



# ATTS Group

## Site preparation for successful tree planting

*By Toso Bozic*

Either you plant trees for shelterbelts, windbreaks, eco-buffers, or afforestation proper site preparation is essential for the successful tree establishment. Tree seedlings require four basic elements to grow: water, nutrients, sunlight, and space. Site preparation refers to the process of modifying and improving the physical and chemical properties of the soil to create favorable conditions for tree establishment and growth. It involves a range of practices aimed at enhancing soil fertility, structure, moisture retention, and aeration while minimizing competition from weeds and other undesirable vegetation.

Prior site preparation thoughtful planning and [site assessment](#) conducting a thorough site assessment is essential to evaluate environmental conditions and identify potential constraints. Key factors to consider include soil characteristics (texture, pH, fertility), topography (slope, aspect), hydrology (drainage patterns, water availability), climate (temperature, precipitation, wind speed), and existing vegetation.

Soil preparation is a fundamental step in site preparation for tree planting. Soil preparation techniques aim to improve soil structure, fertility, and water retention capacity, creating an optimal growing environment for tree seedlings. Common soil preparation techniques include:

1. Mechanical tillage involves using equipment till soil and to break up compacted soil, incorporate organic matter, and promote root penetration. Depending on site conditions, tillage depth and intensity may vary to achieve desired soil loosening and aeration.
2. Soil compaction is one of the key factors for tree mortality as it can restrict root growth and water infiltration, impeding tree establishment and growth. Soil decompaction techniques such as subsoiling, deep ripping, or aerating break up compacted layers, improve soil structure, and promote root development.
3. Poor drainage can lead to waterlogging, root suffocation, and tree mortality. Drainage improvement measures can help redirect excess water away from planting sites, preventing waterlogged conditions, and promoting healthy root growth.
4. Reduce or eliminate weed competition is one main goal of site preparation. Weeds can inhibit tree growth and establishment by competing for water, nutrients, and light. Weed control methods such as herbicide application, mechanical removal, mulching, or cover cropping help suppress weed growth, reduce competition, and create favorable conditions for tree seedlings.
5. Adding organic matter maybe required in certain soil to improve soil fertility, enhances water retention, and promotes microbial activity. Organic matter increases soil organic carbon content, provides essential nutrients for tree growth, and enhances soil structure, porosity, and aggregation.



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To avoid high tree planting mortality, site preparation is a fundamental aspect of successful tree planting. By addressing site-specific factors such as soil conditions, drainage, weed competition, and species selection, site preparation techniques create favorable conditions for young tree establishment, growth, and thriving.



Pictures: Site preparation with plastic mulch installed ( L ); Strip site preparation ( C ) herbicide site preparation ( R )

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