

## **HARVEST MANAGEMENT**

### ***Harvest Ripe Tobacco***

Ripe tobacco with medium-heavy body and an orange color is preferred by most buyers. Tobacco must be mature before it can ripen. Ripening is a naturally occurring process and should not be confused with the use of coloring agents.

Nitrogen affects the ripening process more than any other factor. Ripeness does not take place until soil nitrogen has been depleted. Late or excessive applications of nitrogen will delay this process. Dry weather may delay the depletion process of nitrogen, resulting in delayed maturity. Growers have allowed tobacco to stay in the field longer in recent years, thus allowing the natural ripening process to take place.

### **EFFECTS OF THE NUMBER OF HARVESTS ON YIELD AND QUALITY OF FLUE-CURED TOBACCO - PEE DEE REC – 1996-97**

<b>NUMBER OF HARVEST</b>	<b>YIELD (lb/A)</b>	<b>Q. I.</b>	<b>PRICE (\$/lb)</b>	<b>VALUE (\$/A)</b>
1	2853b	69a	183a	5220b
2	3183ab	62b	179b	5698ab
3	3162ab	63b	179b	5662ab
4	3311a	66ab	180b	5960a

Results of a study conducted at Pee Dee REC indicate yield and value per acre significantly increase as the number of harvests increases. However, price per pound and quality index are higher with reduced harvest. This indicates that greater quantities of tobacco are pooled together and thus receive a B grade at the expense of P, X and C grades. The lower dollar per acre should illustrate to producers the ill effects of mixing stalk positions.

Tobacco should be harvested in three or more stalk positions, as this allows buying companies to select tobacco from various stalk positions to make their blends.

In 2006, it was found that 92% of the tobacco was harvested three times or more versus 64% in 2000. Marketing contracts are requiring 3 or more harvests of all tobacco produced under contract.

### ***Drop Eight Leaves***

Other harvest management studies in South Carolina conducted in 2005-2006 found that dropping 8 bottom leaves at topping resulted in approximately a 500 lb yield reduction (2714 lbs versus 2217 lbs). Research at NC State University has shown similar results. NC State research has also indicated prices received for those remaining leaves are not adequate to compensate for the yield loss. Clemson research in 2005-2006 found dropping 4 leaves resulted in a yield loss of about 170 lbs (2714 lbs versus 2546 lbs). This research is consistent with other studies on dropping lower stalk leaves.

### ***“Tip” Production***

Studies to evaluate systems to enhance “tip” production are not definitive. Preliminary studies have shown that plant density, nitrogen rate, topping and even variety may influence “tip” production. Limited data from Clemson University and NC State University illustrate that more mature (riper) tobacco tends to receive “tip” grades.

### **CHEMICAL COLORING AGENTS**

Materials available to aid in coloring tobacco include ETHY-GEN, ethylene cylinders and ethephon. It is estimated that 49 percent of the tobacco acreage was treated with ethephon in the field, and 16 percent used ETHY-GEN or ethylene cylinder in the barn in 2006. Ethylene is injected directly into the barn with the ethylene cylinder; results have been inconsistent.

Coloring agents will not solve problems such as over-fertilization and late-maturing tobacco. One consistent advantage with ethephon is shortened yellowing time, thus quicker barn turnaround.

<b>COLORING AGENTS AVAILABLE</b>		
<b>CHEMICAL</b>	<b>RATE</b>	<b>REMARKS</b>
* Ethephon 6.0 lb/gal  (Prep EC, Super Boll EC, Mature XL EC, Ethephon 6)	1.33-2.67 pt/A	Use when remaining leaves are physiologically mature. Test treat a few plants ahead to determine if chemical will cause yellowing. Mix in 40-60 gal water/A and apply at 40-60 psi pressure so that all leaves are covered. Harvest can begin in 24 hours. However, the REI is 48 hours; workers entering the field(s) should adhere to PPE. Delay in harvesting could result in loss of yield and quality and may cause leaf drop. Treat only the amount that is planned for harvest at the time.
ETHY-GEN	3-6 qt/barn	Use Tobacco Coloring Generator to apply into air flow of curing barn. Follow manufacturer's suggestions. Harvested tobacco should be physiologically mature. Use the higher rate for greener tobacco.
Ethylene gas Cylinder	Follow manufacturer's suggestions	Follow manufacturer's suggestions.

\*Intended for commercial use only.

### **ROOT AND STALK DESTRUCTION**

Early destruction of roots and stalks is essential to aid in control of nine major pests of tobacco: budworms, hornworms, flea beetles, nematodes, brown spot, mosaic, PVY, grasses, and weeds. Early destruction of stalks and roots prohibits these pests from further buildup to plague next year's crop. A thorough job of destruction immediately after final harvest helps old crop residue to decay much quicker while the temperature is higher and the stalks are succulent.

**The following steps are essential:**

- (1) **CUT STALKS.** A rotary mower is best since it will cut and shred the stalks into smaller pieces. A heavy disc will suffice, but a thorough job means more than just leaning stalks over.
- (2) **DISLodge THE ROOT SYSTEM.** If not killed, the root system will continue to grow. Suckers will develop, and nematodes will continue to multiply. Plow out or disc the roots to expose them to the hot, drying sun. If done properly, a heavy disc may be sufficient for steps one and two.
- (3) **BURY ALL CROP RESIDUE.** About 2-3 weeks after step 2, a second disking will help kill any remaining live roots and cover the old crop residue with soil for thorough decomposition.

For the stalk and root destruction program to be most effective, all tobacco fields in the neighborhood must be properly disked. Growers should remind neighbors of standing stalks.