

High Performance Natural Grass Sports Turf For Small Schools and Colleges

By Chris des Garennes



Now schools challenged by tight budgets can afford excellent natural turf playing fields, thanks to a new aeration technique that improves field performance even in adverse weather conditions. Lebanon Valley College shows how it's done.

With a growing level of interest in synthetic turf fields, colleges and high schools must weigh the costs with the benefits. Synthetic turf fields have a place, to be sure, where multiple events are planned on one field. Excessive use would damage natural grass to the point of non-survival. While synthetic fields can host hundreds of events with minimum maintenance, the initial investment puts them out of reach for many small colleges and high schools.

So, is there an economical way to improve the long term health of natural grass fields, and is there a way to save money compared to sod replacement or an investment in a synthetic field? For savvy sports turf managers, the answer is an emphatic "yes!" DryJect®, a unique aeration and injection service, coupled with Profile® porous ceramics, seem to provide a powerful combination to promote high-performance natural grass fields.

Everyone from the athletic director to the team mascot has a stake in a sports field that performs well, especially in adverse conditions. Community and alumni pride, recruitment appeal and player safety are just some of the reasons driving technical and soil science advances in improving natural grass playing fields.

Lebanon Valley College in Annville, PA, near Hershey, enrolls nearly 1800, and has a full

array of practice, intramural and event playing fields. Kevin Yeiser is the sports turf Manager at Lebanon Valley, but sees himself as something as a newcomer when it comes to the playing surface at Arnold Field, venue for inter-collegiate competition at the college.

When Arnold Field was built in the mid 1980s, the contractor used drainage techniques used for decades by farmers in the fields on the low lying valley, where the water table is high, and where drainage can be a problem in rainy seasons.

Terra cotta clay tiles shaped like a "U" were laid in overlapping fashion in a line and buried eighteen inches deep on eight foot centers. Fully buried in the soil, the tiles form a low-pressure channel that helps to draw water down and away from the field.

David Minner, Iowa State Professor in the Department of Horticulture, and well-known sports turf authority, suggested to Yeiser that the clay drainage tiles theoretically help drain away the subsurface water table as well as any moisture penetrating the field's soil profile to that depth.

In spite of that novel drainage system, extreme conditions would pose a true test of the natural grass field.

"In 2009 we had back to back football games. It rained during the first game and the turf got saturated. Then before the next game the following week we had another 2 to 3 inches. The turf was flying like pieces of carpet, there were puddles everywhere, and the players were standing in mud. Not good," commented Yeiser.

Yeiser and his small crew follow a good aeration routine, using 3/4 inch tines to aerate at the end of the football season in November or December, then again after lacrosse season in the spring, with a light aeration at the end of the summer.

"Following the 2009 season we tried something different," said Yeiser. "We contracted the DryJect® service to come in and inject Profile® porous ceramic over the whole field at Arnold Stadium. We had tested this technique in the lacrosse goal creases and it seemed to produce a good result. The resulting surface was firmer and withstood the heavy traffic better."

In the fall of 2009 Lebanon Valley College used the DryJect and Profile porous ceramic technique on the entire field at Arnold Stadium.



The specialized DryJect® injection aeration equipment is available only through authorized DryJect service centers. This helps ensure that the work is done to the highest standards, while keeping costs down for the school or college.

Better turf drainage means less maintenance and a better playing surface."

– DryJect Contractor

The DryJect machine "shoots" a blast of water and air under high pressure into the soil surface, immediately reducing compaction in the soil. The half-inch holes form a grid pattern 3 inches apart across the entire field.

The high-pressure blast creates a vacuum behind it that draws in dry material, filling the blast hole to the top with the soil amendment. The DryJect hole can reach up to 4 or 5 inches deep, depending on soil conditions. The amendment fills the hole to improve surface drainage, while keeping the surface firm.

"The DryJect and Profile treatment definitely helped our field drainage," Yeiser said. "On March 13, 2010 we had two lacrosse games back to back in the middle of a terrible rainstorm, over two inches. There was no mud on the player's shoes, the footing was firm and the turf needed only a minimum of repair after those two hard-fought games.

"To me it's a pretty good test of how well the DryJect and Profile technique works. Before the treatment a 2" rain gave us mud and torn up turf. After the treatment, a 2" rain gave the players a chance to play their best with good footing. There simply was no mud to be seen on the playing field that day. That's proof enough for me," Yeiser concluded.

The cost of improved drainage and reduced compaction on natural grass playing fields is

very low compared to the major capital expense of synthetic fields. Even for schools with synthetic turf on their main field, practice and intramural fields are often in need of improved drainage. Because of the ongoing wear and tear on grass fields, experts say that the DryJect aeration and Profile soil amendment technique is most effective when used as a routine part of the ongoing sports field maintenance program.

For schools on a budget looking for improved playability and player safety in adverse weather conditions, the new DryJect aeration and Profile porous ceramic amendment technique may be worth considering.



Patented DryJect® equipment uses high-pressure water injection to "shoot" sand and Profile® porous ceramic soil amendment deep into the soil profile, breaking up compaction and creating "mini drainage holes" in the turf for superior drainage.

Lebanon Valley College Sports Turf Maintenance Team

The sports field maintenance team at Lebanon Valley College does an great job of providing superior natural grass playing surfaces for student athletes.

Back row, L to R, Kevin Yeiser, Keith Evans, Chris Tshudy; Front row, L to R, Cory Kauffman, Ryan Schmidt.