

The Turf of Tomorrow

Research and development lead to improved surfaces

From the first full-size synthetic turf surface installed in Providence, R.I., in 1964 to the high-tech hybrid systems of today, sports surfaces have evolved to accommodate increased use demands and greater expectations from the athletes on the field. The amazing advances in turf—both natural and synthetic—are the result of thousands of hours of research, many years of development and the commitment of manufacturers, breeders and scientists to providing the safest fields possible.

Center for Sports Surface Research

The Center for Sports Surface Research at Penn State (<http://cropsoil.psu.edu/ssrc>) is an intercollege program managed within the College of Agricultural Sciences' Department of Crop and Soil Sciences. Created through a partnership of Penn State and Field Turf, the center is the first facility dedicated to sports surface research, and focuses on synthetic turf, running tracks and indoor surfaces. A variety of studies have been conducted at the center, focusing on a variety of synthetic turf topics, including regulating surface temperature, snow removal techniques, environmental

impact and the efficacy of ultraviolet light in eliminating *Staphylococcus aureus* from turf surfaces.

Currently the center is conducting research on upright fiber wear resistance in slit-film fiber fields. Once complete, the data will be gathered in an online database. If you are installing a new field and would like to be considered for the study, visit <http://cropsoil.psu.edu/ssrc/fibertest> to learn more.

University of Tennessee Center for Athletic Field Safety (CAFS)

The University of Tennessee (www.turf.tennessee.edu) and AstroTurf partnered to develop CAFS, a collaborative effort focusing on turfgrass research, as well as biomechanics and human kinetics. UT professors and graduate students also work with the Southern Impact Testing Lab and the UT Department of Kinesiology, Recreation and Sport Studies to study athlete to surface interactions with an emphasis on improving athlete performance while lessening potential injuries. The outdoor research facility includes 60 small-scale athletic research fields constructed from

a variety of playing surfaces. Eight 50-yard-long combined fields (bermudagrass, Kentucky bluegrass and six synthetic fields) for human test subject research have also been constructed.

John Sorochan, Ph.D., co-director of the center, says, "The CAFS AstroTurf project is a one-of-a-kind facility and a minimum 10-year and more than \$3.4 million dollar commitment dedicated to researching the performance and safety of natural and synthetic turf surfaces used on athletic fields. The goal of the AstroTurf project is to improve athletic performance while reducing injuries for all levels of play."

Some of the current projects underway or anticipated to begin in 2012 include determining optimal bermudagrass variety and mowing heights for athletic fields; human test subject performance utilizing different cleat types on synthetic turf; traction performance on different perennial ryegrass overseeding rates, mowing heights and surface moisture levels; and construction and management practices for reducing surface temperatures on synthetic turf athletic fields.



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