



WNRCD

Educational Series



Agriculture Series

Soil Aeration

Aerator use is considered a form of ***Conservation Tillage***, a Best Management Practice

Conservation tillage includes/is defined as, practices that keep crop and plant residues on the soil to prevent erosion and runoff.

An aerator creates a vertical slit in the soil that opens up the soil for better water and nutrient infiltration and decreases compaction at the surface, at least on a temporary basis. An aerator can break down thatch, a common cause of runoff in dairy pastures.



Benefits

Potential to Improve Soil Health

Healthy soils absorb water and nutrients and produce higher quality feed and crops. Aeration has been used to restore soil to a healthier balance of mineral soil, organic matter, air and water.

Potential to Reduce Compaction

Compaction makes both wet and dry conditions more severe and increases runoff.

Potential to Improve Water Quality from Field Runoff

The aerator increases infiltration into the soil, decreases compaction of the soil and prevents excess nutrient runoff. The aerator leaves crop residue on the surface of the soil, retaining organic matter and preventing soil erosion.



This document and scientific research were part of a grant from NESARE to the WNRCD to conduct ongoing research into the effectiveness of the BMP and to create outreach materials

For more valuable information on using soil aeration as a best management practice to protect water quality, please visit the WNRCD website at: www.winooskinrcd.org



Winooski Natural Resources Conservation District
617 Comstock Rd, Suite 1, Berlin, VT 05602
(802) 828-4493 x110 info@winooskinrcd.org
www.winooskinrcd.org
www.winooskinrcd.wix.com/watershed-notes-blog

How it is used

Farmers can plan to use an aerator before manure application to reduce nutrient runoff and increase manure absorption into fields. Farmers also aerate fields to break-up sod-bound fields and pastures, loosening the soil before cover crop planting and before frost seeding.



How To Access an Aerator

- The Winooski Natural Resources Conservation District (Chittenden, Washington and Orange counties) has a 11 ¼ foot Gen Till Model 1200s aerator available for rent
Call 802-288-8155 Ext 104 or email info@winooskinrcd.org
- The University of Vermont Extension has an Aerway model available for rent
Call 802-524-6501 or email heather.darby@uvm.edu

Frequently Asked Questions

Can I aerate any kind of soil? Yes, but aeration will be most effective on heavier (clay) soils rather than sandy soils.

What about rocks in my field? It is best to avoid aerating very rocky fields, this could damage tines. Aerators have been known to pull up rocks too.

How do I transport the unit? For the smaller aerators (11 ¼ ft and under), a ½ ton pick-up with a standard tow hitch will work, the larger aerators, you will need a ¾ ton pick-up truck.

What kind of tractor is needed? A good guide is roughly 10hp per foot of unit but this depends on the soil conditions and the topography of the fields. The tractor needs to have hydraulic hoses to raise and lower the unit.

The Winooski Natural Resources Conservation District is one of 14 conservation districts throughout Vermont. It encompasses all of Chittenden and Washington County as well as parts of Orange County (Orange, Williamstown and Washington). The District relies on grants and individual donations to complete its conservation work. The WNRCD focuses its resources on completing conservation projects within the areas of agricultural assistance, forestland enhancement, urban conservation and watershed stewardship. For more information on Conservation initiatives within the District, please visit: www.winooskinrcd.org



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