

Irrigation of Newly Planted Trees

Robert E. Schutzki

Department of Horticulture

Soil balls of balled and burlapped nursery stock often contain different textured soils from those at landscape sites. The same is true for trees transplanted by mechanical tree spades. Current planting technique has focused on root regeneration and planting backfill as a major factor in successful establishment. Little attention has addressed problems associated with textural differences between the plant soil ball and existing site conditions. The lack of soil moisture movement across the plant ball/backfill interface often results in plant stress during establishment. The diversity in soil types also results in uneven root ball wetting during irrigation. The consequence is a deterioration of plant quality during the initial establishment, which could have long term effect on the overall quality of the landscape.

Over the past several years, we have investigated the deterioration of plant quality on many landscape sites throughout Michigan. The problems have generally occurred on plants within four years of installation. Using a soil probe, we have extracted soil cores from the plant soil ball, the planting backfill and the undisturbed site. In many cases the plant soil ball was extremely dry when compared to planting backfill and undisturbed site conditions. Irrigation was maintaining adequate soil moisture in the planting backfill, however, filtration down or movement of soil water into the ball or spaded plug was not occurring.

Nursery stock depends on the moisture within the soil ball or plug during initial establishment. It is extremely important that the monitoring of newly planted stock include examination of the conditions within the root ball/plug.

The problems of discontinuity between soils cannot be overcome simply by increasing the duration of irrigation. Irrigation method must account for and accommodate soil conditions within the soil ball or plug. The maintenance of tree soil ball moisture during initial establishment will aid in the future development of the landscape.