TRAFFIC EFFECTS ON TURFGRASSES UNDER RESTRICTED LIGHT (PAR)

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Photosynthetically active radiation (PAR) is measured as micromols per second per square meter (mMol s\(^{-1}\)m\(^2\)).

The Light Intensity Turf Evaluation (LITE) facility has been designed to submit turf to four PAR regimes—full sun, with light restricting canopies (shade) of 33%, 54%, and 78%—under simulated sports traffic, with remote data acquisition sensors collecting data on PAR, air temperature, and relative humidity. Bonsai tall fescue (*Festuca arundinacea*), Manhattan II perennial ryegrass (*Lolium perenne*), Manhattan II mixed with Jasper creeping red fescue (*Festuca rubra* L.), and El Toro zoysiagrass (*Zoysia Japonica* L.) were evaluated. Traffic treatments were applied with a Brinkman Traffic Simulator.

El Toro zoysiagrass showed good traffic tolerance under full sun and severe light restrictions, but did not recover readily when light was restricted. Perennial ryegrass did perform with PAR restrictions of 54%. Indications are that perennial ryegrass could provide a sports turf cover with about 8 hours of 500 to 600 mMols s\(^{-1}\)m\(^2\) PAR.