

## Drowning, Wet Feet, & Blow Over

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Tobacco is not native to Kentucky and clues to tobacco's response to soil moisture can be found in areas where tobacco grows wild. Dry areas like the Southwestern United States have the conditions that favor wild tobacco. Soils that stay wet for an extended period are detrimental to tobacco and standing water can cause tobacco to "flop or drown. Leaves on "flopped" tobacco droop toward the ground.



Heavy rainfall can stress a tobacco crop at any stage of growth, creating a poor root system if it occurs early in the season. In some cases, tobacco may have a delayed response and go down only after sunny conditions returned. While drowned tobacco will go down quickly after about 12 hours of standing water, a slower decline is an indication of "wet feet". "Wet feet" is simply a degree of drowning where a plant sustains extensive root damage, but may not flop. An examination of the root system may reveal dead or otherwise damaged roots. A cut through the surface of the stem will expose a vascular system that has brown or dead tissue (picture below left). Tobacco with "wet feet" may recover at night, but droop again during the heat of the day.



Tobacco that recovers may not be a sign that the tobacco will make a substantial recovery, but an indication that a farmer has some time to decide what to do. Tobacco that is not yet topped has

little future and must be cut if anything is to be salvaged. A decision must be made to determine if the return will be worth the expense. It may not be. Tobacco closer to harvest should be harvested fairly quickly to prevent further decline.

A tobacco leaf that is wilted will not transpire at the normal rate. Transpiration is the evaporation of water from the leaf surface that cools the leaf, thereby preventing sunscald. However, if transpiration cannot occur on the wilted tobacco, sunscald may damage the leaf resulting in a green stain as the tobacco cures. Since sunshine will remove the green, a waiting period of at least three days between cutting and housing is necessary in sunscald cases. If no sunscald occurs, no delay is necessary. Too long of a delay in any case may allow rot to develop increasing the chances of more rot once the tobacco is in the barn. Flopped tobacco may also have a leaf breakage problem and a field wilt of a short duration after harvest may be needed to increase leaf retention. Again, rot is an issue and weather conditions need to be considered.

If high winds accompany the rainfall, blow over may occur along with the root damage. Lodged or blown-down tobacco can be difficult to manage. It may be impossible to get spray equipment through the field without damaging some of the tobacco and suckers may start to grow on exposed stalks. Rundown type chemicals including Prime+, Butralin or any of the fatty alcohols alone are not advised since they depend on an upright stalk for complete coverage. Maleic Hydrazide (MH) containing products that have a systemic action are needed to achieve some level of control. Bacterial and fungal rots are common on the underside of the plant near the ground where ventilation and drying are prevented. Hanging tobacco with rot may increase the chance for further damage in the barn.

Occasionally farmers will try to set up blown-down tobacco. Although labor intensive, this may work with favorable weather following the blow over and if root damage is minimal. However, if more wind and rain are forecast, there is no point in setting the tobacco up to have it fall over again. Obviously, economic returns must be considered prior to any attempt to stand tobacco up after a blow over.

