

# Safety and Health in Tobacco Production

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**P**roduction agriculture is a hazardous business. While tobacco production may not be especially hazardous in terms of fatalities compared to other crops, the range of operations required for the production of a crop is quite varied. Tobacco production requires significantly higher amounts of manual labor than other field crops, and thus carries a significant opportunity for accidents and injuries. Tobacco harvesting and stripping operations, in particular, typically require large crews of seasonal labor, and it is important that these workers are aware of potential hazards and use safe working practices. Communication can be difficult with large and varied work crews, especially with immigrant laborers who may not understand English well, so farm operators must put effort into promoting safety.

## **Safety during Tobacco Setting**

Tobacco setting is a relatively safe operation. However, protection from heat and sun and proper hydration are important, and will be discussed below in the section “Harvest Field Safety and Health.”

Research has uncovered several cases of carbon monoxide poisoning during setting operations. Although you may think carbon monoxide poisoning is impossible outdoors, utility tractors with underslung mufflers and exhaust pipes can pump carbon monoxide directly into your workers’ breathing zone. Only use tractors with vertical exhausts during setting.

## **Preharvest Preparation**

The most important safety work you can do on your farm is preseason preparation. The old saying, “An ounce of prevention is worth a pound of cure,” is certainly applicable here. Doing what is necessary to create a safe workplace will help you avoid many in-season injuries that cost time and money.

Prior to hanging tobacco, carefully inspect the rails (and all related structural members) of your barns for cracks and damage, and be sure they are not loose, since broken or loose rails or related structures are a major cause of falls while hanging tobacco. Needless to say, these falls can be extremely serious and can result in broken necks, permanent paralysis, or death. Do

not assume that the rails and related members are in the same condition they were last year. Look them over carefully and repair or replace rails and related members with even a small amount of weakness. Make sure they are securely attached. Look for locations where ladders or steps can be efficiently added to the barn to reduce the amount of climbing around on the rails, especially in very large barns that have become more common in burley tobacco production. To date, no workable personal fall protection systems have been developed for conventional burley tobacco barns, so the condition of the rails and related members are crucial in protecting workers. This cannot be emphasized enough.

Check the barn for bee or wasp nests, especially around and under eaves. Tobacco housing activities can disturb bees and wasps and result in painful stings for workers. Safely remove any known nesting areas. Long-distance, quick knockdown insecticides work well to reduce the chance of stings.

Inspect wagons and other equipment used during harvest. For wagons, inspect the deck itself, look for cracked or broken floorboards or other wooden parts, and make sure that the rear rack is sound and secure. Check the running gear, including rims, tires, and tire pressures. The last thing you want in the middle of harvest is to have a wagon go down from some sort of failure. A breakdown on the road while transporting a load of tobacco is even more dangerous. If you pull more than one wagon at a time, the hitch on the rear of the leading wagon must be in good condition, since it is pulling the wagon behind it. You should have safety hitch pins (pins with retainers so they cannot pop out) for all your wagons. You should have a bright and clean SMV emblem on all wagons, especially the rear-most wagon if pulled in tandem. Don’t leave safety issues to chance.

Before dropping sticks from your Hi-Boy or other machine, make sure the machine itself is in good working condition, especially steering systems and wheels/tires that could lead to a failure or loss of control if they malfunction. Make sure you have safe, comfortable accommodations for the riders. Just because you’ve always done it this way does not mean improvements cannot be made. Does the machine have sturdy, comfortable seats that don’t wobble or do anything else that could lead to a

fall? Are the seats padded for comfort over rough ground? Do they have footrests to support feet and legs? Can they climb on and off safely, with proper places for their feet and handrails to hold on? Falls while mounting and dismounting machinery are important causes of injury and can be very serious. While seatbelts are not recommended for tractors and other machines that do not have roll-over protective structures (ROPS), your riders should be provided with handrails or other places to hold on to while going over rough ground. Are the sticks not only secure but convenient in order to prevent excessive reaching and other awkward movements that can lead to sore muscles or falls? Can the sticks fall on the riders or driver? Be sure they are secured in some manner.

## Harvest Field Safety and Health

Tobacco harvest involves both injury and illness hazards. Hazards like the tobacco knife and spear point at the end of sticks may seem obvious but should be discussed with workers prior to harvest. It never hurts to remind workers that rushing, lack of attention, or horseplay in the field can result in a serious cut or spearing. Eyes are especially vulnerable to the spear and cannot be replaced once they've been destroyed. Stylish safety glasses, including safety sunglasses, are available from online safety equipment suppliers at very reasonable prices and would be a good way to protect workers' eyes.

Heat and sun exposure are other obvious hazards that should be discussed with workers. Wearing hats that cover the ears reduces sun exposure that has resulted, over the long term, in high rates of skin cancer among farmers. Hydration is critical; plenty of water should be available at all times, and workers should be encouraged to take breaks and stay hydrated. In the military, field personnel in hot climates are *ordered* to stay hydrated; it is not an option. Problems that can result from excessive heat include heat rash, which is skin irritation from excessive sweating; heat cramps; heat exhaustion, which has symptoms such as heavy sweating, rapid breathing, and a fast but weak pulse; and heatstroke, a life-threatening illness resulting from very high body temperatures which can have symptoms like dizziness, dry skin, and a rapid but strong pulse. Heatstroke requires immediate emergency care to prevent death.

Green tobacco sickness is a type of nicotine poisoning resulting from contact with wet tobacco, particularly when workers' clothing becomes saturated. Symptoms vary but may include nausea, vomiting, dizziness, headache, weakness, and cramping. Saturated clothing should be removed, the skin washed with soap and water, and dry clothing provided. Although the illness is not life-threatening and will normally resolve itself in a few days, medical care should be provided, since other factors might be involved, especially if symptoms are severe. Preventing green tobacco sickness means waiting until leaves are dry before harvesting or wearing a rain suit when working in wet tobacco.

## Safety in the Tobacco Barn

As discussed previously, rails and related structural members should be inspected prior to hanging tobacco, and any repairs or replacements made. Workers should be required to wear sturdy shoes with good soles that provide traction on the rails. Three points of contact should be maintained when climbing in the

barn, either two feet and one hand or one foot and two hands. Frequent rest breaks are recommended to avoid leg fatigue that may lead to falls while up in the barn. Horseplay should not be allowed in the barn, especially during climbing, hanging sticks, or just waiting for the next load. The same applies when removing the cured tobacco from the barn. Needless to say, the consumption of alcohol or illegal drugs during barn operations must be absolutely prohibited.

## Stripping and Market Preparation

The same precautions for housing tobacco in traditional barns apply when climbing back in the barns to bulk the tobacco for stripping. The hazards involved with traditional manual stripping operations are minimal, but if some of the newer, powered mechanical stripping devices are used, workers need to be protected from moving parts like gears and chains. Hearing protection may be required around powered stalk choppers, which can be very loud. The big tobacco balers that have become much more common have pinch points that workers must be made aware of. Workers operating the hydraulic valves on these balers need to be sure that their coworkers are well clear of the balers when in operation. In general, any time machines are used in these operations, workers using them or working in the area should receive safety training, for their protection and yours.

Stripping may involve dusty conditions. When dust is an issue, good ventilation and dust filtering is important to provide a safe and comfortable working environment and protect the respiratory health of workers. There are two options you can pursue.

In relatively small stripping rooms that tend to be very dusty, dust filtering systems like those used in woodworking shops, with replaceable disposable filters, may be an option. It is important that adequate filtering capacity, good quality filters, and regular filter changes are provided.

A second option is for workers to wear approved dust respirators (also known as dust/mist respirators or particulate respirators). These respirators must be approved by the National Institute for Occupational Safety and Health (NIOSH) and carry a NIOSH approval number. Do not use the inexpensive, non-approved dust masks which look similar but are used only for nuisance dusts like sawdust and are not considered respirators. Typically these masks are very inexpensive, have a single strap, and do not seal well, whereas true dust respirators cost more and have two straps for a tighter fit. The mask must fit tightly around the user's nose and mouth, and cannot be used with beards or facial hair because a seal cannot be obtained.

Local or online safety companies can help you select the appropriate dust respirator, as there are several different ratings available. Typically the appropriate rating would be an N95 respirator, which means it is for non-petroleum mists/dusts (the "N" means Not resistant to petroleum) and is 95% effective when properly fitted, which is an acceptable level of effectiveness. An N99 or N100 dust respirator might be necessary for someone with severe allergies to dust or when working with more harmful dusts and molds. A "P" respirator, such as P95, is designed to be resistant to mists and dusts that contain petroleum products. An "R" respirator is in between, being somewhat resistant to petroleum products. Ask your safety supplier for guidance.

## Roadway Safety

Farmers across the country know that operating farm equipment on public roads is stressful and sometimes dangerous as the general public becomes more removed from farming, and motorists often seem to care more about personal convenience than safe driving or sharing the road. Cell phones and other distractions make the situation even worse. Smart farm operators take precautions to protect themselves as much as possible during roadway transport.

One important aspect of roadway safety is proper lighting and marking. Equipment should be as visible as possible to motorists approaching from the front or rear. Remember that crop materials like tobacco or round bales tend to blend in with the surrounding terrain. All tractors, wagons, and any tall implements that block a motorist's view of the tractor must have bright slow-moving vehicle (SMV) emblems. These emblems must be kept clean and replaced when they fade. High-visibility tape, including bright fluorescent orange for daytime and reflective yellow/amber and red for dusk and nighttime, should be added to the extremities of equipment to help motorists see the width of the equipment and prevent collisions when passing. Lights should be in working condition and used day and night; use your headlights, taillights, and flashing amber lights any time you are on the road, to make equipment more visible. Rotating amber beacons are excellent additions to help attract attention. The only lights that should not be used on the road are work lights that are intended for field use only, since they will blind or impair the vision of approaching motorists.

Another important aspect of roadway safety is maintaining control of equipment. First and foremost, safety hitch pins (as mentioned previously, have retainers to prevent popping out) should always be used to prevent wagons or other trailing equipment from coming unhitched. Do not use homemade hitch pins. Safety chains should be used with pickups, but are also advisable with tractors. Operators should be trained to slow down if wagons are swaying and not trailing properly. Speed must be kept down when navigating blind curves or hills, and the operator should be ready for traffic to appear.

Anyone operating your equipment should be knowledgeable about highway laws and follow all rules of the road. It is best (both for safety and liability reasons) to require anyone who will operate your equipment on public roads to have a driver's license. Examples of important operator skills and courtesies include allowing adequate time to pull across or onto roads, pulling over to allow following traffic to pass, and staying within the lane. Operators must have good judgment to know when it is safe to do any of these things, especially being aware when equipment is too wide to remain in a single lane and may interfere with oncoming traffic or strike roadside obstacles.

Besides the potential for serious injury or death, and interruption of operations, roadway collisions should be avoided because of liability. Even if you are innocent of any wrongdoing, a lawsuit can drown you in paperwork and legal costs, and take away from time needed to manage and operate your farm. Having your equipment involved in a serious collision following failure to obey traffic regulations, or other operator error, or as a result of failing to maintain equipment, exposes you to potentially serious liability.

## Tractor Safety in General

The tractor rollover, or overturn, is the single most common fatal farm-related incident in the nation. For that reason, all tractors should be equipped with roll-over protective structures (ROPS), which are either roll bar-type frames or cabs with rollover protection built into the structure. Seatbelts should be worn when tractors have ROPS, but even if the operator is not wearing a seatbelt, a tractor with a ROPS is much safer than a tractor without ROPS. Tractors used on hillsides should have wider wheel spacings and be weighted properly; be sure to consult your owners manual. The center of gravity must be kept low, especially when using a loader, and the operator should be trained to always turn downhill if the tractor feels unstable.

Hitching injuries can be avoided by making sure the person helping the tractor operator is not between the tractor and implement. Good communication, especially eye contact, should be maintained between the helper and the operator. Helpers should wait until the tractor stops before stepping between the tractor and the implement to hold the wagon tongue or hitch. Tractor operators should also be aware of bystanders, especially children, who should be kept away from farm equipment.

Falls from tractors and resulting run-overs are a common cause of farm fatalities. Extra riders should not be allowed on tractors unless there is a training seat in the cab; such seats are typically found only on newer, larger tractors. If it is necessary to get workers out to a field, use cars or other forms of transportation. Even if taking extra riders on tractors has been a common practice on your farm, it is a disaster waiting to happen and should be stopped.

**NOTE:** This section is intended to provide basic information and cannot cover every possible or potential hazard on your farm. Each farm operator is responsible for inspecting the entire farm, including related structures and equipment, for hazards, and for operating machinery according to manufacturers' specified practices.

A bilingual (English/Spanish) bulletin is available from UK Cooperative Extension: *Introductory Safety Training for Tobacco Workers* (ID-204). This bulletin provides basic training using a farm walk-around approach by the grower with the workers. It covers inspecting tobacco barns; inspecting tobacco wagons; inspecting the Hi-Boy sprayer used for dropping sticks; inspecting tractors before use; tractor operation; safe tractor operation on roads; safe harvesting of tobacco; green tobacco sickness; heat illnesses; and dangers of sun exposure. The publication provides basic introductory training and is not intended to cover all possible hazards on a farm.

Video versions of ID-204 are available in both English and Spanish:

Spanish: <http://video.ca.uky.edu/videos/video/197/>

English: <http://video.ca.uky.edu/videos/video/207/>