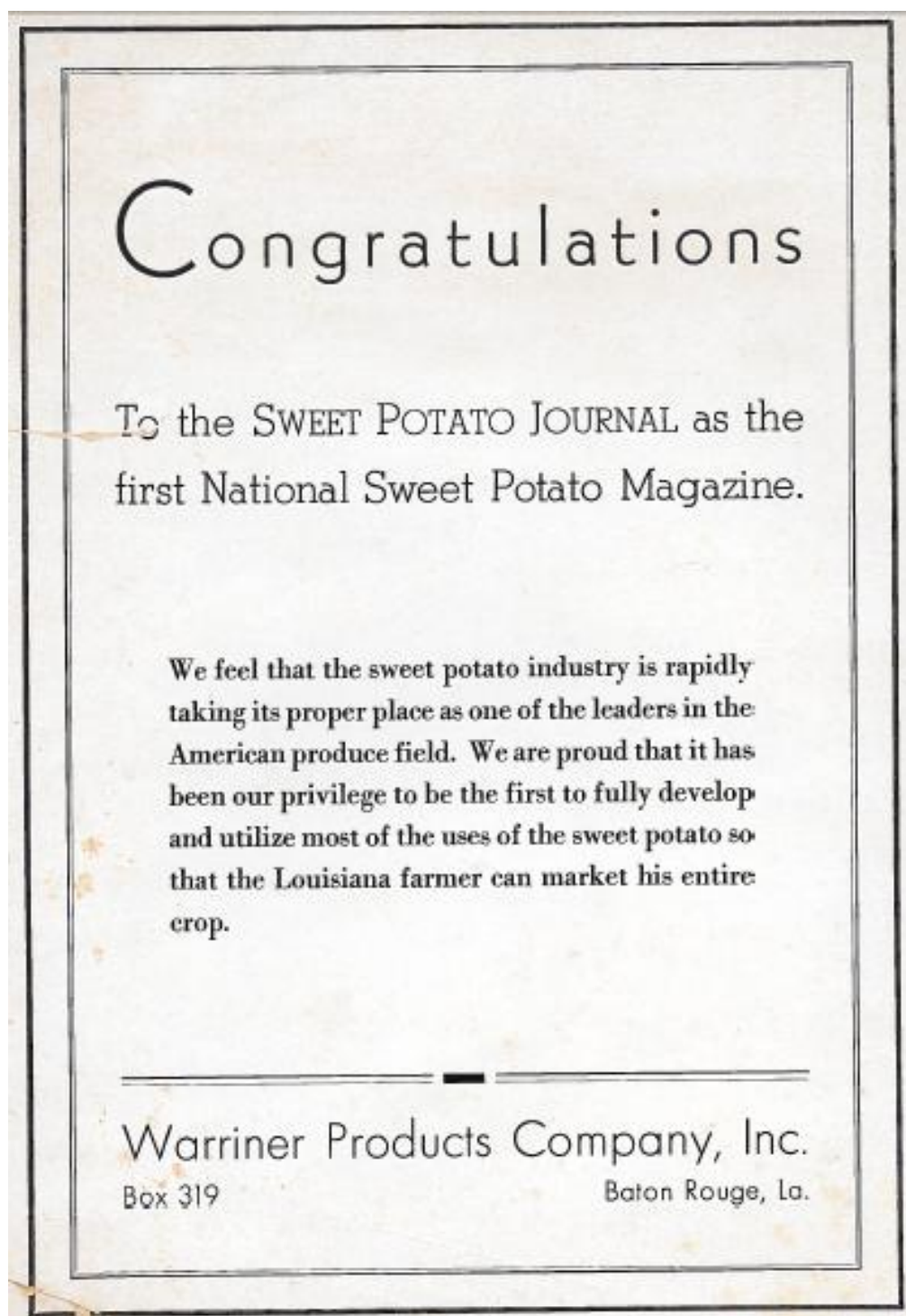


Figure 3.1: Sweet Potato Journal, October 1946<sup>50</sup>

<sup>50</sup> *Sweet Potato Journal* 1, no. 1 (October 1946): 1.

The proper construction and maintenance of a sweet potato curing barn is essential if the structure is to serve its purpose. Many localities recognized the importance of educating farmers on the proper procedures that should be followed. County extension offices and state universities published bulletins and circulars that addressed the problem of correct construction. The University of Georgia circulated a publication, entitled “Georgia Sweet Potato Improvement Program,” which contained a section instructing individuals about proper sweet potato curing and storage. The United States Department of Agriculture also issued several publications that were designed to enlighten farmers on the best practices concerning sweet potato storage and curing.

Table 3.1: Sweet Potato Curing Barns Surveyed in Caroline County, Virginia

<b>Location of sweet potato curing barn</b>	<b>Date of Construction</b>	<b>Material</b>	<b>Roof shape</b>	<b>Roof material</b>	<b>Adaptive re-use</b>	<b>Notes</b>
Spicer Sweet Potato Barn, Newtown Rd.	1930s	Wood	Gable	Standing seam metal	Guest house	Figure 3.4 Figure 5.8
Lakin Sweet Potato Barn, Seals Rd.	1930s	Wood	Gable	Standing seam metal	Vacation home	Figure 5.9
Collins Sweet Potato Barn, Pendleton Rd.	1930s	Concrete block	Gable	Standing seam metal	No	Figure 1.1 Figure 3.13
Mead Sweet Potato Barn, Sparta Rd.	1930s	Concrete block	Gable	Standing seam metal	Garage	Figure 3.15 Figure 5.7
Community Sweet Potato Barn, Rt. 301	1930s	Concrete block	Gable	Standing seam metal	No	Figure 5.6

### Construction

Sweet potato curing barns were constructed throughout the South around the time of the Great Depression and World War II. William Clifton Carter, author of “An Economic Study of Sweet Potato Storage in Georgia”, found that many of the houses in

Georgia had been built between 1922 and 1952.<sup>51</sup> In Caroline County, Virginia, most of the individual farm structures were built around the 1930s during the peak of the sweet potato industry in this area. The government's acquisition of the land that would become Fort A.P. Hill displaced many families in the early 1940s. Families that chose to remain in Caroline County and farm, built barns that could be used either by the community or for individual farms; therefore many of the structures in the county can be traced back to this period.

Most barns use standard wall construction, either single wall construction or double wall construction when additional insulation was needed, when storing sweet potatoes in boxes or baskets.<sup>52</sup> When storing in bulk, pressure and loads were to be taken into consideration.



Figure 3.2: Sweet Potatoes in a Paper-lined Wooden Crate<sup>53</sup>

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<sup>51</sup> William Clifton Carter, "An Economic Study of Sweet Potato Storage in Georgia" (master's thesis, University of Georgia, 1955), 31.

<sup>52</sup> Loren W. Neubauer and Harry B. Walker, *Farm Building Design* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961), 259.

<sup>53</sup> *Sweet Potato Journal* 6, no. 1 (April 1948): 1.

Foundations also vary in sweet potato curing house construction. For materials that have known moisture problems such as concrete blocks, these barns were sometimes constructed on foundations that allowed for air circulation to control the humidity. Foundations may be either piers or a solid wall. A solid foundation was considered necessary in order to carry the weight of the crop being stored inside. Constructing a sweet potato curing barn on a foundation would also raise the floor level to the height of a wagon or truck, making it more accessible and convenient.<sup>54</sup>

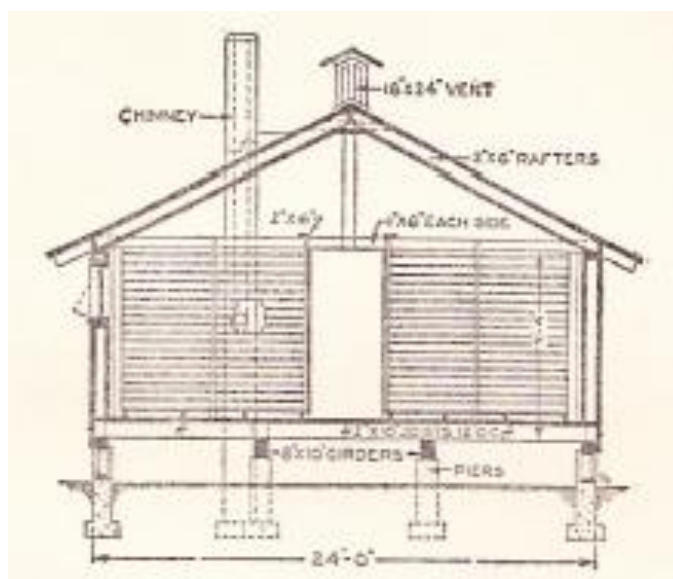


Figure 3.3: Cross Section of a Sweet Potato Curing Barn<sup>55</sup>

### *Materials*

In most locations, sweet potato curing barns follow the same general design principles. One aspect that varies, though, is the choice of materials with which to

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<sup>54</sup> H.C. Thompson, *Sweet Potato Production and Handling* (New York: Orange Judd Publishing Company, Inc., 1929), 94.

<sup>55</sup> Thompson, *Sweet Potato Production and Handling*, 95.

construct the barn. Factors such as cost, availability, and the amount of labor required played a role in the selection of materials for the barn. Sweet potato curing barns are typically wood frame, although other materials were utilized as well. These structures have been constructed with a full range of materials, from concrete blocks, brick, stone, or logs, to adobe. Each material was chosen over another for various reasons. In some cases the most appropriate material was selected for that particular locale based on certain qualities such as moisture control or stability. Other farmers could not afford the luxury of choice and instead constructed barns with the cheapest available material.



Figure 3.4: Wood Frame Sweet Potato Curing Barn – Caroline County, Virginia

Sweet potato curing barns were commonly made of wood due to the high availability and low cost of this material.<sup>56</sup> In most sweet potato growing regions, wood

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<sup>56</sup> H.C. Thompson, *Sweet Potato Production and Handling* (New York: Orange Judd Publishing Company, Inc., 1929), 93.

was also easier to keep dry, eliminating the need for excessive ventilation or circulation. As most agricultural buildings in the South and Mid-Atlantic were constructed of wood, using this material would provide continuity with the other farm buildings. A wood frame structure was also easier to insulate. Tongue and groove wall construction could provide a tight, solid structure that would supply a certain amount of temperature control for a sweet potato curing barn.



Figure 3.5: Concrete Block Sweet Potato Curing Barn - Princess Anne County, Virginia<sup>57</sup>

Concrete block barns became more common due to the ease they afforded during construction. Three of the barns surveyed in Caroline County, Virginia were constructed with concrete blocks. Two were individual farm barns while the third was a community barn. However, concrete blocks have disadvantages. They have been known to collect

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<sup>57</sup> E.T. Swink, "Curing and Storing Sweet Potatoes with Electric Heat," In *C.R.E.A. News Letter*, ed. J.P. Schaezner (Chicago, June 1938), 41.

moisture on the walls, which created an issue when the sweet potatoes were being cured. Although lining the walls with lumber was a suggested practice to alleviate this issue<sup>58</sup>, I have not encountered a concrete block sweet potato curing barn that illustrated this idea. In other areas, stucco was coated on the exterior of the cinderblock walls to prevent moisture from entering the porous blocks.<sup>59</sup> Cinderblock constructed curing barns typically have walls roughly twelve inches thick which provides additional insulation to the structure.<sup>60</sup>



Figure 3.6: Brick Sweet Potato Curing Barn - Wicomico County, Maryland<sup>61</sup>

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<sup>58</sup> H.C. Thompson, *Sweet Potato Production and Handling* (New York: Orange Judd Publishing Company, Inc., 1929), 93.

<sup>59</sup> M.A.R. Kelley, "Truck Crop Investigations: Design and Operation of Commercial Sweet Potato Storage Houses" (Norfolk, Virginia: Virginia Truck Experiment Station, 1929), 725.

<sup>60</sup> E.T. Swink, "Curing and Storing Sweet Potatoes with Electric Heat," In *C.R.E.A. News Letter*, ed. J.P. Schaenzer (Chicago, June 1938), 41.

<sup>61</sup> "Maple Leaf Farm Potato House," National Register Listings in Maryland.

<http://mht.maryland.gov/nr/NRDetail.aspx?HDID=1198&FROM=NRMapWC.html> (accessed March 24, 2011).



Stone and brick have structural strength that can be advantageous but lack insulating qualities. As with any masonry construction for sweet potato curing barns, it was essential that the mortar be correctly applied so that air would not be allowed to seep out or enter, creating an issue when trying to maintain a uniform temperature and humidity during the curing process.<sup>62</sup>

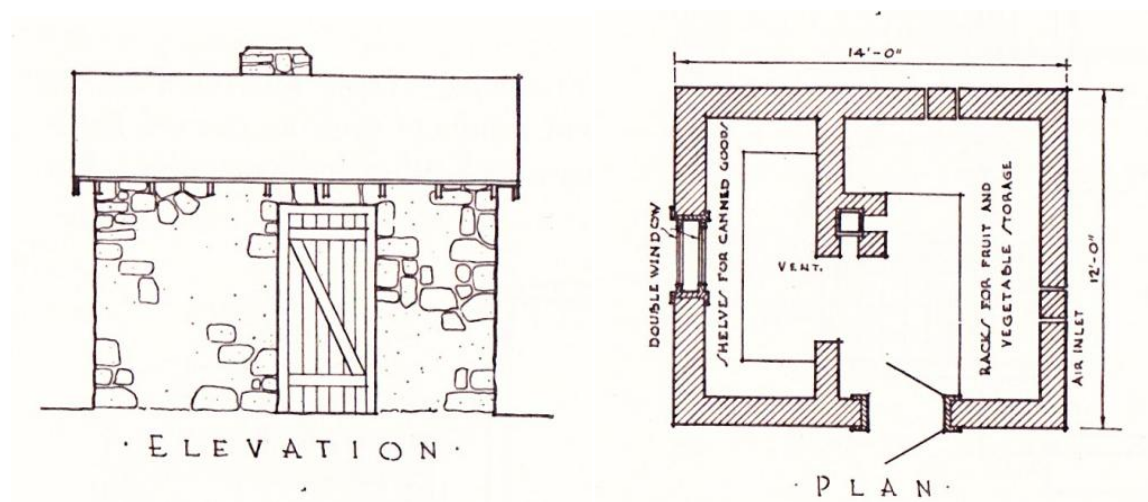


Figure 3.7: Masonry Sweet Potato Curing Barn<sup>63</sup>

Brick and stone were more expensive materials and were not typically used throughout the South. Of the surviving sweet potato curing barns in Caroline County, Virginia, none are of this type of masonry construction. Perhaps, socio-economic standing was a factor in this rather rare choice of materials. The availability, or lack thereof, of brick and stone would have influenced farmers when constructing their sweet potato curing barn.

<sup>62</sup> M.A.R. Kelley, "Truck Crop Investigations: Design and Operation of Commercial Sweet Potato Storage Houses" (Norfolk, Virginia: Virginia Truck Experiment Station, 1929), 731.

<sup>63</sup> Deane G. Carter and W.A. Foster, *Farm Buildings* (New York: John Wiley & Sons, Inc., 1941), 290.

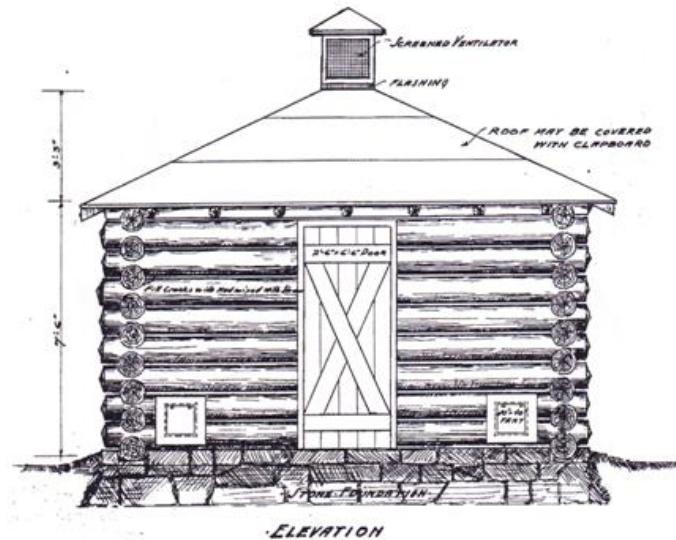


Figure 3.8: Log Sweet Potato Curing Barn<sup>64</sup>

Log sweet potato curing barns were not common either, perhaps due to size limitations. When constructing a barn of logs, the length or height of the space is restricted by the size of the logs being used. However, some sweet potato curing barns were built using this material. According to a Farmers' Bulletin published by the U.S. Department of Agriculture, log sweet potato curing barns were more common-place in the South where they were daubed with clay to provide a solid structure.<sup>65</sup> Plans for log sweet potato curing barns were found at the University of Arkansas' Extension Service validating this claim.

<sup>64</sup> University of Arkansas College Extension Service, "Sweet Potato Storage House (Little Rock, Arkansas: University of Arkansas, 1934).

<sup>65</sup> J.F. Duggar, "Sweet Potatoes: Culture and Uses," U.S. Department of Agriculture Farmers' Bulletin No. 26 (Washington, D.C.: Government Printing Office, 1897), 19.

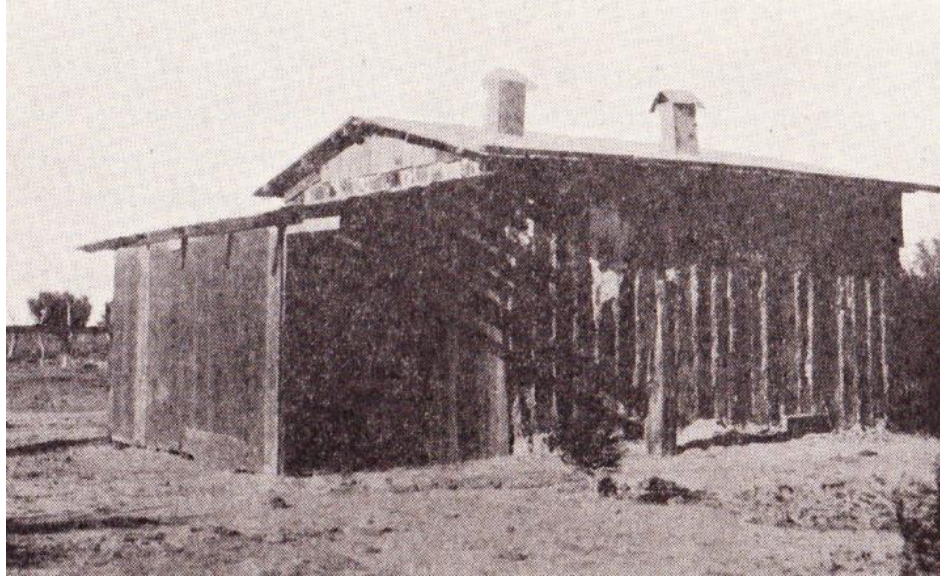


Figure 3.9: Sweet Potato Curing Barn Constructed of Railroad Ties<sup>66</sup>

The state of Arizona built their first sweet potato curing house in 1918 using adobe brick.<sup>67</sup> For this part of the nation, adobe certainly had its advantages. It was a relatively cheap and plentiful material that allowed for simple construction. The biggest advantage for adobe, however, was the high insulating qualities.<sup>68</sup>

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<sup>66</sup> University of Arizona, College of Agriculture, “The Adobe Sweet Potato Storage House in Arizona,” by

F.J. Crider and D.W. Albert, Bulletin No. 106 (Tucson, Arizona, 1925), 404.

<sup>67</sup> University of Arizona, “The Adobe Sweet Potato Storage House in Arizona,” 393.

<sup>68</sup> University of Arizona, “The Adobe Sweet Potato Storage House in Arizona,” 393.



Figure 3.10: Adobe Commercial Sweet Potato Curing Barn - Arizona<sup>69</sup>

Adobe walls were often plastered, creating a seal that will protect the walls from absorbing moisture.<sup>70</sup> Plastering inside the walls was very advantageous, whereas plastering the exterior walls was simply aesthetic more than anything else.

Although wood appears to have been the main choice of building material for historic sweet potato barns throughout the South, there has been no evidence to substantiate claims that one type of material is superior to the other in terms of curing the sweet potatoes.<sup>71</sup> In many instances, farmers simply copied the materials and design that a nearby farmer had employed.

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<sup>69</sup> University of Arizona, College of Agriculture, "The Adobe Sweet Potato Storage House in Arizona," by F.J. Crider and D.W. Albert, Bulletin No. 106 (Tucson, Arizona, 1925).

<sup>70</sup> University of Arizona, "The Adobe Sweet Potato Storage House in Arizona," 398.

<sup>71</sup> William Clifton Carter, "An Economic Study of Sweet Potato Storage in Georgia" (master's thesis, University of Georgia, 1955), 30.

## Roof

A typical sweet potato curing barn was constructed with a gabled roof, which allowed for ventilation to occur either through the ridge or by circulating air in the attic space. Roof materials varied from standing seam metal roofs to shingles. All of the sweet potato curing barns surveyed in Caroline County, Virginia had a standing seam metal roof.

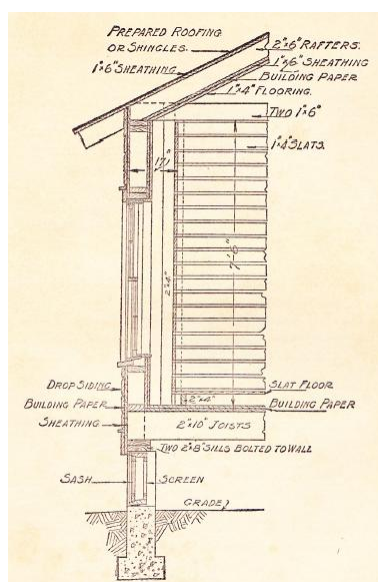


Figure 3.11: Detail of Foundation, Floor, Wall, and Roof<sup>72</sup>

## Floor

Floors varied from concrete or wood to packed dirt. Although dirt floors appear to be more common, photographic documentation and other publications seem to support the idea that wooden floors were the popular choice. A slatted floor placed four to six

<sup>72</sup> H.C. Thompson, *Sweet Potato Production and Handling* (New York: Orange Judd Publishing Company, Inc., 1929), 97.

inches above the ground level can help improve ventilation by allowing air to circulate through the space.<sup>73</sup> Above ground floors can also increase the convenience and accessibility of loading and unloading sweet potatoes. A “truck bed height” floor was advantageous when bringing in the crop from the field. Depending on the preference of the farmer, sweet potatoes were graded, or separated according to size and quality, and packed in the field before being brought in to the curing barn. Picking the crates or baskets up off a raised surface would have been much more convenient than constantly bending.

### Converted

Sweet potatoes do not need a specifically designed and constructed barn to be cured and stored in. They will keep just as well in a converted structure. Most importantly, the building chosen to cure the sweet potatoes must meet certain requirements or be adapted to facilitate this use. Using a converted building also serves the purpose of preservation by giving an obsolete structure new life and purpose.

### *Tobacco barns*

Tobacco barns have been utilized for sweet potato curing because of the similarity in purpose. Tobacco is often cured before the sweet potatoes are dug so there is no conflict with space.<sup>74</sup> In Virginia and North Carolina where tobacco is flue-cured, the

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<sup>73</sup> Loren W. Neubauer and Harry B. Walker, *Farm Building Design* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961), 259.

<sup>74</sup> H.C. Thompson, *Sweet Potato Production and Handling* (New York: Orange Judd Publishing Company, Inc., 1929), 99.

guiding principles of the tobacco barns are very close to those necessary to cure sweet potatoes.

A flue-cure tobacco barn requires space to hang the tobacco leaves where air can circulate around them. A source of heat, often a wood stove, would be placed inside the barn and monitored throughout the curing process. Like sweet potatoes, tobacco requires consistent, high temperatures of heat to cure. With proper insulation, ventilation, and a heat source already existing in a tobacco barn, these agricultural structures proved to be very adaptable to the sweet potatoes curing needs.

#### *Farm houses or tenant houses*

Abandoned houses often meet the requirements of a sweet potato curing barn. In some cases, small changes or alterations were made but the ventilation, insulation, and heating requirements of a house are relatively similar to those of a sweet potato curing barn.<sup>75</sup> Additional ventilation and insulation was sometimes required but could easily be facilitated with minimal time and effort.

Throughout the South, many vacant tenant or sharecropper's houses were convenient for sweet potato curing purposes. Tenant houses were often built close to the fields which provided an added benefit when transporting fragile, freshly dug sweet potatoes. These houses would often have a stove inside already; all that was needed was fuel.

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<sup>75</sup> Fred W. Geise, "Storing and Bedding Sweet Potato Stock," Bulletin 39 & 40 (Norfolk, Virginia: Virginia Truck Experiment Station, 1922), 223.

### Storage pits

Today most sweet potato curing barns are constructed above ground, but in some parts of the United States, farmers have traditionally used storage pits.<sup>76</sup> Without the resources necessary to construct a curing barn, storage pits provided sweet potato farmers with a method of storing their crop. Although often used in the Southern states, these storage pits have been found to not be suited to the South. In humid conditions, it was hard to keep such a place dry which resulted in the loss of the crop being stored there.<sup>77</sup> In order to prevent rot, storage pits were located in areas that were well drained.<sup>78</sup> Pine needles or dirt provided a protective covering to prevent moisture from reaching the sweet potatoes.

A study conducted by H.C. Thompson and J.H. Beattie and published by the United States Department of Agriculture stated that the use of sweet potato storage pits resulted in a minimum of 30% loss due to decay. In some instances, the entire crop was destroyed.<sup>79</sup> Even if the crop was not ruined by this storage method, the sweet potatoes were often so damaged that they began to decay soon after being shipped to market. Very

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<sup>76</sup> E.T. Swink, "Curing and Storing Sweet Potatoes with Electric Heat," in *C.R.E.A. News Letter*, ed. J.P. Schaenzer (Chicago, June 1938), 41.

<sup>77</sup> H.C. Thompson, *Sweet Potato Production and Handling* (New York: Orange Judd Publishing Company, Inc., 1929), 104.

<sup>78</sup> Loren W. Neubauer and Harry B. Walker, *Farm Building Design* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961), 259.

<sup>79</sup> M.A.R. Kelley, "Truck Crop Investigations: Design and Operation of Commercial Sweet Potato Storage Houses" (Norfolk, Virginia: Virginia Truck Experiment Station, 1929), 737.



few farmers utilize the method of storage pits today since the construction of a barn can provide much more satisfactory results in curing sweet potatoes.



Figure 3.12: Sweet Potato Storage Pit or Kiln, 1920<sup>80</sup>

### Function

The main purpose of a sweet potato curing barn was not aesthetic or ceremonial but utilitarian; therefore, function played a major role in the way a curing barn was constructed and utilized. Certain requirements had to be fulfilled in a sweet potato curing barn in order to allow for proper curing and storage of the crop.

### *Curing*

“In order that sweet potatoes can be marketed over a long period of time it is necessary that they be properly cured and stored. By maintaining a temperature of about 85 degrees with proper ventilation when first placed in storage, it is possible to remove

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<sup>80</sup> Fred W. Geise, “Storing and Bedding Sweet Potato Stock,” Bulletin 39 & 40 (Norfolk, Virginia: Virginia Truck Experiment Station, 1922), 224.

from 10 to 15 per cent of the water from the sweet potatoes.”<sup>81</sup> Curing transforms the sweet potatoes, creating a vegetable that is healthier and sweeter than when it was dug fresh from the field. Curing typically lasts from one to two weeks but varies depending upon external temperatures and the variety of sweet potatoes being cured.<sup>82</sup>

The curing process also allows the wounds inflicted during harvest to heal. Sweet potatoes have a very fragile skin and are often bruised or cut when dug from the ground. Immediately curing the roots at a high temperature allows a scab to form over the wound, effectively preventing disease-producing organisms from entering through the wounds and causing rot or decay.<sup>83</sup>

### *Ventilation*

Ventilation was another necessary part of the sweet potato curing barn. The purpose of ventilation was to introduce more air into the space to absorb the moisture that was being put off by the sweet potato crop.<sup>84</sup> Ventilation was often provided through windows and doors, as well as ventilators located in the floor and roof. Ventilation was sometimes added through the roof ridge and along the walls. Most forms of ventilation,

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<sup>81</sup> E.T. Swink, “Electricity for Heating Sweet Potato Curing and Storage House,” In *C.R.E.A. News Letter*, ed. J.P. Schaefer (Chicago, August 1, 1936), 29.

<sup>82</sup> J.B. Edmond and G.R. Ammerman, *Sweet Potatoes: Production, Processing, Marketing* (Westport, Connecticut: The Avi Publishing Company, Inc., 1971), 224.

<sup>83</sup> “Sweetpotato Culture and Diseases,” U.S. Department of Agriculture Agriculture Handbook No. 388 (Washington, D.C.: Government Printing Office, 1971), 42.

<sup>84</sup> M.A.R. Kelley, “Truck Crop Investigations: Design and Operation of Commercial Sweet Potato Storage Houses” (Norfolk, Virginia: Virginia Truck Experiment Station, 1929), 742.

however, were designed to avoid placing a direct draft on the sweet potatoes which could drastically affect the temperature.



Figure 3.13: Window Ventilation

Roof ventilators often extended through the ceiling to allow for maximum air circulation but sometimes also had a trap door similar to a damper that could be easily and quickly opened and closed by a pulley and rope.<sup>85</sup> Most ventilation in the top of the sweet potato curing barn would be left open to allow the warmer, heavier air to carry out the moisture that was being released from the sweet potatoes. The bottom vents were opened and closed as needed to aid in temperature regulation. Notice the exterior shutter in Figure 3.13 that would allow for control over the amount of air or sunlight that was let in through this window.

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<sup>85</sup> H.C. Thompson, *Sweet Potato Production and Handling* (New York: Orange Judd Publishing Company, Inc., 1929), 95.

Ventilation was also necessary to remove carbon dioxide from the curing barn and replace it with oxygen. “Roots consume a significant amount of oxygen during curing while producing an equivalent amount of carbon dioxide.”<sup>86</sup> Sweet potatoes are a living root even after they are dug and placed in the curing barn. Air inside the barn allowed them to breathe, while the high temperature placed them in a dormant state, similar to a coma.

As previously mentioned, slatted floors were also designed to aid in ventilation and air circulation. The air space below the slatted floors was warmed and then circulated around the sweet potatoes. However, when ventilating a sweet potato curing barn, it was most important to remember to place screens over openings to keep mice and rats from entering the barn.

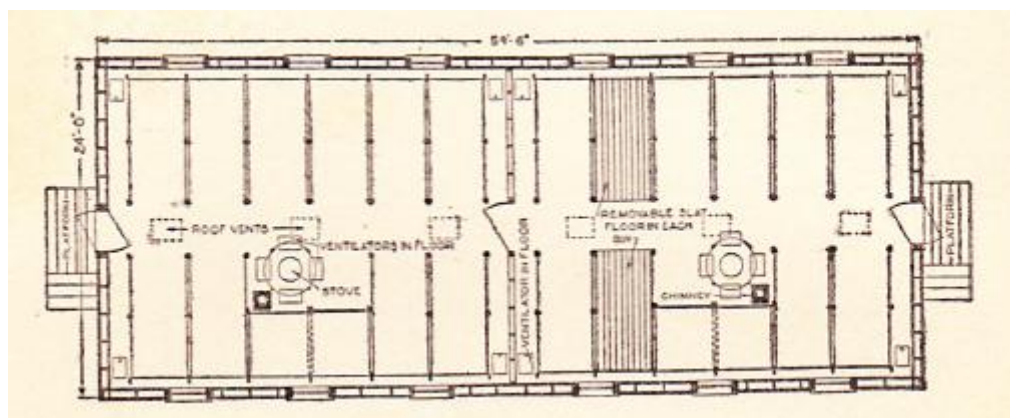


Figure 3.14: Sweet Potato Curing Barn Floor Plan<sup>87</sup>

<sup>86</sup> Alabama Cooperative Extension System, “Guide to Commercial Sweetpotato Production in Alabama,” J.M. Kemble, E.J. Sikora, D. Fields, M.G. Patterson, E. Vinson III, ANR-982 (2006), 9.

<sup>87</sup> H.C. Thompson, *Sweet Potato Production and Handling* (New York: Orange Judd Publishing Company, Inc., 1929), 96.

Providing ventilation in sweet potato curing barns was considered by some to be essential. Professor T.K. Godbey, a sweet potato connoisseur who developed the Triumph variety, felt that “the secret of keeping sweet potatoes [was] ventilation.”<sup>88</sup>

Others, such as J.M. Lutz, an agricultural researcher and writer, felt that ventilation only reduced the humidity in the curing barn and made it harder to keep a high temperature throughout the curing process.<sup>89</sup> When the sweet potatoes begin to sweat and give off moisture, it had previously been recommended that vents be opened to prevent a buildup of moisture on the walls and ceiling.<sup>90</sup> Lutz’s research, however, supported the idea that an increase in humidity due to moisture rising from the sweet potatoes was not likely to put enough moisture in the building to cause alarm.<sup>91</sup> By ignoring the need for ventilation that had previously been heralded as the only way to cure sweet potatoes, construction of sweet potato curing barns would have become much cheaper and more convenient. However, this study did not locate a sweet potato curing barn that did not display multiple forms of ventilation.

### *Insulation*

The primary purpose of insulation in a sweet potato curing barn was to maintain a steady temperature inside the structure. Sudden temperature changes within the barn could prove to be detrimental to the sweet potatoes and hinder the curing process that was

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<sup>88</sup> Clinton Grow, *Sweet Potato Culture for the Southern Planter* (Seville, Ga.: Crow & Brogdon, 1915), 61.

<sup>89</sup> J.B. Edmond and G.R. Ammerman, *Sweet Potatoes: Production, Processing, Marketing* (Westport, Connecticut: The Avi Publishing Company, Inc., 1971), 226.

<sup>90</sup> Edmond and Ammerman, *Sweet Potatoes: Production, Processing, Marketing*, 225.

<sup>91</sup> Edmond and Ammerman, *Sweet Potatoes: Production, Processing, Marketing*, 226.

occurring. It was recommended to insulate with at least one-half inch insulating board.<sup>92</sup> Theoretically, insulation would be put in the roof, ceiling, and side walls to ensure that needed heat was not lost.<sup>93</sup> In instances where cost was a prime factor, layering boards on both sides of the studs and lining them with building paper provided a substantial form of insulation.<sup>94</sup>



Figure 3.15: Insulation on the Ceiling

Insulation could take many forms including simple double wall construction, double wall construction with building paper or sawdust between the walls, or rock wool

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<sup>92</sup> Loren W. Neubauer and Harry B. Walker, *Farm Building Design* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961), 259.

<sup>93</sup> Neubauer and Walker, *Farm Building Design*, 259.

<sup>94</sup> H.C. Thompson, *Sweet Potato Production and Handling* (New York: Orange Judd Publishing Company, Inc., 1929), 94.

insulation in the walls and ceiling.<sup>95</sup> Double wall construction consisted of essentially two walls which allowed for dead air space inside the walls to serve as an insulator. If the correct form of insulation was used and was correctly installed, there was often a significant reduction in fuel costs.<sup>96</sup>

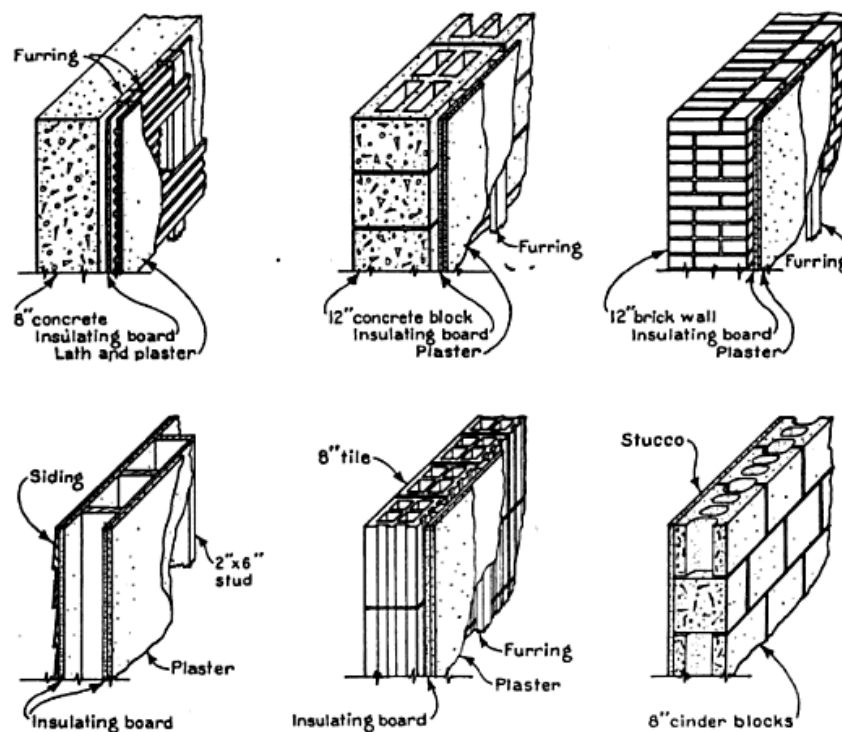


Figure 3.16: Comparison of Various Materials<sup>97</sup>

<sup>95</sup> William Clifton Carter, "An Economic Study of Sweet Potato Storage in Georgia" (master's thesis, University of Georgia, 1955), 31.

<sup>96</sup> E.T. Swink, "Curing and Storing Sweet Potatoes with Electric Heat," in *C.R.E.A. News Letter*, ed. J.P. Schaezner (Chicago, June 1938), 41.

<sup>97</sup> M.A.R. Kelley, "Truck Crop Investigations: Design and Operation of Commercial Sweet Potato Storage Houses" (Norfolk, Virginia: Virginia Truck Experiment Station, 1929), 745.

### *Temperature and humidity*

Temperature was, by far, the most difficult part of the curing process to regulate and hold steady, partly due to the many different factors that come into play. Ventilation, although it certainly serves a purpose, could either help regulate temperature and humidity or make it difficult to keep steady.

Before the sweet potatoes are brought into the barn, a fire would normally be started in the storage house to dry it out and raise the temperature.<sup>98</sup> Although it was very difficult to obtain the correct temperature when bringing sweet potatoes into the barn, starting a fire early would make it much easier to reach the desired temperature quickly once the barn is full. To facilitate curing, the temperature inside the sweet potato curing barns must be kept between 80° and 85° F.<sup>99</sup> Relative humidity should be around 70 to 75% or lower.<sup>100</sup>

Moisture barriers, such as asphalt paper, metal foil, or a heavy coat of paint were sometimes placed inside the walls.<sup>101</sup> “The air inside the house [would] be kept warmer than the outside air as this [prevented] moisture from being deposited on the walls and

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<sup>98</sup> H.C. Thompson, *Sweet Potato Production and Handling* (New York: Orange Judd Publishing Company, Inc., 1929), 101.

<sup>99</sup> Deane G. Carter, *Farm Buildings* (New York: John Wiley & Sons, Inc., 1922), 241.

<sup>100</sup> Carter, *Farm Buildings*, 241.

<sup>101</sup> Loren W. Neubauer and Harry B. Walker, *Farm Building Design* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961), 259.



other parts of the interior.”<sup>102</sup> The sweet potato curing barns surveyed for this thesis were mostly of cinderblock construction and did not exhibit these examples of moisture barriers. Of the two wooden sweet potato curing barns surveyed, access to the interior of the walls was not permitted.

### *Storage*

Once sweet potatoes have been properly cured, they can either be stored in the curing barn until used by an individual family or sold to meet consumer demands. Sweet potato storage does not have as many factors as are involved in the curing process. Maintaining a steady, cool temperature to prevent sprouting is all that is necessary to keep the cured sweet potatoes until they are ready to be used. The curing barn should be tight and sound to prevent rodents or other small animals from spreading disease or eating the crop.

### Heating

Sweet potatoes are grown in warmer climates which aids in the temperature requirement for curing these roots. However, most locations require artificial heating to protect the roots and facilitate the curing process. While sweet potatoes are curing inside the barn, the temperature is monitored regularly. Thermometers throughout the barn could provide an accurate reading, allowing the farmer to either raise or lower the temperature as necessary.

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<sup>102</sup> H.C. Thompson, *Sweet Potato Production and Handling* (New York: Orange Judd Publishing Company, Inc., 1929), 102.



Figure 3.17: Oil Stove<sup>103</sup>

Regardless of the heating system installed, it should be the best fit for the location, construction, and capacity of that particular sweet potato curing barn. Without adequate heating, the curing process would not occur to satisfaction. Stoves were typically placed in the coldest corner of the structure.<sup>104</sup> One of the wood frame sweet potato curing barns surveyed showed signs that a stove had been located in the northeast corner, farthest from the door. Some barns, such as two of the cinderblock barns surveyed for this thesis, placed the stove in the center of the structure to allow for more even distribution of the heat. For a larger capacity barn, more than one stove was necessary. Often a community barn would be divided into several rooms, each of which might have its own stove to allow for consistency in temperature throughout the barn.

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<sup>103</sup> J.T. Rosa, Jr. "Sweet Potato Culture in Missouri," Agricultural Experiment Station Circular 103 (Columbia, Missouri: University of Missouri, 1921), 11.

<sup>104</sup> H.C. Thompson, *Sweet Potato Production and Handling* (New York: Orange Judd Publishing Company, Inc., 1929), 103.

## Wood

In many parts of the South, sheet-iron wood stoves have been used in heating sweet potato curing barns. Using this method of heating was often quicker than other options.<sup>105</sup> Wood was often more readily available than any other fuel and if monitored correctly required very little maintenance. An advantage of wood and coal stoves was that flues and stove pipes carried the combustible products outside of the barn, theoretically reducing the threat of fire.<sup>106</sup>

## Coal

Coal stoves were recommended where heating was required throughout most of the storage period.<sup>107</sup> Coal was also used to heat larger sweet potato curing barns, while oil or kerosene was the choice for smaller curing barns.<sup>108</sup> Again, the availability of fuel would certainly dictate the type of heating system used. The location of the stove might also have been a factor when choosing which fuel to use. Or, perhaps, the type of heating system might have been influential in the placement of the stove. Carrying firewood or coal in and ashes out would be inconvenient if a stove was not readily accessible by a walkway or located in the basement.

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<sup>105</sup> H.C. Thompson, *Sweet Potato Production and Handling* (New York: Orange Judd Publishing Company, Inc., 1929), 103.

<sup>106</sup> T.E. Hand and K.L. Cockerham, *The Sweet Potato: A Handbook for the Practical Grower* (New York: The MacMillan Company, 1921), 199.

<sup>107</sup> H.C. Thompson, *Sweet Potato Production and Handling* (New York: Orange Judd Publishing Company, Inc., 1929), 103.

<sup>108</sup> J.T. Rosa, Jr. "Sweet Potato Culture in Missouri," Agricultural Experiment Station Circular 103 (Columbia, Missouri: University of Missouri, 1921), 11.

*Electric*

During the Rural Electrification program, many farmers were encouraged to switch their homes and farm buildings over to electricity. Electricity was a novel concept and although some were leery of change, many rural households were eager to welcome electricity and all that it could offer into their lives. Heating sweet potato curing barns was just one in a multitude of things that the introduction of electricity altered in the rural landscape.

In some cases, electric heat was considered to be the most convenient and cleanest. The normal heating load is one-third to one-half kilowatt per one hundred bushels or an average of four kilowatts per one thousand bushels.<sup>109</sup> Once installed, electric heat required very little attention. However, electricity did have some problems. It required special adaptations to the barn that could be costly and time-consuming for those who had no prior experience with electrical wiring. There was also the danger of losing the crop if the power were to go out.

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<sup>109</sup> Loren W. Neubauer and Harry B. Walker, *Farm Building Design* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961), 259.

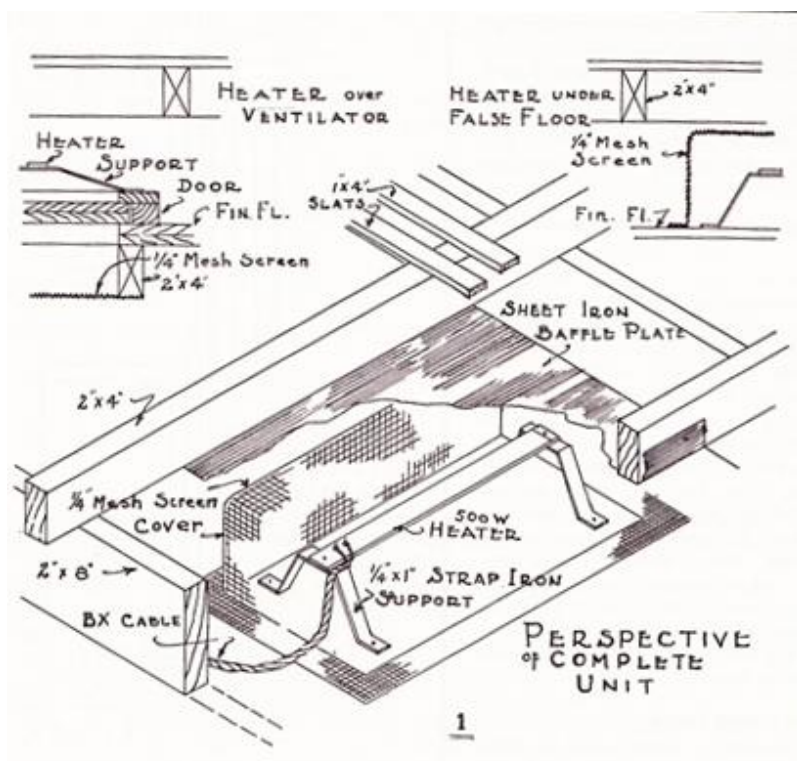


Figure 3.18: Cross Section Diagram of Installation of an Electric Heater in a Sweet Potato Curing Barn<sup>110</sup>

Electric heating could also be conveniently located out of the way between the floor and the false floor.<sup>111</sup> Since warmer air rises to the top, the floor of a curing barn was typically the hardest place to keep a steady, uniform temperature; however, with electric heating, this traditional problem is no longer an issue. Eliminating a stove, needed with wood or coal, would open the floor for more sweet potatoes to be brought into the curing

<sup>110</sup> E.T. Swink, "Curing and Storing Sweet Potatoes with Electric Heat," in *C.R.E.A. News Letter*, ed. J.P. Schaezner (Chicago, June 1938), 41.

<sup>111</sup> Swink, "Curing and Storing Sweet Potatoes with Electric Heat," 29.

barn, making it much more efficient.<sup>112</sup> Electric heat was easily conveyed throughout the whole house, creating a uniform and even distribution and the danger of fire was also reduced since there was no open flame.<sup>113</sup>

### *Air-conditioning*

In 1949, an air-conditioned storage house was built in New Jersey.<sup>114</sup> A “thermostatically heated and humidistatically controlled air-conditioning system” was employed to cure sweet potatoes in a house with a capacity of over 12,000 bushels.<sup>115</sup> The system was sophisticated in that it could re-circulate air or completely exhaust it from the facility.<sup>116</sup> This type of temperature control was used mainly in more modern, commercial sweet potato curing houses that had a larger amount of space to manage.

Despite the fact that heating systems varied greatly, each fulfilled a purpose for that particular sweet potato curing barn. Remnants of these systems can be seen in historic sweet potato curing barns although few still retain the original stove or electric wiring.

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<sup>112</sup> E.T. Swink, “Electricity for Heating Sweet Potato Curing and Storage House,” in *C.R.E.A. News Letter*, ed. J.P. Schaezner (Chicago, August 1, 1936), 29.

<sup>113</sup> Swink, “Electricity for Heating Sweet Potato Curing and Storage House,” 29.

<sup>114</sup> J.B. Edmond and G.R. Ammerman, *Sweet Potatoes: Production, Processing, Marketing* (Westport, Connecticut: The Avi Publishing Company, Inc., 1971), 241.

<sup>115</sup> Edmond and Ammerman, *Sweet Potatoes: Production, Processing, Marketing*, 241.

<sup>116</sup> Edmond and Ammerman, *Sweet Potatoes: Production, Processing, Marketing*, 241.

### Capacity

Sweet potato curing barns range in size from small farm structures to commercial warehouses. This can mean a difference in capacity from around five hundred bushels up to several thousand bushels.<sup>117</sup> Typical sweet potato curing barn designs recommended allowing about three cubic feet for each bushel of potatoes.<sup>118</sup> Figure 3.19 shows a community sweet potato storage barn designed by T.C. Johnson, Director of the Virginia Truck Experiment Station in Norfolk, which has a capacity of ten thousand barrels.

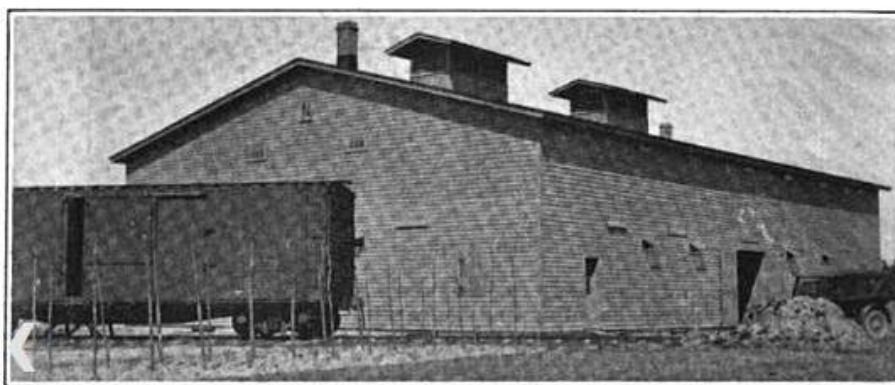


Figure 3.19: Community Sweet Potato Storage House - Tasley, Virginia<sup>119</sup>

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<sup>117</sup> Deane G. Carter and W.A. Foster, *Farm Buildings* (New York: John Wiley & Sons, Inc., 1941), 290.

<sup>118</sup> Loren W. Neubauer and Harry B. Walker, *Farm Building Design* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961), 259.

<sup>119</sup> Fred W. Geise, "Storing and Bedding Sweet Potato Stock," Bulletin 39 & 40 (Norfolk, Virginia: Virginia Truck Experiment Station, 1922), 228.

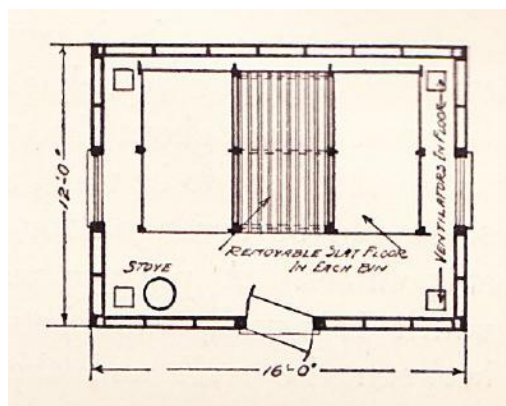


Figure 3.20: Floor Plan for Small Sweet Potato Curing Barn<sup>120</sup>

Smaller sweet potato curing barns could more easily facilitate the curing process as it was easier to keep the temperature steady and uniform throughout a barn with less space to cover. Figure 3.20 illustrates a sweet potato curing barn with a capacity of three hundred to five hundred bushels. For larger warehouse style curing barns or commercial structures, the houses were divided into rooms to allow for even curing. Figure 3.21 shows a floor plan for a sweet potato curing barn with a capacity of over 15,000 bushels.

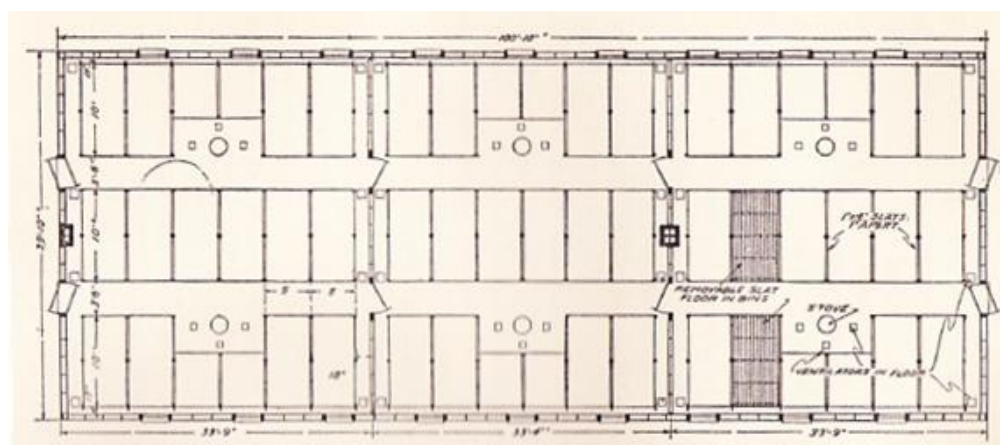


Figure 3.21: Floor Plan for Large Sweet Potato Curing Barn<sup>121</sup>

<sup>120</sup> T.E. Hand and K.L. Cockerham, *The Sweet Potato: A Handbook for the Practical Grower* (New York: The MacMillan Company, 1921), 195.

<sup>121</sup> Hand and Cockerham, *The Sweet Potato: A Handbook for the Practical Grower*, 197.



## Access

### *Location*

Larger, commercial curing barns were typically located in a closer proximity to the market or some form of transportation that would provide access to the market, such as a rail line.<sup>122</sup> Individual sweet potato curing barns were located on the farm, often next to the field or relatively close by.<sup>123</sup> Although there is a great deal of convenience associated with having the curing barn close to the field, farmers increasingly saw incentives in utilizing commercial curing barns that were closer to the markets.<sup>124</sup>



Figure 3.22: Wagon Transporting Sweet Potatoes from the Field<sup>125</sup>

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<sup>122</sup> University of Tennessee Agricultural Experiment Station, *Possibilities of Sweetpotato Production in West Tennessee*, by S.W. Atkins and C.C. Mantle, Rural Research Series Monograph No. 168, May 10, 1944, 46.

<sup>123</sup> University of Tennessee, *Possibilities of Sweetpotato Production in West Tennessee*, 46.

<sup>124</sup> University of Tennessee, *Possibilities of Sweetpotato Production in West Tennessee*, 47.

<sup>125</sup> Fred E. Miller, "Sweet-Potato Growing," United States Department of Agriculture Farmer's Bulletin 999 (Washington, D.C.: Government Printing Office, 1919), 26.

Commercial sweet potato curing barns were sometimes located next to a rail line which provided relatively quick transportation to a larger market. Many of the older farmers that used individual farm curing barns, however, were not convinced that rail transport was the best for maintaining a quality crop. Vibrations caused by trains, along with the jostling of an extended trip could cause damage to the fragile crop, thereby reducing the price. In Caroline County, Virginia, horse and wagons were used in the early 1930s to transport sweet potatoes to the nearest market.

### Care

#### *Cleaning*

It was often recommended for sweet potato curing barns to be disinfected and cleaned before the crop was brought in.<sup>126</sup> Cleaning the sweet potato curing barn was necessary to prevent disease spores from infesting the newly harvested crop.<sup>127</sup> Some farmers used a copper sulphate solution, others formaldehyde spray or lamps, while others may have used corrosive sublimate or burned sulphur.<sup>128</sup>

#### *Maintenance*

One of the biggest problems with historic structures is the multitude of issues that arise when proper maintenance is not carried out. Often a coat of paint on the exterior

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<sup>126</sup> H.C. Thompson, *Sweet Potato Production and Handling* (New York: Orange Judd Publishing Company, Inc., 1929), 99.

<sup>127</sup> University of Arizona, College of Agriculture, "The Adobe Sweet Potato Storage House in Arizona," by F.J. Crider and D.W. Albert, Bulletin No. 106 (Tucson, Arizona, 1925), 400.

<sup>128</sup> William Clifton Carter, "An Economic Study of Sweet Potato Storage in Georgia" (master's thesis, University of Georgia, 1955), 37-38.

walls, air-tight window and door openings, and a solid roof is all that is required to preserve the structural integrity of a historic barn. Sweet potato curing barns were often well maintained due to the need to keep the space clean and intact for next year's crop. While in use, sweet potato curing barns were usually impeccable spaces that were cared for on a routine basis.

## CHAPTER 4

### MODERN CURING BARNS

Sweet potatoes are still grown in many parts of the Mid-Atlantic and the South but visitors to the countryside rarely see a historic sweet potato curing barn in the traditional producing areas. As small farms have become more obsolete, individual farmers no longer use sweet potato curing barns solely for their own purposes. Larger, community barns have become more economically feasible. In some instances, cooperatives buy the sweet potatoes directly from the farmer and then cure, store, and market them. In other areas, farmers pay a fee to have their sweet potatoes cured in a community house but are still responsible for marketing the crop.

Although the requirements for curing sweet potatoes have not changed, technology and innovative designs have altered the way modern curing barns achieve their purpose. The need for uniform high temperature and humidity is now achieved with the aid of a thermostat, while the need for ventilation has been dismissed through the advantageous use of humidification equipment.<sup>129</sup>

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<sup>129</sup> North Carolina Cooperative Extension Service, "The Postharvest Handling of Sweetpotatoes: With Construction Guidelines for Negative Horizontal Ventilation Curing and Storage Facilities," Michael D. Boyette, Edmond A. Estes, A. Robert Rubin, and Kenneth A. Sorenson (1996), 7.



Figure 4.1: Commercial Sweet Potato Curing Facility Advertisement, 1946<sup>130</sup>

Although changes had been occurring in the sweet potato industry for several years, it was not until the 1960s that such changes became evident in sweet potato curing barn designs.<sup>131</sup> Mechanization had created the forklift that allowed for more sweet potatoes to be loaded onto pallets and moved in and out of curing and storing facilities with greater ease and convenience. However, the traditional slatted false floors of historic sweet potato curing barns were not strong enough to sustain the additional weight of

<sup>130</sup> *Sweet Potato Journal* 1, no. 3 (October 1946): 21.

<sup>131</sup> North Carolina Cooperative Extension Service, "The Postharvest Handling of Sweetpotatoes: With Construction Guidelines for Negative Horizontal Ventilation Curing and Storage Facilities," Michael D. Boyette, Edmond A. Estes, A. Robert Rubin, and Kenneth A. Sorenson (1996), 12.

these machines, thereby generating a demand for new structural designs.<sup>132</sup> Different loads and pressures had to be taken into account to support the new mechanizations. This created a new image for sweet potato curing barns.



Figure 4.2: Forklift Arranging Pallets of Sweet Potatoes<sup>133</sup>

For a little while, farmers continued to use concrete block or wood construction for modern curing barns, as they had in traditional barns. The changes were much more subtle. Table 4.1 outlines some of the differences between sweet potato curing barns of the 1920s and those being constructed thirty years later. Slowly, alterations were being made in the ways ventilation and insulation was managed. Eventually, due to cost factors, steel and post frame construction began to take precedence in commercial construction of

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<sup>132</sup> North Carolina Cooperative Extension Service, “The Postharvest Handling of Sweetpotatoes: With Construction Guidelines for Negative Horizontal Ventilation Curing and Storage Facilities,” Michael D. Boyette, Edmond A. Estes, A. Robert Rubin, and Kenneth A. Sorenson (1996), 12.

<sup>133</sup> “Sweetpotato Culture and Diseases,” U.S. Department of Agriculture Agriculture Handbook No. 388 (Washington, D.C.: Government Printing Office, 1971), 44.

sweet potato curing barns.<sup>134</sup> Notice the framing visible through Figure 4.3. Steel frame barns were both cheaper and quicker to construct, allowing for a more efficient and economical solution.

Table 4.1: Comparison of 2nd and 5th Decade Sweet Potato Storage Barns<sup>135</sup>

Part of Storage House	House of Second Decade	House of Fifth Decade
Foundation	Open with posts or piers	Closed with or without vents; concrete or concrete blocks.
Insulation of walls	Unmatched boards, siding, and building paper. Air space not filled. No vapor seal.	Concrete or cinder blocks or matched lumber. Air space filled with mica. Vapor seal present.
Ceiling	Not insulated, if present.	Insulated.
Light source	Windows, usually with shutters.	Electric lights. No windows.
Lower vents	In floor with dampers.	In wall at floor level with dampers; or in floor with dampers.
Heating equipment	Manually operated wood and coal stoves.	Thermostatically operated electric strip heaters; hot air and hot water heaters.
Floor solid	Wood slatted.	Earth or wood slatted.
Floor false		
Humidification equipment	None.	Water applied to earth floor; water in shallow pans; water applied by humidifier.

<sup>134</sup> North Carolina Cooperative Extension Service, "The Postharvest Handling of Sweetpotatoes: With Construction Guidelines for Negative Horizontal Ventilation Curing and Storage Facilities," Michael D. Boyette, Edmond A. Estes, A. Robert Rubin, and Kenneth A. Sorenson (1996), 19.

<sup>135</sup> J.B. Edmond and G.R. Ammerman, *Sweet Potatoes: Production, Processing, Marketing* (Westport, Connecticut: The Avi Publishing Company, Inc., 1971), 240.

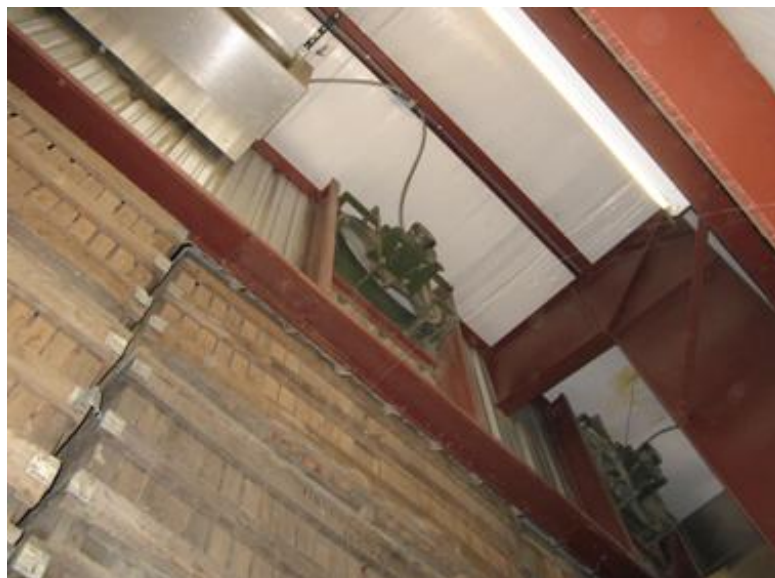


Figure 4.3: Steel Frame Sweet Potato Curing Barn<sup>136</sup>

Some things, however, have not changed. Modern curing barns still require a well-drained area upon which to build.<sup>137</sup> This ensures that moisture in the foundation will not be a problem. The general principles surrounding sweet potato curing barn construction have also remained the same. Only materials have changed. Several inches of reinforced concrete now take the place of slatted false floors while spray-on polyurethane foam insulates buildings that historically would have used building paper or

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<sup>136</sup> M.D. Boyette, “The Investigation of Negative Horizontal Ventilation for Long-Term Storage of Sweetpotatoes,” *Applied Engineering in Agriculture* 25, no. 5: 704.

<sup>137</sup> North Carolina Cooperative Extension Service, “The Postharvest Handling of Sweetpotatoes: With Construction Guidelines for Negative Horizontal Ventilation Curing and Storage Facilities,” Michael D. Boyette, Edmond A. Estes, A. Robert Rubin, and Kenneth A. Sorenson (1996), 20.



additional lumber.<sup>138</sup> Vents and fans for ventilation are still placed at the highest point in the building as seen in Figure 4.3. The mechanization, although new and innovative, accomplishes the same as opening a ridge vent to allow air to circulate through.



Figure 4.4: Modern Sweet Potato Curing Barn - North Carolina<sup>139</sup>

Modern sweet potato curing barns can hold the capacity of multiple individual farm curing barns. Access to and from the fields and market is less problematic with the larger doors that allow tractor and trailers to load and unload with ease. The sweet potato crop is less likely to be damaged when transported by forklifts rather than being jostled around as when carried by hand.

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<sup>138</sup> North Carolina Cooperative Extension Service, “The Postharvest Handling of Sweetpotatoes: With Construction Guidelines for Negative Horizontal Ventilation Curing and Storage Facilities,” Michael D. Boyette, Edmond A. Estes, A. Robert Rubin, and Kenneth A. Sorenson (1996), 20.

<sup>139</sup> M.D. Boyette, “The Investigation of Negative Horizontal Ventilation for Long-Term Storage of Sweetpotatoes,” *Applied Engineering in Agriculture* 25, no. 5: 704.

With the efficiency of technology and mechanization, there is much to recommend modern sweet potato curing barns. There are downsides, though. As these modern sweet potato curing barns take the place of the traditional structures, many of the historic barns have fallen prey to neglect and decay. Disuse can be a cruel fate for agricultural buildings.

## CHAPTER 5

### HISTORIC SWEET POTATO CURING BARNs TODAY

#### Decline of general farm production

As small, family farms have declined in the United States throughout the last several decades, much of what was once valuable, productive farmland has been converted into subdivisions, strip malls, and other signs of economic development. The rural American landscape is changing, and in the process of these changes, much of the vernacular architecture of the farming lifestyle is being lost.

Over sixty years ago, Virginia had approximately sixteen million acres in farmland; today, that number has dwindled to just above eight million acres.<sup>140</sup> Farmland provides an easy target for developers. The land is typically flat, well-drained, and clear of forests. Those that have managed to hold onto their farms in the face of growth and economic development have watched as property taxes rise, making it more and more difficult to preserve the family farm. Although there are non-profit organizations and government agencies that assist farmers in protecting their land, many farmers view the land as their retirement fund and are willing to sell when the price is right. Once the farmer has left the land, the barns and agricultural buildings will be sure to follow. A piece of Americana is forever lost to the greedy hands of progress and growth.

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<sup>140</sup> National Agricultural Statistics Service, "Farm Numbers: Total Farms, Land in Farms, Average Farm

Size," United States Department of Agriculture

[http://www.nass.usda.gov/QuickStats/PullData\\_US.jsp](http://www.nass.usda.gov/QuickStats/PullData_US.jsp) (accessed March 3, 2011).

### Decline of sweet potatoes

The decline in the number of sweet potatoes grown in the United States can be attributed to many different factors. A publication released by the U.S. Department of Agriculture's Agricultural Research Service stated that, "increased urbanization of our population and mechanization of our industry and agriculture have reduced the overall average physical labor requirements and the needs for high-calorie foods."<sup>141</sup> As American's diets have changed, crops grown by farmers have changed to match a new consumer need. Animal products, such as beef and eggs, became popular in the 1970s, which also contributed to the decline in the production of sweet potatoes.<sup>142</sup>

In 1939, roughly 1.2 million farms were recorded by the U.S. Census as growing sweet potatoes. By 1959, only 310,000 farms were growing this vegetable and so the downward trend had begun.<sup>143</sup> Although commercial sweet potatoes are still grown in parts of the United States, the scale and monumental importance that had been attributed to the crop during the heyday of the 1930s has been lost.

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<sup>141</sup> "Sweetpotato Culture and Diseases," U.S. Department of Agriculture Agriculture Handbook No. 388 (Washington, D.C.: Government Printing Office, 1971), 2.

<sup>142</sup> J.B. Edmond and G.R. Ammerman, *Sweet Potatoes: Production, Processing, Marketing* (Westport, Connecticut: The Avi Publishing Company, Inc., 1971), 9.

<sup>143</sup> "Sweetpotato Culture and Diseases," U.S. Department of Agriculture Agriculture Handbook No. 388 (Washington, D.C.: Government Printing Office, 1971), 3.

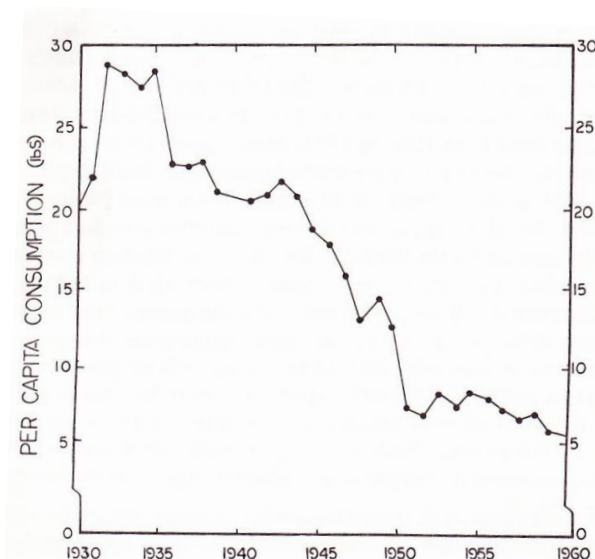


Figure 5.1: Per Capita Consumption in the United States, 1930-1960<sup>144</sup>

As seen in Figure 5.1, the per capita consumption of sweet potatoes in the United States has fallen drastically. In 1949, the average American consumed 13.9 pounds. That number had reduced to 4.3 pounds by 1992.<sup>145</sup> The factors mentioned previously certainly had an effect on the drastic drop in values seen in Figure 5.1.

Today, China produces 81% of the world's sweet potato crop, making it a leader in the sweet potato industry. In contrast, the United States produced less than 1% of the total amount of sweet potatoes harvested in 2007.<sup>146</sup> In the United States, sweet potato acreage and production peaked in 1932 with more than one million acres harvested. The

<sup>144</sup> J.B. Edmond and G.R. Ammerman, *Sweet Potatoes: Production, Processing, Marketing* (Westport, Connecticut: The Avi Publishing Company, Inc., 1971), 10.

<sup>145</sup> University of Maryland, "Growing Sweet Potatoes," Maryland Cooperative Extension Fact Sheet 464, 1.

<sup>146</sup> Diane Huntrods, "Sweet Potato Profile," Agricultural Marketing Resource Center

[http://www.agmrc.org/commodities\\_\\_products/vegetables/sweet\\_potato\\_profile.cfm](http://www.agmrc.org/commodities__products/vegetables/sweet_potato_profile.cfm) (accessed March 8, 2011).

following figures outline the growth that occurred throughout the nation. Today, less than one tenth of that amount is being harvested in the United States.<sup>147</sup>

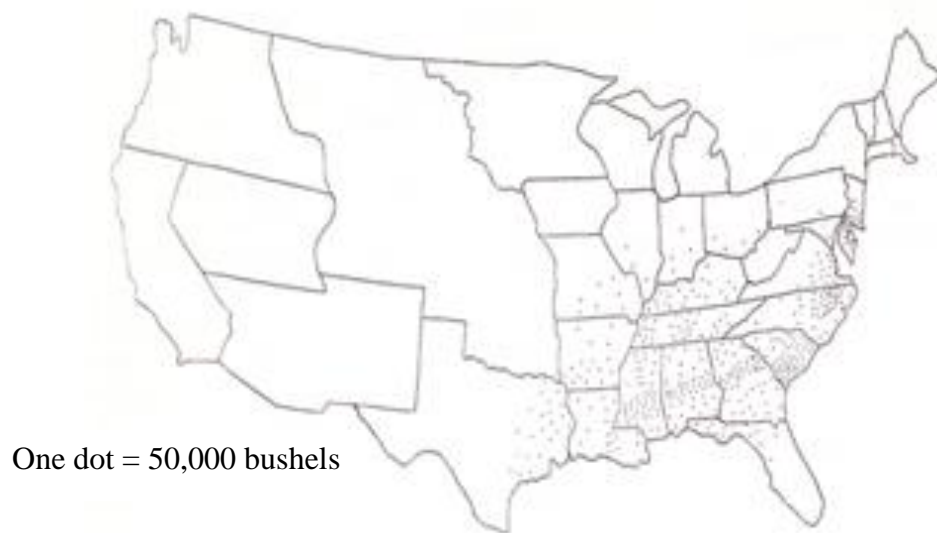


Figure 5.2: Sweet Potato Production in 1849<sup>148</sup>

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<sup>147</sup> North Carolina Cooperative Extension Service, “The Postharvest Handling of Sweetpotatoes: With Construction Guidelines for Negative Horizontal Ventilation Curing and Storage Facilities,” Michael D. Boyette, Edmond A. Estes, A. Robert Rubin, and Kenneth A. Sorenson (1996), 2.

<sup>148</sup> J.B. Edmond and G.R. Ammerman, *Sweet Potatoes: Production, Processing, Marketing* (Westport, Connecticut: The Avi Publishing Company, Inc., 1971), 6.



Figure 5.3: Sweet Potato Production in 1909<sup>149</sup>

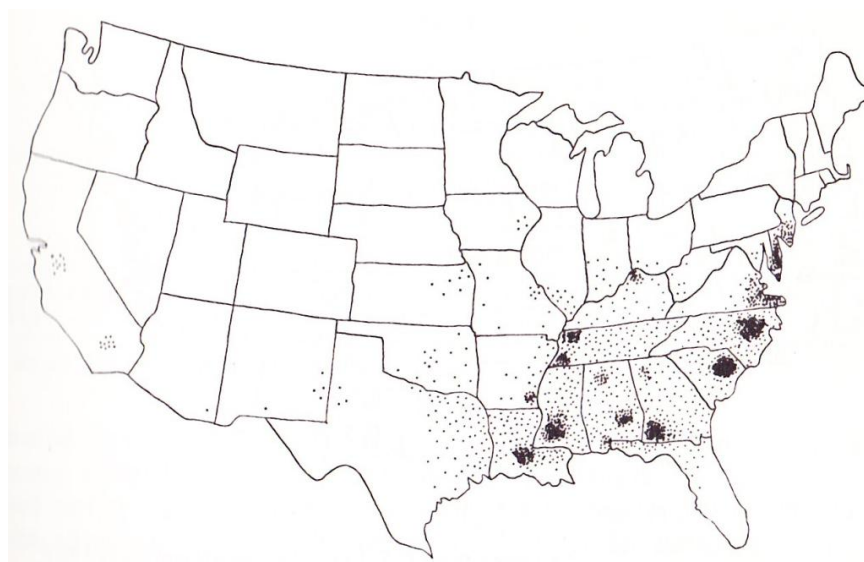


Figure 5.4: Sweet Potato Production in 1934<sup>150</sup>

<sup>149</sup> J.B. Edmond and G.R. Ammerman, *Sweet Potatoes: Production, Processing, Marketing* (Westport, Connecticut: The Avi Publishing Company, Inc., 1971), 6.

<sup>150</sup> Edmond and Ammerman, *Sweet Potatoes: Production, Processing, Marketing*, 7.

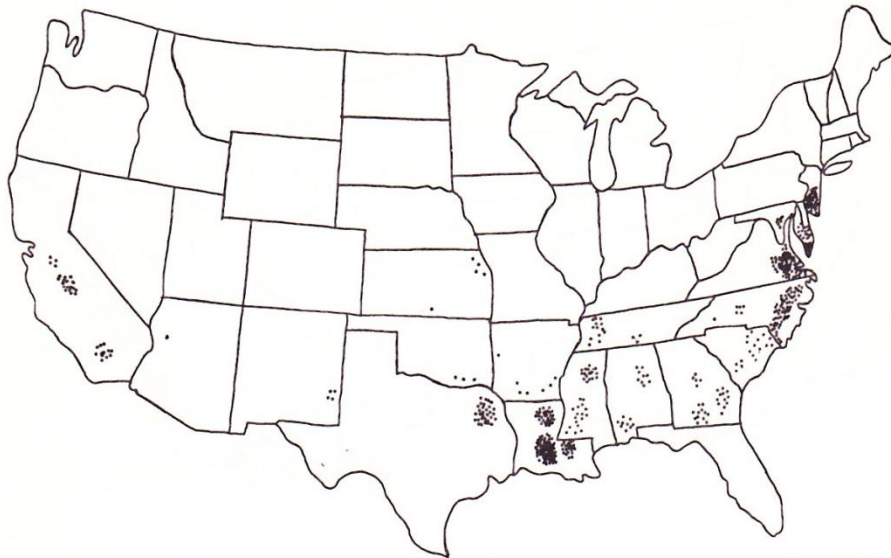


Figure 5.5: Principal Producing Areas, 1961-1965<sup>151</sup>

#### Neglect, disuse, and disrepair

Due to the loss of farmland and other alterations to the rural landscape, combined with a lack of interest in curing sweet potatoes on individual farms, historic sweet potato curing barns have become victims of neglect, disuse, and disrepair. Structures survive when they are utilized and have a purpose. Without an everyday use, such structures are not cared for with the same regularity as other structures, hence the disrepair. Obsolete agricultural buildings face an uncertain future unless a new use can be found.

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<sup>151</sup> J.B. Edmond and G.R. Ammerman, *Sweet Potatoes: Production, Processing, Marketing* (Westport, Connecticut: The Avi Publishing Company, Inc., 1971), 8.





Figure 5.6: Overgrown Community Sweet Potato Curing Barn - Caroline County, Virginia

#### Adaptive re-use

Although some historic sweet potato curing barns may no longer be utilized for their original purpose, many have been given a new life through adaptive re-use.

Traditional sweet potato curing barns are well-built, solid structures that hold a multitude of potential. Property owners with an interest in rehabilitating farm structures can find a variety of ways in which to re-purpose the structure. When attempting an adaptive re-use project, it is important to take into consideration the strengths and weaknesses of the barn in question. Some structures are better suited to certain uses rather than others.

When undergoing an adaptive re-use project, many preservationists will encourage landowners to preserve the integrity of the exterior of the barn by retaining the original window and door openings and maintaining the immediate setting. Giving a barn a new purpose often means that the interior of the structure must undergo some alterations. These changes should be minimal to protect the design, character, and historic

integrity of the structure. In each case of adapting a historic structure for a new use, it is advised to follow the Secretary of the Interior's Standards for Rehabilitation.

### *Storage/garage*

Many farm buildings that are no longer used for their original purpose are utilized for storage. The amount of open space contained within a barn makes it feasible for safe storage. Boxes can be stored on second stories while equipment or other large objects can easily be stored on the ground level.



Figure 5.7: Adapted Sweet Potato Curing Barn – Caroline County, Virginia

One of the sweet potato curing barns in Caroline County, Virginia has been adapted to serve as a garage. A local contractor was hired to put a garage door in the center front wall of the structure. When work began on the structure, there was a great community outcry from individuals who were afraid that an area landmark would be lost. Although some historic integrity of the structure was lost due to this alteration, the

changes made gave the structure a new purpose, effectively preserving it from being lost forever.

### *Guest house*

Both of the wooden Caroline County, Virginia sweet potato curing houses looked at in this thesis have been adapted for housing. One has been re-purposed to serve as a guest house. The two-story structure has been fitted with a solid floor salvaged from a nearby structure to replace the slatted floor previously used when curing sweet potatoes. Electricity and propane heat were added to make the structure a comfortable stay for friends and guests. Both were adapted in a way that was minimally invasive and did not detract from the character of the curing barn.



Figure 5.8: Sitting Area in a Converted Sweet Potato Curing Barn

Another frame sweet potato curing barn located in Caroline County has been rehabilitated to serve as a vacation residence. Since the structure was not intended to be a primary residence there was no need for extensive alterations to occur. Fitting the barn with plumbing for a kitchen and bathroom and electricity was necessary to make it a comfortable space. New windows were installed which have diminished the integrity of the sweet potato curing barn. The Secretary of the Interior's Standards for Rehabilitation were not followed in this case. However, the community was pleased to see the old structure still standing and with a new purpose.



Figure 5.9: Curing Barn Converted to a Vacation Home

#### *Other uses*

There are many different adaptive re-use ideas that are available to agricultural structures. It is important that the right choice be made for the structure in question. Depending on size, location, the availability of amenities, and the amount of alterations

that would have to be made, property owners should consider the most feasible manner in which to give the structure a new life and purpose.

Various suggestions for barn adaptive re-use projects include an agri-tourism business, antique sales, farmers market, education center, or a rental facility. Public space or recreational centers may be beneficial to localities that have limited resources. One of the advantages of utilizing a built structure is the amount of energy that is already within the building. Finding the right use can be a wonderful way of preserving a historic structure while conserving energy and materials.

## CHAPTER 6

### CONCLUSION

#### Preservation, rehabilitation, and restoration

Throughout the sweet potato growing regions, different areas have addressed the issue of preserving these structures in various ways. In Delaware, Maryland, and along the Eastern Shore region of Virginia, sweet potato curing barns have been added to the National Register of Historic Places. Various land owners have taken it upon themselves to preserve, rehabilitate, or restore sweet potato curing barns, creating a piece of agricultural history that can be kept for future generations. In the poorer regions, sweet potato curing barns have been lost due to the lack of funds and interest in preservation efforts.



Figure 6.1: Delaware Curing Barn listed on National Register of Historic Places<sup>152</sup>

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<sup>152</sup> “Chipman Potato House,” National Register of Historic Places nomination (1990).

## Recommendations

Sweet potato curing barns are an important piece of the agricultural evolution that has shaped the rural landscape of the United States. Throughout the years that sweet potatoes experienced their peak in production, many sweet potato curing barns were constructed. These barns now are in dire need of assistance. Raising awareness, generating interest, and encouraging preservation of these structures can be done on many different levels by various individuals or groups.

### *1. Raise awareness and generate interest*

Although sweet potatoes are still grown in the United States, there are many individuals that are not aware of the existence of sweet potato curing barns. Raising awareness concerning these structures can prove influential in preservation efforts. Publications, either through the United States Department of Agriculture, county extension offices, or private individuals, can assist in educating the general public about this important aspect of American agriculture, as well as vernacular architecture and craftsmanship.

After raising awareness, the next step towards preserving sweet potato curing barns is to make a personal connection that will generate interest in the fate of such structures. Most Americans purchase sweet potatoes from the grocery store, never realizing the process that such vegetables have gone through to arrive at a place of convenience. Although most individuals, at some point in their lives, experience the open air pleasure of a farm or rural landscape, making the event a real and intimate thing can leave a lasting impression.



Sweet potato curing barns are certainly interesting structures that have specific characteristics earmarking them as a particular breed of barn. Most are aesthetically pleasing and are built in such a way that it makes economic sense to give the structure a new use rather than demolish it.

Another aspect of raising awareness and generating interest is recognition of the fact that historic foodways are a part of preservation. Thus recipes for sweet potatoes are provided in the Appendix for those who appreciate foodways as an aspect of preservation. For additional information on foodways see Southern Foodways Alliance.<sup>153</sup>

## *2. Encourage preservation*

Preservation of such structures can be encouraged on many different levels. The National Trust for Historic Preservation publishes a list of Most Endangered Historic Places annually. This compilation of structures includes those that are neglected or lack resources to adequately preserve. In 2001, the National Trust listed a barn for the first time. The Miller-Purdue Barn in Indiana had lost its importance as an integral part of the farm. In danger of being burned or demolished through neglect, the awareness generated by being placed on the National Trust's list has facilitated the saving of this barn. Today, the Historic Landmarks Foundation of Indiana and the Barn Again! program are working to save the Miller-Purdue barn from its current fate.

The National Trust for Historic Preservation oversees Barn Again!, a national program that, among other things, helps farmers preserve their barns by finding new,

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<sup>153</sup> Southern Foodways Alliance, <http://southernfoodways.com/index.html> (accessed June 14, 2011).



practical uses for these agricultural buildings. Barn Again! offers many workshops and demonstrations which provide current and innovative assistance. Receiving attention from this program would be a substantial benefit to sweet potato curing barns throughout the South.

The National Park Service has also invested time and energy towards educating the general public about the preservation of historic barns. In 1989, Preservation Brief 20 was released, outlining historic barn types along with their significant features, as well as various preservation methods that are available. The efforts of the National Park Service, both when dealing with their properties and when aiding other landowners in the correct care and maintenance of their historic structures, can provide an invaluable resource to those interested in the preservation of historic sweet potato curing barns.

On a state level, preservation can be encouraged through State Historic Preservation Offices. Many state offices offer workshops and distribute publications to encourage the general public to become active in the preservation of state resources. The Commonwealth of Virginia's Department of Historic Resources has not proven to be a helpful resource with barn preservation.

Other states, however, such as Michigan, Kansas, New York, and Illinois have formed organizations to encourage barn preservation and the rural lifestyle that is so important to their residents. The Southern Maryland Tobacco Barns Preservation Initiative was created as a reaction to the multitude of threats that these historic agricultural structures were facing. Over thirty tobacco barns have been preserved by the

program with the aid of grant money, local and state government support, and concerned citizens.

Within the last twenty years, many states have begun Century Farm programs to recognize and honor farms that have been in production for over one hundred years. Administered by the Virginia Department of Agriculture and Consumer Services, the Virginia Century Farm program reached a milestone in 2008 when they recognized the thousandth farm. Georgia, Tennessee, Missouri, Iowa, and Ohio, to name a few, are among the states that offer this program in support of their farm families.

National and state historic registers are another preservation tool that can be beneficial to the saving of historic barns. The National Register of Historic Places is the official Federal listing of buildings, structures, sites, and objects that are considered significant to American history and culture. A small section of Delaware that had a profound impact on the sweet potato industry has preserved their remaining sweet potato curing barns through a nomination to the National Register of Historic Places.

The Virginia Landmarks Register was created in 1966 in the midst of a preservation fever that was sweeping the nation.<sup>154</sup> The National Register of Historic Places had also been created that year under the National Historic Preservation Act of 1966. State governments were realizing the importance of encouraging local preservation efforts. Today, the Virginia Landmarks Register bears testament to the care and concern Virginia residents have for their historic resources. However, there are no sweet potato curing barns listed on this prestigious register.

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<sup>154</sup> "Historic Registers," Virginia Department of Historic Resources

<http://www.dhr.virginia.gov/registers/register.htm> (accessed May 30, 2011).

The Georgia Register of Historic Places, like its Virginia counterpart, lists properties, sites, structures, or objects that are significant or of importance with regards to the state's history and heritage. Benefits abound when property owners take the initiative to list their resources on the Georgia Register of Historic Places. Property owners may be eligible for state property tax abatement and state income tax credit for rehabilitation projects.<sup>155</sup>

Locally, individuals are beginning to become aware of the importance of preservation and the impact it can have on the legacy and heritage that is created for future generations. In Caroline County, Virginia, the Caroline County Countryside Alliance was created to encourage local landowners to consider the benefits and rewards of placing easements on their farmland. Historic preservation easements protect the integrity of historic resources from the threats of change.

County surveys of historic farm buildings can identify those that are endangered and may qualify for preservation. Historic Oglethorpe County, Inc. published a county-wide survey, which it sponsored, to document historic house types found in Oglethorpe County, Georgia.<sup>156</sup> Such a survey focused on house types, as well as farm buildings, could be undertaken anywhere.

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<sup>155</sup> "Georgia Register of Historic Places: Recognizing and Preserving Our Historic Properties," Georgia Department of Natural Resources Historic Preservation Division  
[http://gashpo.org/assets/documents/ga\\_reg\\_fs.pdf](http://gashpo.org/assets/documents/ga_reg_fs.pdf) (accessed May 30, 2011).

<sup>156</sup> Mark Heeb, *A Field Guide to Historic House Types in Oglethorpe County, Georgia* (Historic Oglethorpe County, Inc., 2004).

### *3. Provide grants and tax incentives*

Grants can be a wonderful way of obtaining the necessary funds for a preservation or rehabilitation project. Restoration grants are often offered by state historic preservation offices, as well as private foundations that wish to aid in the preservation of our nation's resources. Virginia does not offer grant monies to individual property owners, rather focusing their contributions towards non-profits and local governments. One organization that stands out above the others is the Iowa Barn Foundation. As a 501(c)(3) non-profit, they provide matching grants for preservation activities. Although they are only fifteen years old, this foundation has awarded grants totaling over \$400,000 to property owners seeking assistance to preserve their barns. The creation of an organization such as this with a focus on sweet potato curing barns could make a real difference in the fight against time.

Many states offer tax incentives that can be very influential when deciding to rehabilitate a historic structure. Virginia's rehabilitation tax credit allows property owners to receive a credit of 25% on eligible expenses. All rehabilitation projects must be approved by the State Historic Preservation Office to ensure that the Secretary of the Interior's Standards for Rehabilitation have been correctly adhered to. This economic incentive can be combined with federal tax credits, as well.

Federal tax credits are offered for the rehabilitation of non-residential income-producing buildings that were built before 1936. A 20% federal tax credit can significantly alleviate some of the rehabilitation expenses although at least \$5,000 must be spent on the project. To be eligible for this tax credit, however, the structure must be

listed on the National Register of Historic Places or certified as historic by the National Park Service and all rehabilitation work must meet the Secretary of the Interior's Standards for Rehabilitation. After the rehabilitation project has been completed, the historic structure must be used for an income-producing purpose for at least five years.

Although a large amount of documentation is required to receive the federal tax credit, it can be advantageous to private landowners to adhere to the guidelines provided by the National Park Service and the Secretary of the Interior. Provided that the correct measures are taken during the rehabilitation process, landowners can enjoy their historic barn (and the money saved in tax credits) for many years to come.

1. Raise awareness and generate interest
  - a. USDA, county extension office, and private publications
  - b. Personal connection
  - c. Historic foodways
2. Encourage preservation
  - a. National Trust for Historic Preservation
    - i. Most Endangered Historic Places list
    - ii. Barn Again! program
  - b. National Park Service
  - c. State Historic Preservation Offices
  - d. Century Farm program
  - e. National Register of Historic Places
  - f. State historic registers
  - g. Caroline County Countryside Alliance
  - h. County surveys
3. Provide grants and tax incentives
  - a. Iowa Barn Foundation
  - b. Virginia's rehabilitation tax credit
  - c. Federal tax credit

Figure 6.2: Summary List of Recommendations

## Conclusion

According to a USDA study released in early 2011, Virginia is ranked 17<sup>th</sup> in a list of states with barns built before 1960.<sup>157</sup> A state that was once primarily agricultural and just thirty years ago boasted of almost 45,000 farms has gradually lost those great landmarks that tell a history of wars, economic hardship, depression, agricultural evolutions, and much more.<sup>158</sup> Although the way of life surrounding sweet potatoes has vanished in many parts of the Mid-Atlantic and Southern states, the structures themselves still have a great story to tell.

Sweet potato curing barns are an integral part of the agricultural changes that have occurred throughout the decades. The character-defining features of a sweet potato curing barn make it a recognizable structure. Ventilation, insulation, and a heat system are the three main requirements of a sweet potato curing barn. Although each curing barn is slightly different from the next, they all adhere to these design principles.

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<sup>157</sup> “Barns in the United States Built Prior to 1960,” <http://www.preservationnation.org/issues/rural-heritage/barn-again/additional-resources/Barns-in-US-by-state-PDF.pdf> (accessed June 7, 2011).

<sup>158</sup> U.S. Bureau of the Census, “Number of Farms: 1992 and 1987,” under “Ranking of States and Counties,” [http://www.agcensus.usda.gov/Publications/1992/Volume\\_2\\_Publications/Ranking/ranking.pdf](http://www.agcensus.usda.gov/Publications/1992/Volume_2_Publications/Ranking/ranking.pdf) (accessed March 12, 2011).

Table 6.1: Barns Built Prior to 1960<sup>159</sup>

	State	# of Barns
1	Texas	51,236
2	Missouri	36,007
3	Wisconsin	35,386
4	Kentucky	35,224
5	Iowa	34,224
6	Ohio	33,762
7	Pennsylvania	29,321
8	Tennessee	27,555
9	Minnesota	27,165
10	Illinois	25,767
11	Indiana	22,439
12	Oklahoma	22,125
13	Michigan	21,368
14	Kansas	21,046
15	Nebraska	17,592
16	New York	17,506
17	Virginia	17,363
18	North Carolina	15,684
19	California	14,472
20	South Dakota	12,379

As technology changed and mechanization came on the scene, historic sweet potato curing barns were faced with the threat of new economically efficient, large capacity curing barns. While sweet potatoes were still being grown and cured, the historic barns were losing their place on the farm. Today, many have been rehabilitated to serve a new purpose. Agricultural buildings have traditionally been adapted for storage but sweet potato curing barns have seen various new uses, including housing.

<sup>159</sup> “Barns in the United States Built Prior to 1960,” [http://www.preservationnation.org/issues/rural-](http://www.preservationnation.org/issues/rural-heritage/barn-again/additional-resources/Barns-in-US-by-state-PDF.pdf)

[heritage/barn-again/additional-resources/Barns-in-US-by-state-PDF.pdf](http://www.preservationnation.org/issues/rural-heritage/barn-again/additional-resources/Barns-in-US-by-state-PDF.pdf) (accessed June 7, 2011).



It is the goal of this thesis that such work presented here will be instrumental in further research, investigation, and protection of sweet potato curing barns and the culture surrounding them. Through the continued efforts of those within the realm of academia and those with a personal, everyday connection to such structures, there is a great hope that sweet potato curing barns may be preserved for future generations to study, understand, and appreciate.

### *Future studies*

For this thesis, the survey of sweet potato curing barns was restricted to Caroline County, Virginia due to time constraints. There still remains a vast amount of information to capture concerning sweet potato curing barns. An in-depth survey of the sweet potato curing barns that remain throughout the entire region would be advantageous to local and state governments, preservation organizations, landowners, as well as those who may be interested in rural architecture.

The Chesapeake Farm Buildings Survey has documented many of the agricultural buildings within its purview. One of them was a sweet potato curing house that was built by an African American farmer in the late 1800's. The community barn is now available and accessible to any who avail themselves of the Chesapeake Farm Buildings Survey's research. A piece of American history and farming culture has been kept for future posterity. There is certainly more to document and record about sweet potato curing barns. Farm building surveys in the Southern and Mid-Atlantic states would be a wonderful way of preserving this part of agricultural history.

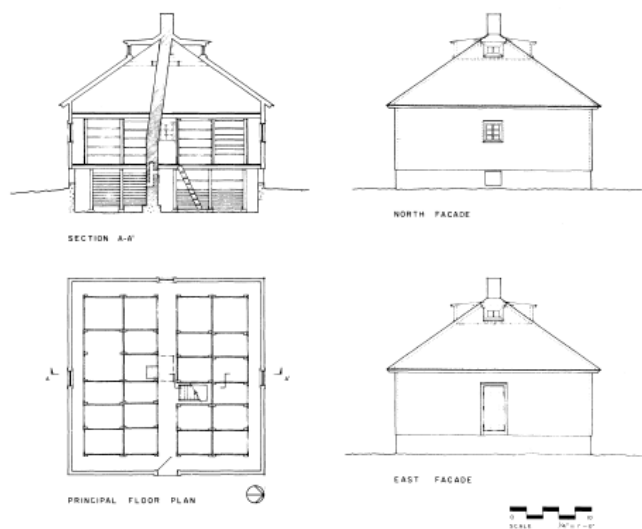


Figure 6.3: Sweet Potato Curing House - Queen Anne's County, Maryland<sup>160</sup>

Developing criteria for sweet potato curing barn assessments and surveys would also be advantageous for future studies. Without having a basic knowledge of the character defining features that make up a sweet potato curing barn, it will become increasingly more difficult for preservationists and other individuals to record and document these fascinating buildings.

Sweet potato curing barns were built as a way of preserving a food, yet over time they became a landmark in their own right. The easily identifiable form of a curing barn began to dot the rural landscape through Virginia, Delaware, North Carolina, Georgia, and other Southern states. These barns, over the years, have been a very influential part of the agricultural world. They sustained a truck crop economy that was beneficial to farmers who had depleted the ground through the growth of other cash crops. Sweet

<sup>160</sup> Orlando Ridout V, "Work in Progress: The Chesapeake Farm Buildings Survey," *Perspectives in Vernacular Architecture* 1 (1982): 142.

potato curing barns, today, are a reminder of what was happening agriculturally in the United States during the 1930s.

The construction of sweet potato curing barns, however, did not originate in the 1930s. Well before this period, sweet potatoes were being cured in various buildings or storage pits. Future studies may be conducted to analyze the evolution of the sweet potato curing and storage barns. Looking at the origin of such structures and the subsequent evolution that sweet potato curing barns have experienced throughout the years could provide an insightful documentation for other researchers.

These structures are invaluable to the collection of vernacular and agricultural architecture that enlightens our visions of the past. Sweet potato curing barns are an important part of our heritage and, as such, deserve to be recognized, documented, and preserved. One step at a time, we can make a difference, ensuring that sweet potato curing barns are preserved for future generations.

## REFERENCES

- Alabama Cooperative Extension System. "Guide to Commercial Sweetpotato Production in Alabama." J.M. Kemble, E.J. Sikora, D. Fields, M.G. Patterson, E. Vinson III. ANR-982. 2006.
- Altman, Landy Boyd, Jr. "Heating Small Sweet Potato Curing and Storage Houses by Electricity." Master's thesis, University of Georgia, 1946.
- Arnold, Benjamin William. *History of the Tobacco Industry in Virginia from 1860 to 1894*. Baltimore: The Johns Hopkins Press, 1897.
- Baker, Oliver E. "Agricultural Regions of North America. Part II – The South." *Economic Geography* 3, no.1 (January 1927): 50-86.
- Boyette, M.D. "The Investigation of Negative Horizontal Ventilation for Long-Term Storage of Sweetpotatoes." *Applied Engineering in Agriculture* 25, no. 5: 701-708.
- Caroline County Board of Supervisors. "Cultural & Historic Resources." In *Caroline County Comprehensive Plan 2030*. 1-28. 2010.
- Carter, Deane G. *Farm Buildings*. New York: John Wiley & Sons, Inc., 1922.

Carter, Deane G. and W.A. Foster. *Farm Buildings*. New York: John Wiley & Sons, Inc., 1941.

Carter, William Clifton. "An Economic Study of Sweet Potato Storage in Georgia."

Master's thesis, University of Georgia, 1955.

"Chipman Potato House." National Register of Historic Places nomination. 1990.

Clemson Agricultural College. South Carolina Agricultural Experiment Station.

"Production Practices in Growing Sweetpotatoes In the Coastal Plain of South Carolina." By Dudley L. Peery. Bulletin 407 (Clemson, South Carolina, 1953).

Dawson, P.R. "Sweetpotatoes for Food and Feed." In *1950-1951 Yearbook of Agriculture*. Edited by Alfred Stefferud, 204-210. Washington, D.C.: Government Printing Office, 1951.

Duggar, J.F. "Sweet Potatoes: Culture and Uses." U.S. Department of Agriculture

Farmers' Bulletin No. 26. Washington, D.C.: Government Printing Office, 1897.

Dukes, P.D., Alfred Jones, and W.J. McLaurin. "The First Fifty Years – Retrospective of Cooperative Sweetpotato Research: Before the Collaborators." In *Fifty Years of Cooperative Sweetpotato Research*, Southern Cooperative Series Bulletin No. 369. edited by A. Jones and J.C. Bouwkamp, 1-15. 1992.

Edmond, J.B. and G.R. Ammerman. *Sweet Potatoes: Production, Processing, Marketing.*

Westport, Connecticut: The Avi Publishing Company, Inc., 1971.

Fitz, James. *Sweet Potato Culture.* New York: Orange Judd Company, 1910.

Flippin, Percy Scott. *The Royal Government in Virginia, 1624-1775.* New York:

Columbia University, 1919.

“Georgia Register of Historic Places: Recognizing and Preserving Our Historic

Properties.” Georgia Department of Natural Resources Historic Preservation

Division [http://gashpo.org/assets/documents/ga\\_reg\\_fs.pdf](http://gashpo.org/assets/documents/ga_reg_fs.pdf) (accessed May 30,

2011).

Griner, Harmon Glynn. “An Economic Analysis of Cooperative Sweet Potato Curing

Plants in Georgia.” Master’s thesis, University of Georgia, 1963.

Grow, Clinton. *Sweet Potato Culture for the Southern Planter.* Seville, Ga.: Crow &

Brogdon, 1915.

Hand, T.E. and K.L. Cockerham. *The Sweet Potato: A Handbook for the Practical*

*Grower.* New York: The MacMillan Company, 1921.

Heeb, Mark. *A Field Guide to Historic House Types in Oglethorpe County, Georgia.*

Historic Oglethorpe County, Inc., 2004.

“Historic Registers.” Virginia Department of Historic Resources.

<http://www.dhr.virginia.gov/registers/register.htm> (accessed May 30, 2011).

Huntrods, Diane. “Sweet Potato Profile.” Agricultural Marketing Resource Center.

[http://www.agmrc.org/commodities\\_\\_products/vegetables/sweet\\_potato\\_profile.cfm](http://www.agmrc.org/commodities__products/vegetables/sweet_potato_profile.cfm)

(accessed March 8, 2011).

Keener, Rufus L. “Control of Heat and Ventilation in Sweet Potato Storage Houses.”

Master’s thesis, University of Georgia, 1933.

Lacy, Howell Edison. “The Control of Heat and Natural Ventilation in Sweet Potato

Storage Houses Equipped with a Tobacco Barn Furnace and Flue.” Master’s

thesis, University of Georgia, 1933.

“Maple Leaf Farm Potato House.” National Register Listings in Maryland.

<http://mht.maryland.gov/nr/NRDetail.aspx?HDID=1198&FROM=NRMapWC.html>

(accessed March 24, 2011).

Miller, Fred E. “Sweet-Potato Growing.” United States Department of Agriculture

Farmer’s Bulletin 999. Washington, D.C.: Government Printing Office, 1919.

National Agricultural Statistics Service. “Farm Numbers: Total Farms, Land in Farms,

Average Farm Size.” [http://www.nass.usda.gov/QuickStats/PullData\\_US.jsp](http://www.nass.usda.gov/QuickStats/PullData_US.jsp)

(accessed March 3, 2011).

Neubauer, Loren W. and Harry B. Walker. *Farm Building Design*. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961.

North Carolina Cooperative Extension Service. "The Postharvest Handling of Sweetpotatoes: With Construction Guidelines for Negative Horizontal Ventilation Curing and Storage Facilities." Boyette, Michael D., Edmond A. Estes, A. Robert Rubin, and Kenneth A. Sorenson (1996).

North Carolina Department of Cultural Resources Office of Archives and History.

"Where the Barns Are." State Historic Preservation Office.

<http://www.hpo.ncdcr.gov/ctb/where.htm> (accessed April 20, 2011).

Odlum, George M. *The Culture of Tobacco*. Salisbury, Southern Rhodesia: British South Africa Company, 1905.

Ridout, Orlando, V. "Work in Progress: The Chesapeake Farm Buildings Survey." *Perspectives in Vernacular Architecture* 1 (1982): 137-149.

Rosa, J.T. Jr. "Sweet Potato Culture in Missouri." Agricultural Experiment Station Circular 103. Columbia, Missouri: University of Missouri, 1921.

"State Census Summary." Virginia Polytechnic Institute <http://pubs.ext.vt.edu/490/490->



700/PDF\_part2.pdf (accessed June 7, 2011).

Southern Foodways Alliance. <http://southernfoodways.com/index.html> (accessed June 14, 2011).

“Sweet Potatoes Crowd Out Cotton.” *Sweet Potato Journal* 1, no.3 (October 1946): 9.

“Sweetpotato Culture and Diseases.” U.S. Department of Agriculture Agriculture Handbook No. 388. Washington, D.C.: Government Printing Office, 1971.

*Sweet Potato Journal* 1, no. 1 (October 1946).

*Sweet Potato Journal* 1, no. 3 (October 1946).

*Sweet Potato Journal* 6, no.1 (April 1948).

Swink, E.T. “Curing and Storing Sweet Potatoes with Electric Heat.” In *C.R.E.A. News Letter*, edited by J.P. Schaenzer (Chicago, June 1938), 1-68.

Swink, E.T. “Electricity for Heating Sweet Potato Curing and Storage Houses.” In *C.R.E.A. News Letter*, edited by J.P. Schaenzer (Chicago, August 1, 1936), 1-30.

Thompson, H.C. *Sweet Potato Production and Handling*. New York: Orange Judd Publishing Company, Inc., 1929.

United States Department of Agriculture. “Storing and Bedding Sweet Potato Stock.”

Fred W. Geise. Bulletin 39 & 40. Norfolk, Virginia: Virginia Truck Experiment

Station, 1922.

United States Department of Agriculture. "Sweetpotato Storage." L.J. Kushman.

Agriculture Handbook No. 358. Washington, D.C.: Government Printing Office,  
1969.

United States Department of Agriculture. "Truck Crop Investigations: Design and

Operation of Commercial Sweet Potato Storage Houses." M.A.R. Kelley. Bulletin  
67. Norfolk, Virginia: Virginia Truck Experiment Station, 1929.

United States Environmental Protection Agency. "Demographics." U.S. Environmental

Protection Agency. <http://www.epa.gov/agriculture/ag101/demographics.html>  
(accessed April 27, 2011).

University of Arizona. College of Agriculture. "The Adobe Sweet Potato Storage House

in Arizona." By F.J. Crider and D.W. Albert. Bulletin No. 106 (Tucson, Arizona,  
1925), 393-410.

University of Arkansas College Extension Service. "Sweet Potato Storage House." Little

Rock, Arkansas: University of Arkansas, 1934.

University of Maryland. "Growing Sweet Potatoes." Maryland Cooperative Extension

Fact Sheet 464.

University of Tennessee. Agricultural Experiment Station. Agricultural Economics and

Rural Sociology Department. *Possibilities of Sweetpotato Production in West*

*Tennessee*. By Atkins, S.W. and C.C. Mantle. Rural Research Series Monograph

No. 168. May 10, 1944.

U.S. Army Installation Management Command (IMCOM). "Fort A.P. Hill History."

<http://www.aphill.army.mil/sites/about/history.asp> (accessed May 3, 2011).

U.S. Bureau of the Census. "Number of Farms: 1992 and 1987."

[http://www.agcensus.usda.gov/Publications/1992/Volume\\_2\\_Publications/Ranking](http://www.agcensus.usda.gov/Publications/1992/Volume_2_Publications/Ranking)

[g/ranking.pdf](http://www.agcensus.usda.gov/Publications/1992/Volume_2_Publications/Ranking) (accessed March 12, 2011).

Wingfield, Marshall. *A History of Caroline County Virginia*. Richmond, Va.: Press of

Trevvet Christain & Co., Inc., 1924.

## APPENDIX

### SWEET POTATO RECIPES

### Sweet Potato Casserole

3 c. mashed sweet potatoes

2 eggs

1 ½ c. sugar

½ c. milk

1 teaspoon vanilla

Combine all ingredients. Pour into casserole dish and sprinkle with topping.

#### *Topping:*

⅓ c. butter

⅔ c. sugar

⅓ c. flour

1 c. chopped pecans

Cut butter into flour and sugar. Add pecans.

Bake at 350° F. for 30 minutes.

### Sweet Potato Wedges

2 ½ lbs. sweet potatoes (approx. 3 large potatoes)

2 egg whites

1 tablespoon cinnamon

Preheat oven to 400° F. Peel and slice each potato into ¼ inch thick ovals, then slice each oval lengthwise into wedges. In a gallon size plastic bag or a large bowl, combine potatoes, egg whites, and cinnamon. Pour coated potatoes onto well-greased baking sheet and spread out in a single layer, leaving a little space between. Place baking sheet on bottom shelf of oven. Bake for 40-45 minutes at 400° F until the wedges are crispy, turning once with a spatula so that they brown evenly. Serve immediately. Serves 4.

### Candied Sweet Potatoes

4 lbs. sweet potatoes, peeled and cut into 1 ½ inch chunks    ¾ teaspoon salt  
½ c. packed brown sugar    1 ½ teaspoon vanilla extract  
4 tablespoons butter    coarsely ground black pepper

Preheat oven to 425° F. Grease a 9 x 13 glass baking dish. Place potatoes in the dish and cover with aluminum foil. Bake for 20 minutes. In a 1 qt. saucepan, combine brown sugar, butter, and salt. Cook over medium heat until mixture comes to a simmer, stirring frequently. Simmer for 1 minute. Remove saucepan from heat; stir in vanilla. Keep warm. Remove baking dish from oven. Spoon brown sugar mixture evenly over potatoes; stir to coat. Bake, uncovered, 40 -45 minutes longer or until tender and glazed, basting with juices in pan halfway through baking. Remove baking dish from oven; let potatoes stand 10 minutes before serving. To serve, sprinkle with black pepper.

## Sweet Potato Pie

2 c. cooked and mashed Georgia sweet potatoes	1 teaspoon vanilla
1 c. sugar	$\frac{3}{4}$ c. milk
2 eggs	1 teaspoon cinnamon
$\frac{1}{4}$ c. melted butter	1 teaspoon allspice
$\frac{1}{4}$ teaspoon salt	1 9-inch pie shell, unbaked

Mix all ingredients well and put into pie shell. Bake at 350° F. for 60 minutes or until knife comes out clean. Serves 6.



### Sweet Potato Scones

2 ¼ c. all purpose flour	¼ teaspoon baking soda
¼ c. packed brown sugar	1/3 c. cold butter
2 teaspoons baking powder	1 egg, lightly whipped
1 ½ teaspoon pumpkin pie spice	1 c. mashed sweet potatoes
¾ teaspoon salt	1/3 c. buttermilk

In a large bowl, combine the flour, brown sugar, baking powder, pumpkin pie spice, salt, and baking soda. Cut in butter until mixture resembles coarse crumbs. In a small bowl, whisk the egg, sweet potatoes, and buttermilk; add to dry ingredients just until moistened. Turn onto lightly floured surface; with lightly floured hands, knead dough 10-12 times. Pat into an 8-inch circle. Cut into 8 wedges. Separate wedges and place 1-inch apart on a baking sheet lightly coated with nonstick cooking spray. Bake at 400° F for 16-21 minutes or until golden brown. Cool on a wire rack for 5 minutes. Serve warm.