

Tried Surfing Turf Lately?

TRY AGAIN! [WWW.SPORTSTURFMANAGER.COM](http://www.sportsturfmanager.com) TRY AGAIN!

STMA is pleased to invite you to the redesigned website. It's user-friendly, it's interactive, and it presents a wealth of new content. The website was designed with members in mind, but is a resource for all. Chapters can establish "home pages" within our website to broadcast events and contacts to the world, and chat rooms are accessible in the "Members Only" or "Ask the Experts" section. Here are some additional highlights:

Click on one of the menu headings for quick, easy navigation through the site.

STMA members log in here to access "members only" and update your information.

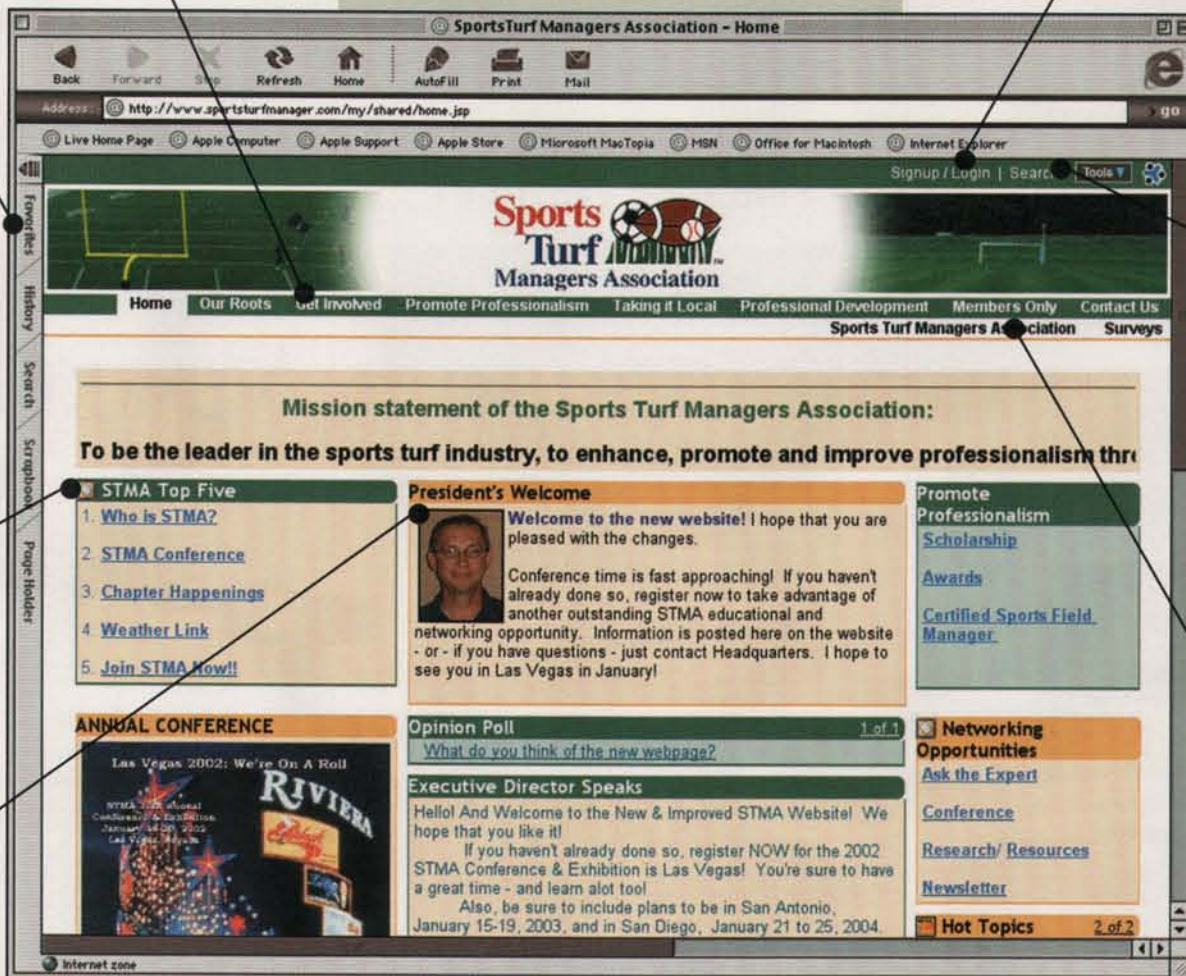
Be sure to add the STMA website to your favorites.

Click on STMA Top Five topics to stay updated.

Look for the "President's Welcome" for the latest from Murray Cook.

Click for site search engine.

"Members Only" is home to STMA's online directory, Career Center, Member Forum & member surveys.



GET A GRIP



Our 35 years of building high quality workstands for the bicycle industry makes it possible for us to offer six different workstands designed especially to give you an extra hand with trimmer and brushcutter work.

"Best investment I ever made."
Ray Martin, Jr.
Lawn Care Professionals

"Fastest, money/time saver in the lawn and garden business!"
George Hofacker
George Hofacker Equipment

"We purchased our 1st unit; it paid for itself in a week. Purchased 2nd, 3rd, looking at 2 more."
John Chadwell
Chadwell & Sons

"Great equipment - does its job and lasts forever."
Mark Williams
Mark Williams Outdoor Equip.

"I'll never do without it."
Neil Borum
Nassau Equipment

← PRS-3 OST



6 Long Lake Road, St. Paul, MN 55115
phone: 651-777-6868 fax: 651-777-5559
email: info@parktool.com

Circle 122 on Inquiry Card

Finally! An infield conditioner that gives you brick red color without the brick.



With **TURFACE Pro League Red** you get the rich red color you want plus the infield conditioner you need. **TURFACE Pro League** is the only patented infield conditioner that provides superior rainout protection and delivers the ultimate playing surface.

TURFACE
Pro League Red

Call us at 1-800-207-6457 or visit our website at www.turface.com

Color and Performance. Pro League® Red.

Circle 123 on Inquiry Card

Need information for managing your Athletic Turf

[HTTP://WWW.GREENINDUSTRY.COM](http://www.greenindustry.com)

Complete the Reader Service cards in the issue or visit us online at www.greenindustry.com. Each issue has over 100 brochures covering the latest products, services and company information.

All-Star Team of Turf Care Equipment



The leaders in Sports Turf Maintenance Equipment have assembled an all-star team of equipment for your sport turf care needs. Choose **Bob-Cat®**, **Bunton®**, **Cushman®**, **Jacobsen®** and **Ryan®** for mowers, aerators, infield rakes, utility vehicles, seeders and sprayers. Off the field they are easy to maintain. Rugged design and construction keeps them running for years.

Call **1-888-922-TURF** today or visit us at www.textronturf.com for more information or demonstration.



BOB-CAT BUNTON CUSHMAN JACOBSEN RYAN

Circle 126 on Inquiry Card

THATCH - MASTER

48" & 60" FINE TURF VERTI-CUT



1. Commercial quality fine turf verti-cut
2. PTO powered - 20 to 30 H.P.
3. Thin (.060) blades do NOT leave grooves
4. Extremely low maintenance
5. Fast

Turf Specialties, Inc.

320 Third Street, S.W.
Winter Haven, FL 33880
Telephone: (863) 289-3330

Circle 125 on Inquiry Card

Profile your products with the NEW

MARKETPLACE

A FOUR-COLOR 3x6" ADVERTISEMENT

Call your regional sales representative today!

For classified advertising rate information, contact Chris Dziubla at 630-295-9617.

FOR SALE

GOT PAINT?

GET IT!

A F M

(Athletic Field Markings)

by

F P C

www.franklinpaint.com

1-800-486-0304

VERTI-DRAINS AND MORE

Nation's #1 Distributor has trade-in's for greens, tees, fairways & sportsfields.

305.200	VD	80"	W/W	0-16"	DPTH	\$9000
305.200H	VD	80"	W/W	0-16"	DPTH	\$7995
305.250H	VD	96"	W/W	0-16"	DPTH	\$9995
Ryan GA	60	Fairway unit				\$4500
Level Spike	60"		10"	DPTH		\$3100
Multi Spike	48"		10"	DPTH		\$2700

Commercial Turf & Tractor 800-748-7497
www.commercialturfandtractor.com

Advertise here!

call

Chris Dziubla,

630-295-9617

Advertising Sales Staff

**CT, DC, DE, IN, MA, ME, MI, NH,
NJ, NY, OH, PA, RI, VT**

Paul Garris

35 Greenbriar, Aurora, OH 44202

(330) 562-2512, (330) 562-3512 (fax)

pgarris@mail.aip.com

**AK, AZ, CA, CO, HI, ID, MT, NM,
NV, OR, UT, WA, WY**

John Bolduc

P.O. Box 12357

Orange, CA 92859

(714) 538-4730, (714) 538-4785 (fax)

jboulduc@mail.aip.com

**AL, AR, FL, GA, KS, KY, LA, MD, MS,
NC, OK, SC, TN, TX, VA, WV**

Deanna Morgan

2565 N. Arbor Trail,

Marietta, GA 30066

(678) 445-5211, (678) 445-5611 (fax)

dmorgan@mail.aip.com

IA, IL, MN, MO, NE, ND, SD, WI

Colleen Murphy

Millennium Marketing Group, Ltd.

2028 N. Stanton Ct., Arlington Heights, IL 60004

(847) 590-1162, (847) 590-1163 (fax)

cmmurphy@earthlink.net

Advertisers' Index

Company	Page #	R.S.#
Aventis Environmental Science*	24-25	110
Bannerman*	24-25	111
BASF Corp. Professional Turf & Ornamental Products	Cover 2	101
Broyhill	18	108
Carolina Green	41	118
Covermaster	31	114
First Products	35	116
Geoturf	11	104
John Deere	52	124
Laser Leveling Inc.	23	109
Lebanon Turf Products	15	106
Lebanon Turf Products	17	107
Partac/Beam Clay	30	113
Pro's Choice	33	115
Park Tool USA	52	122
Profile Products	52	123
ProSource One	5	102
Redexim Charterhouse	48	130
SISIS Equipment	47	121
Textron Golf & Turf	Back Cover	128
Textron Golf & Turf	52	126
TIF 94 Growers Associates	12	117
Triangle Marketing Sales	43	119
Turf Specialties	52	125
Turfco Manufacturing	45	120
Turfgrass America	7	103
United Horticulture Supply	13	105
Varicore Technologies Cover	3	127
West Coast Turf	29	112

*Regionally split ad

Beneficial binding

I read your article "What's the scoop on gypsum?" and I have also been reading soil books about the importance of Mg for adhesive properties. They say that the Ca:Mg ratio is very important to maintain proper soil aggregation. Do you subscribe to this theory?

Jim Hermann
New Jersey

Ca and Mg are both positively charged and attracted to the negative charges of soil particles. Other competitive cations such as Al, H, K, Na, and Mn can compete with Ca and Mg to remove them from the soil. A Ca:Mg ratio of < 8.5 simply assures us that there is sufficient Mg present for plant growth.

Ca and Mg are sometimes given too much credit for improving soil structure by creating stable soil aggregates. Theoretically Ca and Mg do contribute to aggregation, but in your practical example it has only a very minor influence on aggregation and the ability to grow grass on your field. As long as the Ca:Mg ratio is acceptable for plant growth you should not give it another thought.

Certainly you should not consider fertilization with Ca or Mg as a strategy for increasing soil structure on intense traffic areas of a sports field. If Ca and Mg could improve soil structure in this situation I would be buying stock in it, but it simply does not happen.

Soil aggregates can be as small as a grain of sand or as big as marbles. Soil particles are bound together mostly by organic compounds in the soil. Aggregates naturally occur when the soils are physically moved by wetting/drying, freeze/thaw, physical root activity, and decaying organic matter. Certain types of aggregates can be very stable and resistant to change under modest mechanical disruption such as plowing a farm field. These "crumbs of soil" or granular clods bridge to form macropores as opposed to a soil containing many individually dispersed particles that pack tightly together. Thus aggregates give us macropores for better air and water movement in the soil.

Under normal non-traffic conditions, simply growing grass roots has an amazing capacity to develop very good aggregation. Most soils that are fertile enough to grow grass also have sufficient nutrition for aggregation. In your high traffic goal mouth area the aggregates have been mechanically broken down and continued traffic and weak growth of grass does not allow aggregation to occur.

Smearing of exposed and wet soil breaks down even the most stable aggregates. If you seeded the goal area and did not use it for 5-10 years then the soil would likely return to a well-aggregated status through root growth, humus formation, and earth worm activity. So, while we talk about good soil structure and soil aggregates, it is simply not found in

these high traffic areas where the soils are mechanically dispersed into individual particles. Dig up some soil from a non-traffic area of your field or facility and compare it with the soccer goal mouth and see if you can see the difference in aggregation.

Can deflocculation caused by excessive compaction as in a soccer goal mouth render a soil unable to sustain plant life due to an inability to hold nutrients? How does this relate to CEC?



It just seems like goal mouth soils are dead and that they will never be able to grow anything again, but in fact they still have the same CEC that they had when good grass was growing there. Cation Exchange Capacity is based on the ability of individual particles to hold nutrients, not on the amount of aggregation. Therefore mechanically dispersed soils are still fertile enough (still have the same CEC as when aggregated) to support plant growth. Mechanically dispersed soils have problems that are far more important than fertility. Compaction, poor drainage, and high water holding make it difficult to get any grass started.

Can soil aggregation be reestablished through proper cultural practices alone or is soil modification necessary?

As mentioned above it is unlikely that cultural practices alone will increase aggregation as long as the soil continues to be mechanically dispersed from continual traffic. If you wear the grass off each year and soil is exposed then you are keeping aggregates from forming.

One of aggregation's important benefits is forming macropores. Since we can't get this on intensely trafficked areas we try to fight compaction and make large pores by using mechanical cultivation (aerator, spiker, slicer, etc.) or by adding physical amendments or sometimes compost.

Aggregation is a slow and natural process and grass is the best type of vegetation to produce good aggregation. It's like the chicken and the egg, you won't get aggregates where you can't keep the grass—so you're fried.

ST

Have Questions?

Send them to Dave Minner at Iowa State University, 106 Horticulture Hall, Ames, IA 50011, or email dminner@iastate.edu. Or, send them to Grady Miller at the University of Florida, PO Box 110670, Gainesville, FL 32611, or email gmler@mail.ifas.ufl.edu.



Maybe it's time to consider a better drainage system.

A Multi-Flow drain system will bring you the best drainage that technology has to offer, without the use of heavy construction equipment. You can have unparalleled performance, longer life, and have the site ready for use in no time. Just drop the Multi-Flow in a 4" wide trench,



backfill the trench with coarse sand, and jet the trench with water. That's it! Should be expensive right? Wrong. Typically a Multi-Flow system will be half the cost of a French drain, and will last many years longer. Do it right the first time, use Multi-Flow drainage systems.

MULTI-FLOW
drainage systems by Varicore

Contact Varicore Technologies, Inc. at 800.978.8007 or Fax 320.978.6607

www.varicore.com • e-mail: service@varicore.com

Circle 127 on Inquiry Card