

Crop Management Standards

NUTRIENT MANAGEMENT

Critical Standards

- If required in your watershed, comply with nutrient management regulations as applicable.²

Additional Standards

High Risk

- Keep records of all nutrient applications- greenhouse, transplant water, and field (soil and foliar), which includes date of fertilizer application, application timing (pre-plant, side-dressing, transplanting, or foliar), type of fertilizer applied (N-P-K), and rate of application. This includes lime applications.
- It is preferable not to use muriate of potash but if using muriate of potash, application should be made before January 1 of the production year.³

Medium Risk

- Make fertilizer application decisions using soil test results that are no more than three years old
- If using animal manure or litter for fertilizer, have it tested for nutrient content to determine appropriate rates. Guidelines on the use of animal manure in tobacco production can be found in the University of Kentucky Burley Tobacco growers guide⁴.

INTEGRATED PEST MANAGEMENT

Critical Standards

- Keep field/tract records of all agrochemical applications, including in the greenhouse, transplant water and field. This includes:
 - CPA/agrochemical common name⁵
 - Active Ingredient²
 - Application date
 - Application method (transplant water, hand sprayer, overhead sprayer, etc.)
 - Rate
 - Name of Applicator
 - Field name and location
 - EPA Number²
 - REI²

Note: Growers may use a reference sheet such as the “CPA Reference Sheet” found in the GAPC records to record brand name, EPA registration number, active ingredient, and REI to avoid writing this

² See Resources on page 6 in Appendix 2.

³ See Resources on page 6 in Appendix 2.

⁴ See Resources on page 6 in Appendix 2.

⁵ See Resources on page 5 in Appendix 2.

information for each individual application. This reference sheet must be kept with the records of the individual agrochemical applications.

- All agrochemical applications, restricted or non-restricted, should be completed or supervised by a licensed pesticide applicator
- Use only pesticides that have been approved by the EPA for use on tobacco (labeled)². Always refer to your grower contract; some buyers may prohibit use of agrochemical's which are labeled for tobacco.

Additional Standards

High Risk

- Keep field/tract records of all agrochemical applications, including greenhouse, transplant water and in the field. This includes:
 - Pest targeted or reason for application
- Maintain calibration records for current year ⁶
- Maintain agrochemical application records for the previous two growing seasons as well as the current season

Medium Risk

- Have a documented scouting program for pests and record the scouting information by field/tract following GAP standards⁷. Records should include the following:
 - Date of scouting
 - Pests observed
 - Percent of plants affected/infested
 - Crop protection agent applications made by field and date
 - Conduct a follow-up of your pest control practices to determine the effectiveness of the action taken
- Use appropriate methods to clean or sanitize transplant trays.
- Destroy unused seedlings within 30 days after transplanting is completed.
- Destroy crop residues and establish a cover crop within 60 days after harvest.

CROP AND OPERATIONS MANAGEMENT

Critical Standards

- Direct the day to day activities involved in producing the tobacco sold under your name, the name of an associated grower, employee, or the name of the farming operation.
- Obtain a FSA 578 crop report for the current season.
- Whether you produce or purchase your tobacco plants, keep records of transplant/greenhouse seeding dates, varieties and seed lot numbers by field/tract.
- Keep tobacco types (e.g. burley, dark, flue cured, etc.) strictly separated from each other during seeding, curing, and market preparation.
- If tarps are used to cover tobacco during transport, use tarps made of acceptable tarping material (non-plastic) on the side of the tarp in contact with the tobacco.

⁶ See Resources on page 9 in Appendix 2.

⁷ See Example on page 5 in Appendix 2.

- If an enclosed trailer/vehicle is used to transport tobacco to market, ensure the surfaces are free of contaminants. Stock trailers should not be used for tobacco transport.

Additional Standards

High Risk

- Use University recommended rates of MH in sucker control, or follow contract guidelines for MH use.⁸
- Separate tobacco by stalk position and quality to meet contract requirements

Medium Risk

- Use recommended measures to Control weed seed contamination of tobacco⁹
- Keep records of transplanting and topping dates by field/tract
- Select tobacco variety based on, disease resistance, curing characteristics, cured leaf quality, and yield, and maintain records or documentation of sources you used to select your tobacco varieties (examples are: seed company literature, university production guides, buying company recommendations, etc.)¹⁰
- Use only varieties that have been approved by your contracting company(s)

Low Risk

- Keep records of plant and row spacing / plant population maintained by field/tract
- FLUE ONLY: Prior to harvest, mow all field borders/turning areas, and manual removal of pigweed and other weeds of concern from fields

CURING AND BARN MANAGEMENT

Critical Standards

- Have a documented safety program for air cured and fire-cured barns that includes inspection of tier rails and support beams for soundness, inspection of general barn soundness, removal of stored machinery, lumber and other items from barn floors that could enhance injury in falls. Ladders or steps should be installed and maintained to reach tiers.¹¹
- FLUE ONLY: Have barn tests every 3 years and use only indirect fired barns with heat exchangers.

Additional Standards

High Risk

- Have a documented program that allows for traceability of tobacco through curing and delivery.¹²
- AIR AND FIRE ONLY: Record the date that tobacco was placed in the curing structure and the date it was removed.

Medium Risk

- Keep records harvesting dates by field/tract
- Maintain records of the type and number of curing structures or barns

⁸ See Resources on page 61 in Appendix 2.

⁹ See Resources on page 7 in Appendix 2.

¹⁰ See Resources on page 5 in Appendix 2.

¹¹ See Barn Inspection template in GAPC Records (www.gapconnections.com)

¹² See Examples on page 8 in Appendix 2.

- Maintain documentation on the curing structure or barn used for tobacco from each field and tract for traceability purposes
- FLUE ONLY: Use some method or tool to monitor temperature and humidity in the barn¹³. This includes a wet-bulb and a dry-bulb thermometer
- FIRE ONLY: Maintain records of firing procedures in fire cured barns to include the number of firings, fuel used (i.e. slabs, sawdust, etc.)

Low Risk

- AIR AND FIRE ONLY: Records of spacing of sticks in air cured barns/structures
- AIR AND FIRE ONLY: No curing structures more than two tiers high, barns designed such that no worker is more than 12 feet above the barn floor in normal hanging operations
- FIRE ONLY: Monitor temperature in fire cured barns during firing
- FLUE ONLY: Use energy efficient curing systems in flue cured barns (i.e. use automated curing controls to measure temperature and humidity)

NON-TOBACCO RELATED MATERIAL (NTRM)

Market prep: All preparations of tobacco for delivery and sale. This includes all activities surrounding stripping and baling tobacco.

Taint: Unpleasant odor or taste. Potential sources of taint include, wood preservatives, disinfectants, aromatic plant materials, hydrocarbon fuels, or livestock.

Additional Standards

High Risk

- Have at least one trash can in market prep areas. If market prep area is not currently in use, the trash cans that will be used need to be visible.
- Regularly inspect market prep area, remove Non-Tobacco Related Materials (NTRM)¹⁴ and other potential sources of taint that could contaminate the tobacco, keeping records of daily inspection dates when in use. If market prep area is not currently in use, a documented inspection program including an inspection checklist and log of dates needs to be available.

Medium Risk

- Do not use brooms with synthetic bristles in market preparation area.
- Have designated break areas away from market prep area
- Do not have tools with plastic handles in market prep area

Low Risk

- Have a dedicated market prep and baling area with concrete, wood or asphalt floor
- AIR ONLY: Use a slotted stripping table with wire mesh cover or other stripping systems that permit dirt and other NTRM to freely fall out of the tobacco as it is stripped (stripping chains, stripping wheels, etc.)
- FLUE-CURED: Use picking lines during market preparations.
- FLUE-CURED: Use sand reels/leaf tumblers during market preparations.

¹³ See Example on page 9 in Appendix 2.

¹⁴ See Example on page 9 in Appendix 2.

ON-FARM TOBACCO STORAGE

Taint: Unpleasant odor or taste. Potential sources of taint include, wood preservatives, disinfectants, aromatic plant materials, hydrocarbon fuels, or livestock.

Critical Standards

- Maintain a clean, dry tobacco storage area when in use, with no treated wood in contact with tobacco, no storage of pesticides, petroleum products, paint, stains, fertilizers or Styrofoam trays, or other sources of taint that could contaminate the tobacco in storage area.
- Ensure that livestock are excluded from curing and storage structures

Additional Standards

High Risk

- Store baled tobacco on concrete floor, untreated wood (floor or pallets), trailers, wagons or truck beds.

Medium Risk

- Have an enclosed storage area with doors and windows that can be secured, if windows present. Doors and windows can be closed.

Environmental Management Standards

AGROCHEMICAL MANAGEMENT

CRITICAL STANDARDS

- Have a designated, lockable, dry (weather protected) agrochemical storage area with proper signage. If no storage a grower must show receipts from a custom applicator or organic certification.
- Dispose of agrochemical containers by either recycling thru programs or sites designated for pesticide recycling **OR** triple-rinsing and punching or removing lid and taking them to appropriate landfill. Agrochemical containers cannot be burned.
- Properly segregate, store, and recycle hazardous waste including but not limited to residual agrochemicals, fuel, oil, grease, paint, and batteries.
- Maintain copies of labels for all agrochemicals currently being used in tobacco production either on the container in storage, or in farm files. Does not include agrochemicals that are no longer in use and on the farm.
- Maintain SDS sheets for all agrochemicals used in tobacco production
- Ensure that agrochemicals are stored in original manufacturer's containers with labels attached or on file in agrochemical storage room

ADDITIONAL STANDARDS

Medium Risk

- Agrochemical storage with impermeable floor. This includes tubs, bins, containers with impermeable flooring that can hold more than the volume of agrochemical being stored.
- Agrochemical storage designed to retain runoff from spills and leakages¹⁵. This includes tubs, bins, containers with impermeable flooring that can hold more than the volume of agrochemical being stored.
- Mix or transfer agrochemicals in containment areas away from runoff channels
- Ensure that greenhouse float water is properly and legally disposed of

Low Risk

- Maintain an inventory of agrochemical stocks in storage
- Have a designated, fenced or otherwise lockable storage area for empty agrochemical containers that have not been tripled rinsed and punched pending disposal
- Dispose of non-hazardous waste products (i.e. move waste paper, cardboard, plastic (other than pesticide chemicals) to a trash receptacle or recycle container. Burning non-hazardous waste is not acceptable.

¹⁵ Resources on page 10 in Appendix 2.

SOIL AND WATER MANAGEMENT

CRITICAL STANDARDS

- Comply with irrigation and water extraction laws and regulations
- As required by law, maintain a conservation management plan approved by the soil and water conservation district for fields that are considered highly erodible land

Additional STANDARDS

High Risk

- Use vegetated buffers between field and streams or lakes (minimum buffer distance is 33 feet)

Medium Risk

- Use cover crop or fall seeded crop following tobacco harvest
- Use crops planted with conservation tillage practices or sod as rotation crops on highly erodible land if applicable
- Keep records of dates and amounts of irrigation water and maintain records of rainfall amounts during the growing season.¹⁶

Low Risk

- In a single field do not plant tobacco annually. Instead, use a rotation of no more than two years of tobacco followed by at least two years in other non-solanaceae crops (Solanaceae crops include tomatoes, eggplant, and peppers).¹⁷
- Use conservation tillage practices in tobacco production (i.e. minimum or reduced tillage, strip tillage, no tillage)
- Use crops planted with conservation tillage practices or sod as rotation crops on all land (carbon sequestration by increasing soil organic matter)
- Maintain field borders/buffer strips along lower edges of fields and beside field ditches and drainage ways (minimum buffer distance is 33 feet)
- If you use irrigation, then use proper irrigation management methods, which include:
 - Maintain equipment and piping to prevent leakage
 - Maintain runoff water

¹⁶ See Resources on page 6 in Appendix 2

¹⁷ See Resources on page 5 in Appendix 2.