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THE BEST-LAID PLANS

Superintendents rely on experience, peers and experts to craft effective agronomic programs

BY KURT LAWTON

There's no right or wrong way to write an agronomic plan. That is, unless you're over budget or dealing with unresolved agronomic issues.

Superintendents, PGA Tour agronomists and multicourse agronomic consultants all may view the details of growing and managing turf a little differently, but their goals are primarily the same: keep golfers happy with a consistent playing surface and, in all likelihood given the economy, spend less money achieving that.

Because golfers are playing fewer rounds and stiff competition exists to attract daily-fee golfers or club members, there's a heightened business pressure to do more with less. That's where good maintenance and agronomic plans, complete with past history, are invaluable.

PLAN BEYOND THE BASICS

Most superintendents have a plan for maintaining greens, tees, fairways, roughs and bunkers on a spreadsheet or written down in some form. Where plans differ is with the attention to detail, along with a happy and hard-working staff to carry out the plan. These details often separate pristine courses from mid-level courses.

Surrounding himself with experts, sound advice from peers and experience helps Mike Caranci thrive as golf course superintendent at Candlewood Country Club in Whittier, Calif.

"I'm very organized," Caranci says. "I have a

daily, weekly, monthly and three-month list of plans. I'm particular about applying and tracking exactly how much product goes where, when and under what conditions."

Caranci is passionate about his job. One of his most valuable tools, aside from his maintenance and agronomic plans, is his daily diary.

"I've been tracking my daily plans since I started here 21 years ago because we had a lot of problems when I arrived," he says. "This history of issues/treatments/results has served me well throughout the years because I'm presented with different weather and turf challenges, along with product changes every year."

COMBO PLAN

Caranci combines his maintenance and agronomic programs together, breaking them down by area – greens, tees, fairways, roughs and trees. He also has categories for machinery and irrigation system maintenance.

"Maintenance and agronomy plans go hand-in-hand in my detailed and organized mind," he says. "I think and plan in terms of everything that goes into keeping a golf course in tournament shape all year round."

Caranci's greens plan is detailed by season and other parameters. It includes:

- Mowing heights by season;
- Fertilizer application rates and timing;
- How and when preventive fungicides are used;
- Growth regulator amounts and timing;
- Proper leaching of greens for salinity management;
- Exact aeration types and timing; and
- The hows and whys of syringing at various temperatures.

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Cal Roth (right) works with Jeff Potts at TPC Scottsdale in preparation for the 2009 FBR Open. Mike Caranci (far right) is particular about applying and tracking how much product goes where, when and under what conditions at Candlewood Country Club in California.



BRING IN THE EXPERTS

One piece of valuable history Caranci garnered – and lived through 19 years ago – helps many superintendents in California combat high salt in irrigation water successfully.

“For me, the date I’ll never forget is August 1, 1990 – the day I had to cut a new green in front of the first green I lost – a day that was forever humbling,” he says. “It led me to consult with Larry Stowell, Ph.D., at PACE Turf in San Diego. We began applying IPM strategies on what we thought at the time was brown patch, then pythium.”

Caranci and Stowell realized the problem wasn’t fungus based – it was salt in the irrigation water that was weakening the turf, allowing diseases to move in. This issue wasn’t well understood at that time, Caranci says. So Stowell invited Caranci to join his first advisory board and gave him a project to find a way to leach salts away from the root structure of Candlewood’s *Poa annua* greens.

From 1993 to 1996, Caranci began a vigorous deep-tine aeration and heavy topdressing program while monitoring salt levels. The program helped rebuild the greens from the bottom up.

“Despite humbly losing four greens, it was rewarding to develop the program with Larry that saved greens everywhere and is still being applied today,” he says.

Being a mentor to younger superintendents brings joy to Caranci. He strongly urges organization, planning and communication skills in place of attempting to be a plant pathologist.

“Too many young superintendents want to be pathologists, which means they’re in the wrong job,” he says. “I tell them to focus on doing their job right and leave the diagnostic work to highly trained pathologists.”

KNOW THE COURSE

Cal Roth, senior vice president of agronomy for the PGA Tour, has helped PGA Tour and TPC club superintendents compile knowledge and plans during the past 25 years. Roth recommends a thorough evaluation process of a property.

But before a superintendent can develop optimum fertilizer and chemical plans for various areas of a course, he must have in-depth knowledge of it, such as:

- The type of property (resort, public, private);
- Property condition expectations;
- The number of rounds played per month;
- Results of on-going soil and water quality tests;
- Typical weather patterns;
- Typical insect/weed/disease pressure patterns; and
- Hosted tournaments and related issues during that time frame.

“Once you have this information and compile it into a system, you can develop a specific fertilizer and chemical plan for each area,” Roth says. “Be prepared to make constant adjustments because you can never follow your plans exactly.”

The agronomic plan spreadsheet, used by all 18 PGA Tour-owned TPC clubs and many PGA

Tour event locations, lists every product used, location on course, rates, timing, acres applied, total product applied, product cost per unit and total cost. Each line item is listed by actual day of application, as well as where it was applied (greens/collars, spectator hubs, fairways, roughs, tees, general, etc.). The fertilizer section includes the same breakouts by amounts of nitrogen, phosphorus and potassium applied.

Once this information is plugged into the spreadsheet, it calculates exact product amounts and budgets by day, month and year for chemicals and fertilizers, Roth says. This provides a clear blueprint plan to follow, including the approximate costs.

Roth’s staff of 11 agronomists handles about 110 to 120 tournaments for the PGA Tour, Nationwide Tour and Champions Tour. They also contribute to the agronomic plans for 18 TPC courses. Many man-hours are spent at each course to help the superintendent and staff, beginning with a one-day visit eight to 10 weeks before the tournament. The second visit begins one week before the tournament starts, and the staff usually will stay until Wednesday of tournament week, and sometimes through the final round on Sunday.

Roth’s staff also will make a follow-up visit six to 10 weeks after the tournament to begin plans for next year. Roth’s staff reviews each course’s agronomic plan throughout the year to iron out any needed changes.

“My staff constantly talks with each other, sharing issues and solutions that contain good general knowledge for any course,” Roth says. “Fortunately, we work with experienced and talented superintendents and staffs, so it makes the process easier when tournaments are repeated year after year – except when dealing with new sites, which takes much more work.”

FOLLOW THE MODEL

Like Roth, Nick Dunn, vice president of agronomy for Dallas-based Eagle Golf, oversees multiple courses – 79 to be exact.

“Because our business model comprises managing properties we own and properties for others (private and city owned), we view the budget and business model to be just as important as the maintenance/agronomic plan,” Dunn says. “We expect our superintendents and assistants to be good agronomists and good business people. Because the maintenance budget of these properties may be 30 to 50 percent of

An agronomic plan spreadsheet (part of which is shown below) used by all PGA Tour-owned TPC clubs calculates exact product amounts and budgets by day, month and year for chemicals and fertilizers.

Month	Chemicals	Fertilizers
January	\$7,609	\$1,341
February	\$3,619	\$13,425
March	\$1,289	\$781
April	\$24,350	\$11,443
May	\$8,755	\$843
June	\$12,736	\$6,091
July	\$3,858	\$11,000
August	\$3,001	\$668
September	\$7,771	\$1,108
October	\$8,392	\$443
November	\$5,704	\$6,476
December	\$2,009	\$12,974
Total	\$89,094	\$66,592

the total expense line for the property, we rely on them to be team players to make the whole property successful."

Dallas-based Eagle Golf espouses the philosophy of superintendents knowing the property they maintain.

"We work with superintendents to help write their maintenance plans, which they really can't do until they know who they are," Dunn says. "Are you a \$40 golf course or a \$90 course, a mid-range private or high-end private club. And how do you stack up to the area competition?"

In most cases, when superintendents write plans with exact knowledge of what they manage, they can create a budget that's supported by the revenue of that property and make the golf course profitable, Dunn says.

"It's extremely important for the superintendent to take proverbial ownership of the property, staff and membership," he says. "It's important the budget be understood by all par-

ties and that the plan specifics are designed to help control your market share."

IN THE ZONE

One key to making sure a sound agronomic plan will work is to have a happy and healthy staff that looks forward to come to work, says Tim Barrier, CGCS, at Rancho Santa Fe (Calif.) Golf Club.

"I treat them like they're family," Barrier says. "I have two great assistant superintendents and a great crew who've been with me a long time. Their average tenure is 15 years."

Barrier, now in his 17th year at Rancho Santa Fe, says about 75 percent of his agronomic plan is driven by instinct and experience, mostly because of the varied weather.

"It honestly took me about 10 years to really understand the soils and the microclimate weather patterns," he says.

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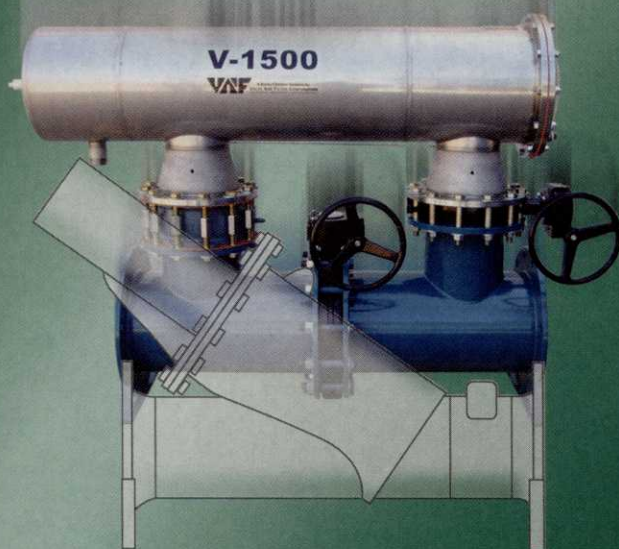
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not quite coastal or inland because it's six miles from the ocean. Barrier must be prepared to deal with fog, frost, rain, clear skies, and Santa Ana winds and fires.

"One big challenge during what we call 'May gray' or 'June gloom' – clouds in the morning and sunshine in the afternoon – is planning to keep greens dry in the mornings while delivering enough water to handle 90 degree sunny afternoons."

Barrier's agronomic and maintenance plan spreadsheet is a customized template derived from one created by a consultant. It's divided into sections: greens, tees, fairways, collars/approaches, rough and driving range. Within those categories, he plots when to apply which plant protection products, plant nutrition products, soil amendments, cultural practices (large and needle tine aeration, hydroject, verticutting, grooming, leaching, etc.) and irrigation scheduling.

FOLLOW THE STANDARDS

The details that drive Barrier's agronomic plan are spelled out in an annual standard operating procedures document that summarizes course set-up and maintenance. Barrier and his staff develop the details with the green committee, which then takes it to the club's 592 members for ratification.

The three-page standards document starts with an objective, then addresses each area of the course:

- | | |
|----------------------|--|
| • Greens | • Bunkers |
| • Collars/approaches | • Lakes |
| • Green aprons | • Lake surrounds |
| • Tees | • Cart paths |
| • Tee surrounds | • Driving range |
| • Fairways | • Watering practices |
| • Primary rough | • Tree management |
| • Secondary rough | • Type of grass |
| • Streambeds | • Mowing height and frequency/schedule |

Within each section, the document details:

- | | |
|---|-----------------------------|
| • Stimpmeter speed | • Resodding plans |
| • Irrigation timing | • Overseeding plans |
| • Aeration and topdress timing | • Type of sand |
| • Nutrition and plant protection guidelines | • Rake placement and timing |
| | • Tree trimming. |

"My plan is not super scientific or clinical like some superintendents who map out every minute detail," Barrier says. "But what we have is a flexible plan that works for us, and it works well. It allows the general membership to come out and enjoy the course every day in conditions as close as possible to the last time they played." **GCI**

Kurt Lawton is a freelance writer based in Eden Prairie, Minn.

For a template of a baseline standard operating procedure document supplied by the USGA, visit golfcourseindustry.com/files/pdf/maintenance_sop.pdf.

