

Deep Tillage

Virginia Conservation Practice Job Sheet

324



Definition

Performing tillage operations below the normal tillage depth to modify adverse physical or chemical properties of a soil.

Conditions Where Practice Applies

This practice applies to land having adverse soil conditions which inhibit plant growth, such as:

- Compacted layers in the root zone formed by field operations.
- Naturally-occurring restrictive layers in the root zone such as cemented hardpans (duripan).
- Overwash or deposits from wind and water erosion or flooding.

This practice does not apply to normal tillage practices used to prepare a seedbed. It includes tillage operations commonly referred to as deep plowing, in-row subsoiling, strip-tillage, paratilling, subsoiling, ripping, or row-till, but only when these operations are performed at an altered depth or in a manner that otherwise differs from routine seedbed preparation.

General Criteria Applicable to All Purposes

Perform deep tillage operations when soil moisture is less than 30-50 percent of field capacity, according to the “feel test” or other acceptable method, at the maximum depth to which the tillage will be done.

Additional Criteria to Fracture Restrictive Soil Layers

The depth of tillage shall be a minimum of one inch deeper than the depth of the restrictive layer. Tillage depth should be set carefully and periodically checked to maintain this working depth.

Complete fracturing of the restrictive layer is not required. The fractured zone, as a minimum, shall be sufficient to permit root penetration below the restrictive soil layer. For row crops in particular, the fractured zone does not need to extend to the row middles and may be limited to the area near the rows.

Additional Criteria to Bury or Mix Deposits from Erosion or Flood Overwash

Deep tillage to invert and mix soil deposits shall be to the depth needed to meet planning objective.

In all cases, soil deposits shall be mixed at least two times (2X) the depth of the soil deposit.

NOTE: This summary does not address all requirements and considerations in the VA Deep Tillage Conservation Practice Standard (VA-324). Consult the Conservation Practice Standard for further details.

General Information

Client: _____	County: _____
Field Office: _____	Contract #: _____
Farm #: _____	Tract #: _____
Field # and acreage: _____	

Client's Purpose(s) (check all that apply)

Note: All purposes below trigger additional requirements to include in Specifications below – see page 1.

- Fracture restrictive soil layers.
- Bury or mix soil deposits from wind or water erosion or flood overwash.

Practice Specifications

Follow all specifications and recommendations below for practice installation & implementation.

General Criteria Required by Standard in All Cases

- Perform deep tillage operations when soil moisture is less than 30-50% of field capacity according to "feel test" at maximum depth to which tillage will be done.

Additional Criteria Required by Standard Depending on Client's Purpose(s)

Write in applicable additional criteria based on purposes selected above; see page 1 for summary or Standard for complete details.

Planned Crop Rotation and Deep Tillage Frequency

Consider using and attaching Cropping System Description & Evaluation (D&E) Specification Sheets to describe crop rotation and deep tillage frequency (see VA NRCS Technical Note for Cropping System D&E Spec Sheet document).

Additional Site-specific Recommendations

Include additional recommendations for conduct of deep tillage operations (timing, method, depth), diagnostic activities before and after tillage (probing for compaction, etc.), and complementary activities (controlled traffic, adding deep rooted crops, etc.)

Operation & Maintenance (O&M)

Carry out all of the following actions to ensure that the planned system functions as intended after initial installation & implementation.

Minimum O&M Requirements:

- 1. Evaluate effectiveness of deep tillage operation with respect to relevant purpose.
- 2. Adjust plan if needed and reapply deep tillage when necessary.

Additional O&M Recommendations

Provide any additional practical guidance for actions to ensure the long-term effectiveness of practice.

Planner Certification

The Deep Tillage practice planned in this job sheet fulfills minimum requirements of Virginia NRCS Conservation Practice Standard 324.

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Signature Title Date

Certification of Practice Completion

The Deep Tillage practice planned in this job sheet has been completed and maintained according to Virginia NRCS specifications (indicate in Practice Specifications any changes to planned activities and acreage).

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Signature Title Date

