



Going green with your clay tennis courts

by Gary Wun

May 2009 -- Going green" - you probably rolled your eyes when you saw that term. Yes, it's another chapter in saving the world. However, unlike recycling paper, plastic, or cardboard and spending a thousand dollars to get your program started, this one won't cost you a dime. In fact, this program will save you money right from the start. The best part is you probably have all the necessary tools already in place.

Going green with clay tennis courts - how is that possible? The everyday maintenance of a clay tennis court requires gallons of water, chemicals, salts and gasoline. All of these things can take a toll on the environment. How would you like to reduce the consumption of all of these items, and still improve the overall conditions of your playing surface? It can be achieved by simply changing the timing of your maintenance procedures.



Tennis courts at the Country Club of Virginia with above-ground watering systems.

Clay tennis courts that have above-ground watering systems are usually watered at night, rolled or brushed in the morning, and watered and brushed at mid-day. The cycle is repeated in the evening. The midday maintenance presents the most challenges, which include dealing with time constraints and Mother Nature. Uneven watering, hard dry spots, wet spots, and inconsistent court playing conditions may result. Underground systems are a great idea, but the cost of conversion is too expensive for many facilities. Most people have made do, but you don't have to anymore.

Court maintenance is like cooking: You have to know when to add a little spice, how much of each ingredient to use, and to what temperature to set the oven. First, let's talk about when to start "cooking up" a new approach. The beginning of any tennis season is an optimal time to incorporate this system. Your courts will be rough to begin with anyway. It takes time at the beginning of a season for courts to "settle in" - an excellent time to begin an environmentally friendly program, or any new idea you may want to try. Players will generally cut you a little slack over court conditions at the beginning of a season because most understand the breaking-in period and they are also just getting used to being back on the clay.

Watering courts

With this "going-green" concept, all watering is done at night. Traditionally, courts have a midday watering period, but that step has been eliminated. The temperature of the court surface and time constraints are the main reasons. Everyone has this dilemma; to get enough water down, you have to flood a court, but if you flood a court during midday it takes longer to drain and service the courts than your maintenance and court schedule will allow. So you cut back on water, which means some areas of the court get watered, others don't. The outcome is uneven watering, hard dry spots and crusty courts. The daytime temperatures of the court surface can also be very high. With winds and iron-hot courts, the water never penetrates the surface; it ends up on top and just bakes the court. The situation is much worse than if you just left it alone. In my experience, I think the midday watering just helps make a court hard. The parts of the court that lack water during the midday cycle try to "fight" for that little moisture and end up just sealing up the surface, creating a hard surface that won't absorb water. However, by strictly watering courts at night, the courts are in a "relaxed" condition. The surface temperature is lower, the sun's radiant heat is not a factor, and you can flood a court and allow the water to slowly absorb deep into the surface, down to the base. By repeating this procedure exclusively, the base will create that much-needed reservoir that will keep the court hydrated for an extended period. Over time and with a few adjustments to your watering schedule, water will find and eliminate all dry spots, creating an evenly watered court.

By eliminating the midday watering cycle, you have achieved two important things. One, your courts' down time has been reduced to the amount of time it takes to drag your courts. And second, your water consumption has been cut by a third or more. Remember, some sprinkler heads use an average six gallons of water per minute. With eight sprinkler heads on a court, water

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consumption adds up fast. People playing tennis create more revenue than people watching water dry.

The amount of time water is applied will vary by facility. However, the basic concept is to stagger the application. For example, complete one watering cycle, then come back an hour later and complete a second. This allows water to flood and penetrate the surface. Then, before the second dose of water is applied you can identify any area the first watering missed. Some irrigation control boards have a percentage feature whereby one can program extra watering amounts into the program and it will stagger your watering program automatically. This is a wonderful feature and works extremely well. The trick is to find the correct amount of water needed. Start with a conservative amount, and then increase the amount as the temperatures get higher during the season. Tinker with this until you find a comfortable balance.

Rolling courts

Rolling, rolling, rolling . This procedure has always fascinated me. When do you roll, how much do you roll, and why do you roll? Rolling to many seems to be the cure-all for what ails your courts. If a player deems a court bad, many times it's because "you're not rolling enough." I've heard maintenance supervisors say they roll courts after every rain. They get a confused look when asked if they roll after every watering period, since essentially that is a "simulated" rain. Others say, "I roll because someone said we're supposed to."

I'm of the belief that rolling less will get you more. The actual playing on a court will enhance its quality more than rolling excessively will. I feel playing on a court will do a much better job of curing a court naturally than trying to push the issue and overroll it. Everyone seems to be obsessed with having a perfect court, and fast. Well, like fine wine, a great court will take a little time. Reduce your rolling frequency early in the season to once or twice a week. What this will do is allow water to penetrate the surface a little easier to get deeper to the base; this will help cure your court. By rolling excessively during this time period, you essentially will pack the surface so hard it makes it harder for water to penetrate to the base of your court. If water cannot get to the base, the courts cannot create the reservoir of moisture that they need to stay hydrated.

Timing of your rolling is important. Traditionally, rolling has been implemented early in the morning. With my system rolling is performed in the afternoons. In the morning, a court has its highest level of moisture content. The base and surface should be loaded with water from the nighttime watering period. Think of a court as a sponge. If you fill up a sponge and leave it alone, the sponge will remain damp for a long period of time. Then if you add water to a damp sponge it will keep absorbing water until it's full again. If a sponge is dry, initially water will run off because its pores are so compact it can't absorb any moisture. Now by rolling a court in the morning you are essentially packing a wet court, and compacting it. A court packed over and over will essentially seal the base and dry it out. Once the base is sealed off, water cannot penetrate past the top layer and create the reservoir needed to keep the court hydrated. By waiting until the afternoon to roll, water has totally absorbed into the court down to the base. The roller will still firm up the surface, but will pack more air and less moisture in the voids of the "top layer." This will reduce the effects of compaction, allowing water to flow freely to the base.

It's just easier on a court to roll in the afternoon. The base is firm, the court still has moisture present, and the lines will not shift. You are actually rolling what needs to be rolled - the surface and not the base. A court rolled under these conditions will do extremely well. With the reduction in the repetitions of court rolling in a season, you have just reduced your fuel consumption as well.

Court grooming

Court grooming is the backbone of any court maintenance program. This procedure and how it's performed can make or break the quality of a tennis court. I am a proponent of hand grooming a court. It may take a few minutes longer than using a cart but the quality of your courts will be noticeable. Unless you are doing all of the court grooming at your facility, no one cares about the courts as much as you. A part-time employee on a golf cart is potentially the most destructive force your courts will see. Grooming a court can be very tedious. Add a kid on a golf cart with plans after his shift (when he finishes grooming your courts) and you can guess what's going to happen. It may take him an hour to groom them one day, but he figures if he speeds up he can do it in 50 minutes, and pretty soon it's even faster. The faster the cart goes, the more the court drag is bouncing, and the more it bounces, the more ridges you get in your courts. The more ridges . oh yeah, ridges were not meant to be part of the game.

A major advantage of walking your courts over using a cart is attention to details. By using this procedure you can feel the court. For example, you can feel if a court line is raised, crooked or washed out. You can observe how hard or soft a court is or if it has any cuts in it. These are things that you can miss by using a cart instead of walking your courts.

Hand grooming does not take that much longer and actually takes less time than if you were rolling a court. The Aussie Mat is the best tool I have found for court grooming. It could be the best investment you can make for your tennis facility. If used properly, it can groom a court and remove debris at the same time. What makes this a superior tool over the traditional drag broom is its design. It is a mat with a tension bar, it has more surface contact (about 24 square feet) as

compared to a soft bristled broom. Its design will smooth the court surface and help reduce the amount of "ridging" on a court. The "teeth" will actually catch court debris and dead material, which helps keep your courts clean of loose material buildup. Court grooming can be performed two to three times a day depending on your preference. With this program the evening grooming can be omitted. The evening watering cycle will smooth out your courts. However, grooming before the evening watering cycle will give you the best results.

By hand grooming, your fuel consumption has been reduced, attention to detail has been increased, and your court quality has improved.

Chemicals

The application of chemicals to clay courts has varied over the years, from salts to bleaches, pre-emergents and fertilizers. A clay court is a science project in itself; it's basically a managed fungus factory. Clay courts need moisture to work correctly, and the timing of the water application is a great breeding ground for mold and mildew. This great dilemma has frustrated court maintenance superintendents over the years.

One chemical that is commonly used on clay courts, magnesium chloride (MgCl₂), can be an effective tool in your maintenance program. "Mag" has been used for some time on clay courts to help hold moisture in the courts. It is applied periodically over the court surface with a fertilizer spreader and allowed to melt into the surface. Since it is a salt, any moisture in the surface or in the air will "set it off" and it will start the melting process. Once in your surface it is effective in "holding" moisture in your courts for about 30 or 40 days. The amount of magnesium used is up for debate. I have heard of people using 100 pounds a court. In my experience, I have found 25 pounds a court will do an effective job; larger amounts can gum up your courts.

Magnesium chloride has some other benefits for your maintenance program. Mold and algae have traditionally been a problem with clay courts. Chlorine bleaches, and other chemicals have been used in the fight to eradicate this problem with mixed results. A well-timed application of magnesium chloride can help in your maintenance program to minimize this problem. It tends to help control algae without the aftereffects (slippery spots) of a chlorine product. Another great thing about magnesium chloride is it's a naturally mined product, and is environmentally friendly.

Work smarter, not harder

Plan ahead to adjust your court maintenance program for the spring. The accomplished court-maintenance supervisor will be able to make adjustments to the schedule and the budget. The goal of "going green" can be reached, while realizing financial savings and improved playing conditions.

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