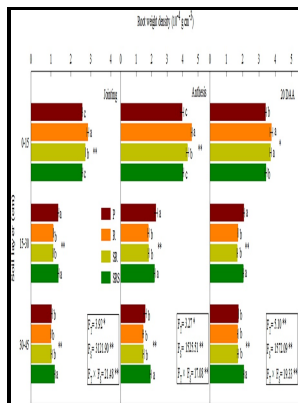


# Measuring the response of conifer seedlings to soil compaction stress

U.S. Dept. of Agriculture, Forest Service, Northeastern Forest Experiment Station - The impact of soil compaction on soil aeration and fine root density of *Quercus palustris*



Description: -

- Soil stabilization

Conifers -- United StatesMeasuring the response of conifer seedlings to soil compaction stress

- Research paper NE -- 509Measuring the response of conifer seedlings to soil compaction stress

Notes: Bibliography: p. 4

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## Soil Compaction and Organic Matter Affect Conifer Seedling Nonmycorrhizal and Ectomycorrhizal Root Tip Abundance and Diversity

Research shows that increased vehicle traffic delays seedling emergence and that the emergence rate is more variable Figure 12.

## Soil Compaction and Organic Matter Affect Conifer Seedling Nonmycorrhizal and Ectomycorrhizal Root Tip Abundance and Diversity

Through forestry research, cooperation with the States and private forest owners, and management of the National Forests and National Grasslands, it strives—as directed by Congress—to provide increasingly greater service to a growing Nation. This is exacerbated by chemical instability 'gypsum responsiveness' and can be minimised by inclusion of gypsum application as well as deep ripping.

## The impact of soil compaction on soil aeration and fine root density of *Quercus palustris*

This decreases bicarbonate solubility when soils are wet in the wheel tracks, also helping to decrease chlorosis. Surface application of mulches and biosolids affect orchard soil properties after 7 years. As soil compaction increases beyond optimum, yields begin to decline.

## The science of soil compaction

A linear fit regression was used as a conservative estimate to predict future sprout clump radii. In a related study in the same orchard, mulching increased tree growth and fruit size, but not yield or active carbon after three years Granatstein et al.

## Effects of Sprout Competition and Soil Compaction on the Growth of Redwood Seedlings

For example, a resilient plant decreases its stomatal conductance  $g_s$  as a response to drought stress, but it is able to return to its previous  $g_s$  levels

after the stress ceases. Results This aspect was investigated in a conifer, maritime pine *Pinus pinaster* Ait.

### **Resistance and resilience of the forest soil microbiome to logging**

A commercial farm was identified in Trumansburg, NY where 0.

### **Factors Affecting Compaction of Soil**

Furthermore, by avoiding the top 3 cm, we also excluded the litter material that was constantly falling into the tire imprint along the skid trails. Thanks to Bob Meurisse, Jim Trappe, Dave Perry, and Susan Stafford for review of the manuscript. Does the combined application of organic and mineral nutrient sources influence maize productivity? Plant cuticles shine: advances in wax biosynthesis and export.

### **Using Cultural Practices to Manage Soil Compaction and its Interaction with Soil**

Table 2: Approximate axle loads for field equipment

Field equipment	Axle load
Slurry tanker 4,200 gallons	10-12 tons per axle
Slurry tanker 7,200 gallons	17-18 tons per axle
Class 9 combine 590 hp, 360 bushel capacity	20 tons per axle
12-row combine full with head	24 tons per axle
Grain cart 720 bushels, full, 1 axle	22 tons per axle
Grain cart 1,200 bushels, full, 1 axle	35-40 tons per axle
Grain cart 2,000 bushels, full, 1 axle	70-76 tons per axle
Terra-Gator rear axle	12-18 tons per axle
4WD tractor 200 hp, front axle	7.

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