

SYMPOSIUM TACKLES FIELD-RELATED INJURIES

Both natural and artificial turf were on trial in Phoenix, AZ, in December, but there wasn't a lawyer or judge in the room. Instead of a court trial, it was a voluntary, first-time effort by the sports turf industry to set standards for construction and maintenance sponsored by the American Society of Testing Materials (ASTM).

Nevertheless, the testimony by experts from three countries was taken very seriously, because everyone in the room knew that someday the information presented could be used in a real trial on injury liability.

"It's time for us to be very definitive about what causes injuries on and around sports facilities," warned Art Mittelstaedt of Ward Associates, Bohemia, NY. "We need to keep track of where injuries occur and set guidelines to prevent similar injuries in the future."

According to the the National Collegiate Athletic Association's R. Dick, between 11 and 34 percent of all reported NCAA injuries since 1982 have been turf-related. Dick also reported that female athletes suffered significantly more turf-related injuries than their male counterparts. Surprisingly, only seven percent of serious injuries in football are turf-related, whereas the percentage climbs to 20 percent in softball, Dick reported.

"It is the recreation athlete that we have to worry about most," explained Bud Cosgrove, deputy park commissioner for Nassau County, NY.

"Too often, league organizers put their best players on their best fields, when it is the poorly conditioned, poorly trained recreation athlete that needs the extra protection," stated Cosgrove. The growing popularity of softball has placed tremendous stress on park facilities, he added. Nassau County parks reported 97 serious injuries in 17,000 softball games in 1988. Field maintenance and design were just two of eight factors Cosgrove blamed for the injuries.

He stressed that all fields should have comprehensive maintenance standards, carried out by trained staff who document their work. "If someone gets injured, and you cannot produce a plan and maintenance documents, you're in trouble."

One of the major arguments ASTM is trying to address is the frequency of injuries on artificial compared to natural turf.

Dr. B. Nigg of the University of Calgary in Alberta, Canada, has reviewed existing literature on injuries on both football and soccer fields. He reported that there have been more "not severe" injuries on artificial than natural. However, the data does not support a significantly greater number of

severe injuries on artificial turf. While the number of severe knee and ankle injuries was slightly higher on artificial, the number of other types of severe injuries was relatively the same for both surfaces.

NCAA's injury-surveillance statistics reveal that since 1986 there has been no significant difference in injuries overall between the two surfaces. However, they do show that running backs are injured more frequently on artificial turf, while linebackers are hurt more frequently on natural turf.

A similar study conducted by the University of Utah indicated that head, hand, foot and neck injuries were more frequent on natural turf. But, knee, ankle and shoulder injuries were more common on artificial turf. Stephen Crane, who assisted in the study, reported that even though the total number of injuries was approximately the same for both surfaces, more season-ending injuries happened on artificial turf.

The Sports Turf Research Institute in Bingley, England, has developed a series of tests to determine standards for both natural and artificial turf. P. M. Canaway from the institute described the tests STRI uses to place fields into one of three quality categories.

Instruments have been developed to gauge traction, hardness, ball roll and ball



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bounce. Standard limits have been set for each. If a field meets optimum standards, it is classified type A. If it meets acceptable limits, it is classified type B. Fields that fail to meet these standards are listed as type C, and steps are recommended to improve them.

The traction test utilizes a flat sole plate with cleats. The amount of force necessary to turn the plate is measured with a torque wrench. Canaway says a reading of between 20 and 25 Newton meters is the standard for natural turf.

The impact test measures hardness with an accelerometer and computer. The device, called a Clegg Impact Soil Tester, is currently being evaluated by Dr. Don Waddington at Pennsylvania State University and John Rogers at Michigan State University. STRI has determined that a range of 20 to 80 Gs (the force of gravity) is preferable, while ten to 100 Gs is acceptable.

Canaway added that a ball dropped onto turf should bounce back 20 to 50 percent. The roll test uses an inclined ramp. The distance the ball travels on the turf after it rolls down the ramp is measured. This device resembles the Stimpmeter which is used to measure the speed of golf greens. The fastest natural turf surfaces have about the same roll as the slowest artificial surfaces.

The traction of artificial turf is currently measured with a device called a force platform, according to G. Valiant of Nike in

Beaverton, OR. The company designs shoes to provide the appropriate amount of traction on artificial turf.

Valiant explained that two different types of traction must be considered. The first is the amount of grip the shoe provides when the athlete accelerates or stops. The second is its grip when an athlete turns or rotates his foot. "Players want traction, but they also want to be able to turn safely," he stated. "That involves some compromise."

During the symposium, representatives from AstroTurf Industries and Omniturf outlined safety advances they have made while Dr. William Daniel described the benefits of

Prescription Athletic Turf (PAT). Dr. James Beard from Texas A&M University reported on mixing interlocking plastic-mesh elements in athletic turf root zones. Steve Cockerham from the University of California at Riverside gave an overview of his research with turfgrass varieties exposed to a wear machine.

There was no judge, no jury nor verdict at the symposium... but the message was clear: There is a growing concern about the safety of sports fields. Standards will be necessary in the future. As Beard remarked at the end of the symposium, "It's time to stop slinging mud at each other and begin to develop the safest products possible."

SAN DIEGO HIRES WIGHTMAN FROM DENVER

Bill Wilson, stadium manager of San Diego Jack Murphy Stadium, announced in December that Steve Wightman has been hired as superintendent of grounds. Wightman was the turf manager for Denver Mile High Stadium and is the immediate past president of the Sports Turf Managers Association.

Jack Murphy Stadium is one of the busiest natural turf stadiums in the country. It is the site of the Holiday Bowl and the home of the San Diego Padres, Chargers and San

Diego State Aztecs. The stadium hosted Super Bowl XXII last January.

Wightman, who has a degree in business management, started his turf career with the Denver Parks Department as director of athletic field maintenance. For the last ten years he managed the Prescription Athletic Turf field at Mile High Stadium and is considered one of the most knowledgeable managers of the PAT System. The Denver field is one of the few in the world with field heating.

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