



Vertical Mulching's Impact On Soil and Water Conservation

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Vertical mulching is premised on the idea that surface runoff descending the slope falls into ditches, where it then infiltrates into the surrounding soil. While vertical mulching does not prevent surface runoff from forming in the regions between the ditches, it significantly decreases the quantity of runoff that exits a field, sometimes to nil, by collecting most or all of it in the ditches. At the same time, soil erosion is reduced. Much or all of the eroded material is trapped in the ditches as long as there is still any erosion, preventing it from becoming a problem downstream. Infiltration from the ditches also boosts the water supply for plants and recharges the groundwater.

Introduction

Spain and McCune (1956) developed a new form of mulching technique called "vertical mulching" to minimize runoff by boosting infiltration for a longer period. It involves vertically inserting stuffed plant residues into sub-soiler markings to maintain the slots open and functional for a longer period. Surface water travels downward into the subsoil, as well as from the ground surface, following the things introduced into the tillage mark. Depending on the number of crop wastes applied, a network of open slots develops on the ground surface throughout this procedure. It's also important to keep in mind that the slots should not be covered by the soil during ploughing. It is a soil treatment that is performed near a tree's root system to enhance the root function and health of the tree by venting the compacted soil, improving the soil's water retention power, advancing the soil's infiltration capacity, and providing nutrients to the soil. It is done by digging 30 cm deep and 15 cm broad trenches over the hill at 2 to 4 m intervals and filling them with organic materials such as grasses, straws, and stubbles.

Significance of Vertical mulching

Soil structure deterioration, soil compaction below the arable layer, and reduced micro porosity have all resulted from intensive soil mobilization in the traditional tillage regime. Reduced soil water

