By Steve Farber

How to get the "Story Learner's" edge

This is the fifth in a series of six articles in the new Ewing Professional Development Series. STMA and Ewing have partnered in this series to bring sports turf industry professional development and career issues to the forefront.

I'VE NEVER MET ANYONE who said they left a company because they were recognized too much, and, I would guess, neither have you. We crave for others to notice our work, appreciate our accomplishments and recognize our contributions. Leaders make a practice of doing just that.

The most impressive leaders—the Extreme Leaders—go way beyond recognizing and rewarding others. What they have, in fact, is a boundless fascination with and gratitude for the people around them, colleagues and customers alike. They notice others' accomplishments, to be sure, but they also learn their stories, understand their challenges, and absorb their hopes, dreams and aspirations.

Why? Because they love the human drama (and comedy) and are driven by a desire to help, to make a difference, and to hold on to the very things that make us human. Extreme Leaders are awake, attentive, and observant to and about the lives of others while they simultaneously strive to make the business more productive and profitable. And, most important, they understand that a fulfilling life and a thriving business are not mutually exclusive ideas.

Consider Dick, a mid-level vice president at a formidable national bank. He ran the check processing operation in the bank's corporate facility. It was the closest thing a bank has to a manufacturing operation and it had an ethnically diverse, primarily blue-collar employee base. Dick beamed with pride and enthusiasm whenever he would tell story after story of unprecedented productivity increases and skyrocketing employee morale.

Dick rarely used the pronoun, "I," as in, "I've done this; I've accomplished that." He also rarely used the word "we." Instead, he told story after story about individual people and how they'd risen to conquer one enormous challenge after another. And he told many of those stories with the hero standing right there. Some appeared embarrassed by the spotlight, but every one of them, without exception, expressed some variation of a glowing "thank you" before scurrying back to work.

It's not as though Dick didn't have an ego. He could puff out his chest along with the best of them. But he always brought it back to one central theme: his deep gratitude for his employees' spunk, imagination, personalities and drive.

Simply put, Dick loved the individuals on his team—even the ones he eventually had to let go.

Several years later, after his promotion to Sr. Vice President (which was essentially deity status at the bank) surviving a merger and moving to another division, Dick was charged with conducting what some euphemistically call a "reduction in force." Over a 12-month period, he culled his division from 1500 people down to 175, mostly through outsourcing. During that same period, however, employee satisfaction percentages went from the mid 70's to the high 80's, raising steadily all throughout the process. That was, to put it mildly, counter-intuitive. And it wasn't because the survivors where happy to still have a job (which they were), but anyone who's ever been through a lay-off will tell you that the

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event is usually characterized by increased stress, cynicism and even paranoia. That was not the case in Dick's domain.

When asked him how he accounted for the amazing spirit and morale even as people were jetting out the door, he said, "Two things: I kept everyone involved, and I continued to let them know I cared every freakin' day."

And that's really the whole point: he knew their stories because he cared about them, and they knew he cared because he knew their stories; consequently, even through the most difficult of times, his team put their full effort into everything they did.

Can you say the same about your team?

The good news is that Dick's "story-learner" ability wasn't genetically encoded in his DNA. He learned how to do it by making a practice of fascination and gratitude and so can you by following these steps:

1. Write down the names of one or two key people internal to your business (colleagues, employees, staff, managers, partners, associates, etc.) and one or two key external people (customers, vendors, suppliers, etc.)

2. List everything you know about each person beyond the "function" he or she serves. Assess how much you know or don't know about each as a human being.

3. Ask each person to tell you one important story or event from his or her life. Or look for an opportunity to find out more during your next conversation. Ask each to share with you his or her number one business challenge.

4. Ask if there's some way you can be of service; something you can do to help with each person's challenge. Even if that person declines your offer, he or she will always appreciate your asking.

5. Pick one or two more people and do it again.

6. Repeat until you run out of people—for the rest of your life, in other words.

For some, this practice may be awkward, even difficult at first. Like anything else, however, being a "story learner" becomes easier with practice. And the payoff you'll receive in your employees' morale, engagement and productivity will be well worth the price of any initial discomfort you may have to invest. ■

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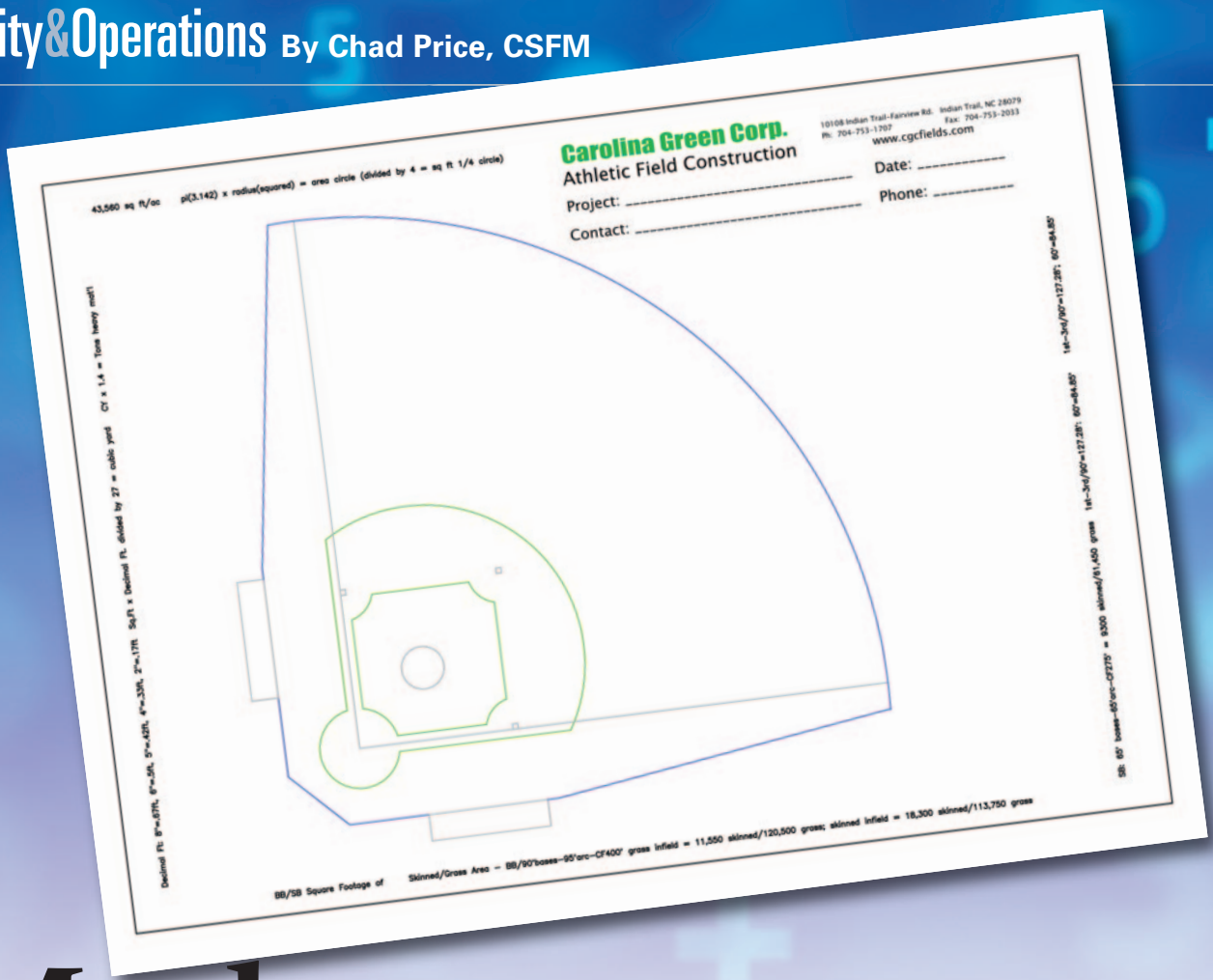
 By Chad Price, CSFM



Math 101
for Sports Turf Managers

ARE YOU SMARTER THAN A 7th GRADER?

Oh how I remember struggling through 7th grade math and complaining to my mom, "I will never use this stuff."

"Wait and see, one day you will," she said. By the way, 7th grade was when I realized there were people in this world smarter than me, many people in fact. I did not know what career I wanted to pursue back then, but I was sure it would be outside and far from a desk job requiring math skills.

Mom was right, I realized years later when a co-worker and I were repeatedly having difficulty estimating odd-shaped areas on plans. We knew there were formulas for these basic calculations, but they were lost in the past. This was before the Internet and before we had AutoCAD, so we resorted to desperate measures—we asked his 9th grade daughter for help.

She quickly realized we did not have a clue, and provided us with a cheat sheet of all types of geometry formulas, which still to this day is hanging on the office wall. In fact, we have included these formulas in memo pads our people use daily in the field.

Writing this article really made me realize how often I use math in sports fieldwork. Whether it is estimating and bidding a job, building a job, applying maintenance products, or completing job reports, there are basic recurring formulas and exercises I use daily and wish to share. You can download my cheat sheet at our website, www.cgcfields.com. Take it, use it, add to it, and make it your own.

Basically, there are three types of calculations that get it done for me: DISTANCE, AREA and VOLUME.

Distance

Most distance calculations we use involve right triangles or 90-degree corners such as the right angle at home plate or the corner of a soccer field. The most common distance calculation we use in the field is to determine the distance from first base to third base. It is easy to remember one distance, say for 90-foot bases, but when you have 45', 60', 65' bases and so on, you need a formula. That formula ($c^2 = a^2 + b^2$) for a right triangle. "c" is the hypotenuse, or the long

Math background courtesy of istockphoto.com.

side of the triangle, and "a" and "b" are the distance of each side forming the right angle. For example:

90' base path; ("a" and "b" are both 90, and 90 squared is 8100); squaring in math is multiplying any number times (x) itself, $90^2 = 90 \times 90$. The hypotenuse is "c" or the distance from first to third (or home to second)

$c^2 = a^2 + b^2$ or $c^2 = 8100 + 8100$ or $c = \sqrt{16{,}200}$ or $c = 127.27$ feet.

Distance from first to third base is 127.27 feet. You need a calculator with a square root key (√). It also helps to have a tape measure with feet measured in tenths so you do not have to convert .28 feet into inches. You can get these at most home and hardware stores. They usually have feet in inches on one side and feet in tenths on the other.

Just this summer, Bob Campbell, past president of STMA, sports turf manager at University of Tennessee, and former high school math teacher, laid on me an even more simple equation to solve the same problem. In a right triangle where both sides are equal, such as base paths on an infield, the hypotenuse is equal to $d\sqrt{2}$. For example:

"d" is distance of base path (90 feet) and $\sqrt{2} = 1.414$

Therefore, using the equation $d\sqrt{2}$ for the hypotenuse is: 90' x 1.414 = 127.26 feet from first to third.

This is an easy method since all you have to remember is 1.414, and know your distance of base path. You do not have to have your calculator to figure square root, you can just scratch it out in the dirt as long as you can remember 1.414.

One final right triangle method we often use when laying out a field is a 3/4/5 triangle. We use this to simply create a right angle, a true 90 degree corner. "3" is one side, "4" is the other, and "5" is the hypotenuse. You can measure it in feet, inches, or whatever, as long as you have a 3 and a 4 on each side, and a 5 on the hypotenuse. We commonly use 30 feet, 40 feet, and 50 feet to help in accuracy. If you get three pins in place at those distances, then you know you have a square corner, and can lay off a field from there.

Area

In determining area in sports fields, we are typically dealing with rectangles, circles, and triangles. The rectangles are easy, just length times width equals square feet. A football field would be 160' x 360' or 57,600 SF.

Area of a circle is often used to calculate odd shaped fields like baseball and softball. The fair territory area of a field can be calculated using the area of a circle formula, ($A=\pi r^2$), then dividing by 4,

because baseball and softball fields are essentially ¼ of a circle. The radius is the distance from home plate to the fence. You have to calculate foul territory separately, usually using rectangle and triangle calculations depending on the shape, and add to the total. For example:

Distance from home plate to fence is 320' (radius = 320), radius squared (r^2 = 320' x 320') = 102,400

Pi or Π = 3.142 Area of circle = Πr^2 or 3.142 x 102,400 = 322,048 SF

The fair territory of the baseball field is ¼ of this big circle area so 322,048 divided by 4 = 80,512 SF (square feet).

Add the remaining apron and foul territory using rectangle or triangle calculations, depending on the layout. Triangle calculations work well for foul territory areas where the foul line dies into the corner. The triangle area calculation is ½(height x base), or half of a rectangle. For example:

Base is 30' and height is 120', so:
30' x 120' ÷ 2 = 1800 SF

These calculations for baseball and softball are not exact, but are usually very close. Another way is to break up the field into smaller parts, rectangles and triangles, and compare the totals to get an average. When calculating turf area, I will calculate total area first, then calculate and deduct skinned and non-turf areas to get total square footage for turf.

To calculate the total square footage inside a track, calculate the "D" rings as a circle, and the straight run of the track as a rectangle. For example:

Straight run of track = 300'
Width of field track to track = 240'
Rectangle area is 240 x 300 = 72,000 SF

Radius of D ring = 120'
Area of D ring is Πr^2 or A = 3.142 x 120^2
or 3.142 x 14,400 = 45,245 SF

Total Area inside track is: 45,245 + 72,000 = 117,245 SF.

Volume

Say you want to know how much infield mix you need to add 2 inches depth over your 9000 square feet of skinned area. This is a typical volume calculation, and sounds easy enough, but there are some stumbling blocks. The first one is dealing in inches. The first I do in any volume calculation is convert inches to tenths of a foot, or to a decimal. Simply divide 1 by 12 to convert 1" to .083 feet and so on for the other inches up to 11. The conversion table is as follows:

1" = .08'	4" = .33'	7" = .58'	10" = .83'
2" = .17'	5" = .42'	8" = .66'	11" = .92'
3" = .25'	6" = .5'	9" = .75'	

We now know that 2 inches equals .17 feet, so the equation becomes:

9000 SF x .17' = 1530 cubic feet
27 cubic feet = 1 cubic yard
1530 cf ÷ 27 cf/cyd = 56.6 cy material required.

If your supplier delivers in cubic yards, then you are good to go. If they deliver in tons, then you need to convert from cubic yards to tons. All materials are different depending on moisture content and bulk density, but a good standard conversion is 1.4, that is 1 cubic yard equals 1.4 tons. This works very well for sand and stone, and for most infield mixes. Some infield and warning track materials are lighter per volume and have more of a 1/1 or 1/1.2 ratio. Experience will tell, but using 1.4 is always the sure thing.

So converting 56.6 cy to tons would be:
56.6 cy x 1.4 = 79.2 tons material required.

Another common sports field volume calculation is topdressing. Say you want to topdress ¼ inch of sand over your 80,000 SF soccer field. How much material is required?

Cheat Sheet

Inches to Decimal Feet Conversions

1" = 0.0833'	4" = 0.3333'	7" = 0.5833'	10" = 0.8333'
2" = 0.1667'	5" = 0.4167'	8" = 0.6667'	11"= 0.9167'
3" = 0.2500'	6" = 0.5000'	9" = 0.7500'	12" = 1.0000'

Calculating Area of a Circle

Pi (3.142) x r2 (radius squared) = sf area
EXAMPLE: 18' Diameter Circle
3.142 (pi) x 81 (9x9=81, radius is equal to ½ of diameter) = 255 square feet

Hypotenuse of a Right Triangle

To find the hypotenuse of a right triangle, the square root of the sum of the squares of the shorter legs must be used. This is the formula used to find the value of c.
$c^2 = a^2 + b^2$ Find the value of "c" when a = 90 and b=90
$c^2 = a^2 + b^2$ $c^2 = 8100 + 8100$ $c = \sqrt{16,200}$ c = 127.27
or the quick method where both sides are equal, such as base paths on an infield; $d\sqrt{2}$.
"d" is distance of base path (90 ft) and $\sqrt{2}$ = 1.414 90'x 1.414 = 127.26 feet

Calculating Volume

To determine the amount of material needed for your application, use the following formula and add any required compaction factor necessary:

$$\frac{\text{Area (sq ft) x Depth of Material Needed (ft)}}{\text{27 cubic feet per cubic yard}} = \text{Cubic Yards}$$

EXAMPLE: $\frac{\text{(90,000 sq ft x 0.6667' ft)}}{\text{27 cu ft}}$ = 2,222 cy + compaction factor

The sooner we stop dealing in inches the better. We need to convert ¼" to a decimal. We know from the table above that 1" equals .08', and we know ¼ equals .25, so we convert as follows:

.08' x .25 = .02' or ¼" = .02'

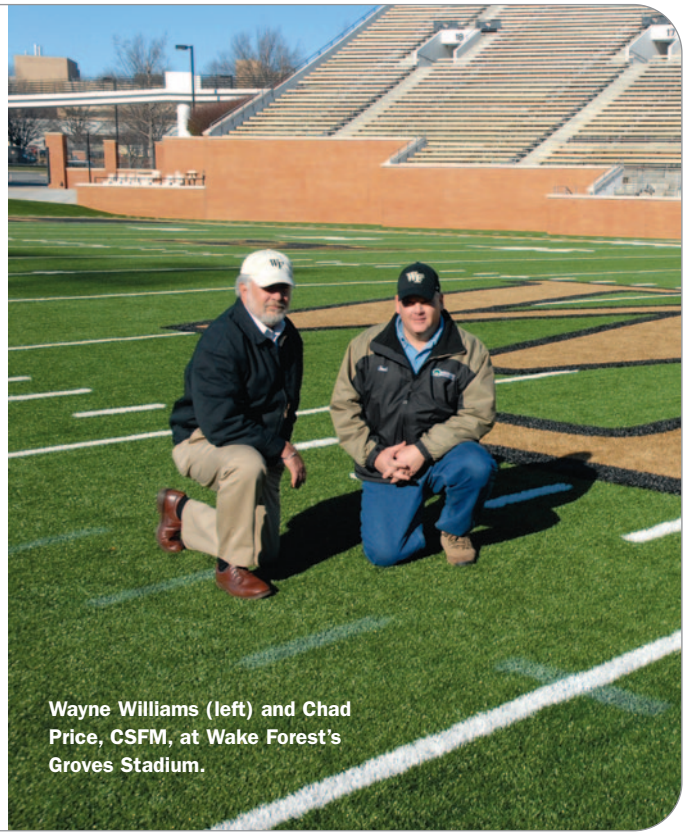
From there: .02' x 80,000 SF = 1600 cubic feet
(27 cubic feet per cubic yard)
1600 cf ÷ 27 cf/cyd = 59.26 cy
59.26 cy x 1.4 cy/ton = 83 tons sand required
for ¼" topdress.

The process to remember in volume calculations is: inches to feet (decimal), feet to cubic feet, cubic feet to cubic yards, and cubic yards to tons.

These are the most basic exercises, but also the most common we face as sports turf managers. In the world of shrinking budgets and rising costs, having the correct calculation on quantities is critical.

I am now faced with my greatest challenge, helping my 7th grader get through math. He complains every night, claiming he will never use this stuff. He too is in for a revelation. ■

Chad Price, CSFM, owns Carolina Green Corp., a sports field contractor in Indian Trail, NC.



Wayne Williams (left) and Chad Price, CSFM, at Wake Forest's Groves Stadium.

 By Jim Cornelius

Field care by the athletes

COMPUTERS' SPELL CHECKERS have pushed dictionaries off desks; robotics has replaced human hands in many aspects of the manufacturing world and yet, when it comes to athletic field care you still find that some of the best ways are the traditional ways (human power with manual tools).

Yes we have machines that help with the larger tasks and we use these as tools the way they were meant to be used (and sometimes in ways the manufacturers never intended!). By and large the industry has not changed all that much even though we have a better selection of turfgrasses, soil analysis, topdressings, research materials, soil amendments, etc., to aid us in meeting the challenges we face every day.

But trash still finds its way onto the ground. Holes on pitching mounds and batters boxes continue to be dug. Grass continues to grow. Sometimes there are just not enough hours in the day to do it all. But here at the West Chester School District in southeastern Pennsylvania, we have opened our ears and instituted a different approach to our problems. We now have athletes doing grounds maintenance as part of their education and athletic experience on our sites.

Instead of coming to work with built up frustration we now come to execute a task, we finish what was started, we plant seeds (not only grass seed but educational seeds) and we now work outside the box on most occasions. We still only have five employed in the athletic field maintenance department yet our team has grown to more than we expected, and the best part is the majority of the athletes work for the ability to use our facilities. Here is how we do it.

Our frustration was at an all time high when the district was renovating two high schools and building a third; our athletic field numbers were growing yet the staff count was not. Administration realized that the dollars being spent needed to be protected so they formed a committee to work on developing an Athletic Strategic Plan for the High School Athletic program. They covered everything from student safety and conduct to field maintenance.

Occasionally a group would dump dirt (yes dirt, not topsoil, topdressing or soil) in a goal mouth, kick it around, sprinkle some cheap seed, and call it helping us.

Having the privilege to be part of this committee, I helped institute an evaluation tool that we revised from information from Dr. Dave Minner and many others in the STMA and Keystone Athletic Field Managers Organization. We developed a communication tool using Red, Green & Yellow flags for each of our fields along with updated emails of field conditions as they changed in status from one flag color to another; we established and implemented a more meaningful facility use policy for both outside and inside venues; limited the amount of use by outside organizations to reduce wear and minimize traffic to where we could maintain quality turf; and we developed and implemented rules and guidelines for all users, which included that all users be taught how to help maintain our facilities.

All of the items incorporated into the Athletic Strategic Plan are important and meaningful, yet the one we embraced was the last one. Teaching our users was and still is huge. Never in my dreams did I think that we could get users/athletes to help maintain the fields. In the past most groups expected the best yet would rarely help out. Occasionally a group would dump dirt (yes dirt, not topsoil, topdressing or soil) in a goal mouth, kick it around, sprinkle some cheap seed, and call it helping us.

We began meeting with the middle school teams as they were more receptive to what we wanted to do, and the coaches liked the fact that we weren't asking them but the students to participate. Our promise to them was simple—help us out with a few small items (filling holes after practice, using divot mix on the turf where needed, spreading some seed in the goal mouths before practice, etc.) and we would provide them with game day facilities each day they took the field.

The first season we had about 70% participation from the middle school teams but once the other coaches saw that some fields were exceptional they quickly realized they too needed to work with us. As we went into the second season the students began asking when we could meet with them and this has progressed to the point where they now email when they need seed, or a rake or shovel is missing from its place.

Each season brings something new; we now teach our outside users by holding mandatory training sessions that every coach involved in each organization must attend before the group is issued their permit. We began holding these in the spring and quickly realized that with the unpredictable spring time weather in Pennsylvania, one fourth of the spring season was over before we got everyone trained. Now we hold them in late October when we are putting our fields to rest for the upcoming winter and this allows us to be more aggressive with our training.

Each team member participates in one or more stations that we have set up. We begin with a brief explanation of why we hold the training classes, dealing with trash at all our facilities and what responsibilities they have regarding trash, how to maintain the player bench and spectator areas, and lastly the care of our fence. Then depending on how many are present we either divide them up to the different stations or we work as a group from one to another. Our stations are natural turf areas where we explain using a field within a field; repairing divots with provided mix; pitcher's mound care, repair and covering with provided tarp; home plate care and repair, base path care and how each of the provided tools are used, as well as how to deal with water puddles, wet infields, etc. We show them how we take care of these areas and allow them the opportunity to show us a different way, try our way, and we answer many questions that they come up.

Some organizations have committed 100% to our efforts while others have gone over our expectations. We now have groups willing to mow (following our guidelines) fields, handle the irrigation responsibilities (again following our guidelines), provide manpower and equipment to help apply topdressing, grass seed, infield mix all of which we provide so we control the materials used. All of this did have initial costs (nothing is free) that we quickly recovered from saving man hours that the groups provided.

We did purchase tools for each field, buckets for divot and seed mix at each field, tarps for each home plate and mound area, batter box jigs that the crew made for each baseball and softball field, metal storage boxes we had made to hold materials, hoses, quick dry materials, and many other minor things for them to maintain the fields at no cost to them. Ironically some of the groups have bought extra rakes, booms, hoses, tank sprayers for wetting down the mounds, bags for trash and taken ownership toward our facilities. A win-win for all involved.

So when your frustration level reaches an all time high, look around at the resources available and don't turn the help away but turn them into teammates. In the end the children and the athletes are winners no matter what the outcome of the game.

Jim Cornelius is the facilities supervisor for the West Chester (PA) Area School District. ■

Cost of bluegrass seed to rise

BLUEGRASS SEED prices are going up. Projections that prices could increase by nearly dollar a pound were incorrect; it's likely to increase more than a dollar, and a great deal more for the 2010 sod seed plantings

Depending on the variety, prices for 2009 will increase 15 to 20 percent. But, when prices will be really jumping is after the new crop seed harvest fall 2009. Elite Kentucky bluegrass prices for 2010 are projected to increase 60-70%. These projected price increases are based on actual signed contracts with seed growers to produce the seed. At the time of the contract signings seed growers had alternative crops that were more profitable than producing bluegrass. If the higher prices had not been contracted, the seed would not have been produced.

Supply and demand does work. In this situation it was the increased demand for the grower's acre of ground to produce Bluegrass seed or an alternative crop. At the same time the demand for Elite Kentucky bluegrass was low due to the poor housing market. Kentucky bluegrass seed production has been greatly reduced to compensate reduction in consumption.

The 2010 Kentucky bluegrass price is expected to be the peak in prices. As most of you know many agriculture commodities prices collapsed last summer. This collapse occurred after the contracts were signed at record setting prices. The good news is Kentucky bluegrass prices are expected to start a decline by 2011 season.

The currents of the market are moving in many directions. Ag commodities prices were increasing while the demand for elite Kentucky bluegrass seed was decreasing; thereby reducing the bluegrass seed production. Sod producers have been very conservative with sod inventories and rightfully so.

Farms have been limiting replanting and in some cases, not planting harvested acreage at all. Who really knows what or when anything is going to happen, but with even a small increase in sod acres planted in 2010 this may lead to a very tight supply of Elite Kentucky bluegrass seed.

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