Pitt Farmers Seek Improved Tobacco Curing Method

Install New Type Of Controlled Ventilation For Tobacco Barns

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Since that summer's day 97 years ago when Eli and Elisha Slade, two Person county farmers, dried tobacco leaves with a wood fire and thus began the production of flue-cured bright leaf tobacco, farmers from Virginia to Florida have been striving to find better and more economical methods of curing their valuable tobacco leaves for the auction markets.

This year four Pitt county farmers in cooperation with Assistant Agent Sam J. Weeks are carrying out curing experiments which may mean the saving of thousands of dollars to tobacco farmers of this area in the future.

The four farmers, W. Ray McLawhorn of Ayden, J. C. Whitehurst of Ayden and H. D. Moye and L. E. Turnage of the Langs cross roads community, have installed in their tobacco barns a new type of controlled ventilation which is designed to more exactly regulate the moisture in the curing tobacco and cut fuel cost of curing.

Until 1935 wood was the principal fuel used in firing flue-cured tobacco barns, but as the woods of the eastern areas began to diminish, farmers turned to oil and coal burners for tobacco barns.

In 1946, an extensive curing research program was begun by personnel at Oxford agricultural experiment station. The tobacco specialists began their research with a coal stoker-equipped 16 x 16 foot barn which had been properly insulated at the top and on the sides to prevent the escape of heat through the walls and roof of the barn.

In this barn they installed at the top a vent which could be opened and shut to control the ventilation in the barn. By making changes in the vent at the top of the barn, the Oxford experimenters found that the heat in the barn could be controlled according to the moisture content of the tobacco. Data kept on the curing of tobacco in this barn showed that the coal required to cure out the barn was reduced from 2,404 pounds to 820 pounds—a two-thirds decrease in the amount of fuel required to cure a barn of tobacco. The time required for curing the barn of tobacco was reduced from 115½ hours to 95 hours and 5 minutes.

In 1947 further curing experiments were carried on at the station using both oil and coal as fuel, and comparable savings were shown in the barns which were properly insulated and ventilated.

In 1948 the personnel at the Oxford experiment station took their curing ideas to the field on a farm basis, and tested their method of curing on farms in various sections of the state. The farm tests showed continued favorable results in fuel and time savings in curing tobacco.

This year curing demonstrations adapting the principals used in the Oxford experiments are being carried out on a county level in the tobacco producing sections of North Carolina.

The four farmers who are carrying on the experiments in Pitt county each installed the Oxford type ventilator in the ridge of their barns, and two of the farmers insulated the top and sides of their barns. One former insulated only the top of his barn, and the fourth installed only the vent and used no insulation in the barn.

The Oxford type ventilator is constructed by building doors which will open and shut in the ridge of the barn. The doors are operated from the floor of the barn by levers or cables, and can be opened or closed as is needed. By using this type of ventilation, the entire barn may be closed as soon as the danger of the tobacco sponging has passed. With the barn closed tightly after the sponging stage is passed, considerable fuel can be saved in the curing process.

When curing, the ridge vents are left entirely open until the leaves are partially dry. Approximately 35 per cent of the moisture evaporates from the tobacco leaves in the yellowing stage of the curing. As soon as the leaf web is dry the ridge vents are closed and remain closed until the curing has been completed.

In order to keep a constant check of the exact percentage of moisture in the barn, the farmers conducting the experiments use an instrument known as the hygrometer. This consists of a wet-bulb and a dry-bulb thermometer, and a reading at any given time will tell the farmer what per cent of moisture is in the barn. Thus he can properly regulate the vents of the barn.

H. D. Moye installed an Oxford type ventilation in a 20 x 20 foot barn and insulated the sides and top of the barn with fiber glass material. Equipping the barn in this manner cost him approximately $150.

The first three barns of tobacco he cured in this barn averaged 102 hours and 20 minutes per barn. Each barn averaged 923 sticks and the curing has taken an average of 117.4 gallons of oil for each of the three. The fuel consumption has cost an average of $14.08 per barn, or an average cost of $1.52 per 100 sticks for curing the three barns of tobacco. The fuel consumption of the barns averaged 12.7 gallons per 100 sticks of tobacco.

J. C. Whitehurst, who has a farm near Ayden, installed the Oxford type ventilators in a 16 x 16 foot barn and insulated the top and sides of the barn with sisalation type insulation which consists of moisture proof paper sprayed with powdered aluminum. This silver-colored insulation material serves to seal the barn and also to reflect the heat from the oil burners. Whitehurst spent approximately $70 fixing the barn for controlled ventilated curing.

The first four barns averaged 608 sticks of tobacco. the average curing time was 101 hours and 23 minutes per barn, and the average oil consumption has been 90 gallons per barn. The average cost of curing tobacco has been $10.80 per barn for Whitehurst, or an average cost of $1.77 per 100 sticks of tobacco. The insulated barn has taken an average of 14.6 gallons o foil per 100 sticks of tobacco cured.

W. Ray McLawhorn, who also lives near Ayden, installed the ridge ventilator in a 16 x 16 foot barn and insulated the roof and gable ends of his barn with Kimsul type insulation. The body of the barn which was constructed of heavy logs was left uninsulated. The cost of fixing the barn was approximately $30.

The three barns cured in this barn averaged 440 sticks per barn, an average of 81 gallons of oil was required for an average fuel cost of $9.72 per barn. Average curing time was 97 hours and 30 minutes. The average oil consumption for the barn has been 18.2 gallons per 100 sticks at an average cost of $2.20 per hundred sticks.

L. E. Turnage of the Langs cross roads community installed only the Oxford type ventilator in one of his tobacco barns to determine what results could be obtained from curing with the ventilators in an uninsulated barn. Installing the insulators cost Turnage approximately $15.

His first two curings in the barn averaged 98 hours and 30 minutes with an average of 549 sticks of tobacco to the barn. The barn used an average of 105 gallons of oil per curing for an average fuel cost of $12.60 per barn or an average of 19.1 gallons per 100 sticks of tobacco for an average cost of $2.30 per 100 sticks.

Each of the four barns used in the experiments this year in Pitt county have shown an average curing cost considerably under the state-wide average which was secured in the state field survey conducted in 1947 by the personnel of the Oxford experiment station.

Using the same type of equipment which the Pitt county farmers are using, the state average fuel consumption was 22.3 gallons of oil per 100 sticks of tobacco, or an average curing cost of $2.36 per 100 sticks of tobacco.

The average curing cost in the experiments conducted in Pitt county this year range from an average of $1.52 per 100 sticks of tobacco to $2.30 per 100 sticks of tobacco. The overall average for the four ventilated barns in Pitt county this year show a fuel consumption of 16.1 gallons of oil per 100 sticks of tobacco and an average cost of $1.92 per 100 sticks of tobacco.

Good Tobacco Obtained

In addition to cutting the cost of curing operations, the new curing techniques which are being used by these four farmers are showing good results in the product of tobacco taken from the barns after the curing

The farmers have found that tobacco cured by the new techniques is equally as good as the tobacco which is cured in the uninsulated barns with old types of insulators.

Assistant Pitt county agent Sam J. Weeks who helped the farmers fix their barns for the new curing techniques and who has been compiling the information from the new type curing commented, "The results from these demonstrations indicate the curing techniques used by the research workers at the Oxford agricultural experiment station are applicable to farming conditions in Pitt county. It is also shown that considerable amounts of fuel can be saved if farmers will make improvements in their barns.

"It is realized from results of these demonstrations that neither insulation nor ventilation alone is the complete answer to fuel economy, but where the combination has been used good results in fuel savings have been secured."

Weeks pointed out that the most important factors in the curing technique are a tight barn and controlled ventilation through the barn.

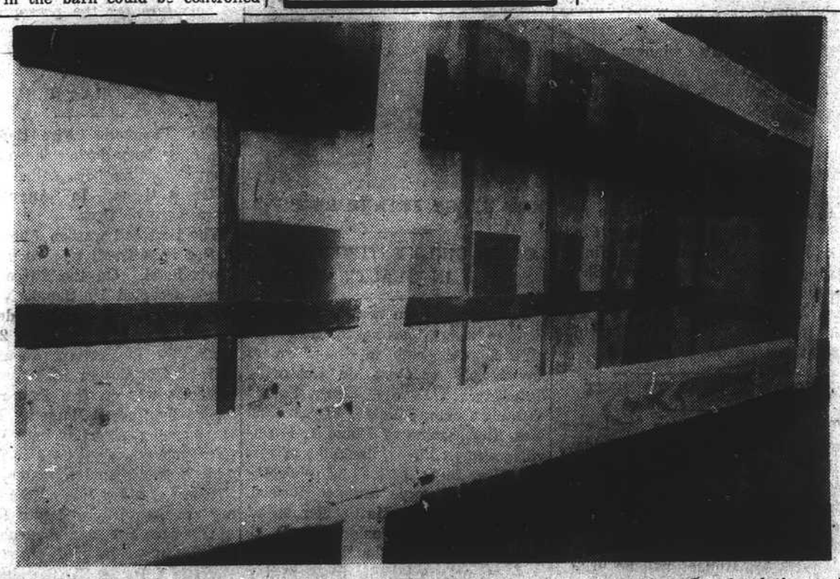
As for the quality of the leaf cured by this process, Weeks said, "Quality of tobacco is just as good from these cures as from other barns on the same farms where other curing methods have been used."

Although many farmers are still skeptical about the new curing techniques, many of the tobacco growers in the various sections of Pitt, and some from surrounding counties, have visited these experimental barns in Pitt where the new methods are employed.

The county farm agent's office has had many inquiries about the new curing techniques, and indications from farmers in this area point to the probability that many tobacco barns will be insulated and equipped with the new type ventilators before the curing season rolls around again.

From the outside this tobacco barn on L. E. Turnage's farm near Langs Crossroads looks about like any other barn in Pitt county but on the inside it has been equipped with new type ventilator which controls the moisture and heat in the barn, and greatly reduces the amount of fuel required to cure a barn of tobacco.

It may look odd from this angle but this ridge ventilator in the top of a tobacco barn is one of the type which is fast changing the method of tobacco curing. The hinged trap door in the top of the barn can be opened and closed from the barn floor by the lever arms attached. Rough insulation material tacked to the top of the barn prevents heat from escaping and speeds up the curing process.



The inside of this tobacco barn on H. D. Moye's farm has been insulated with a fiber-glass insulation material. This material holds the heat in the barn, and the Oxford type ventilator in the top of the barn controls the circulation of the heat in the barn and cuts curing time and the amount of fuel required. The dark pieces of cardboard tacked to the insulation prevent the tobacco sticks from punching holes in the insulation.