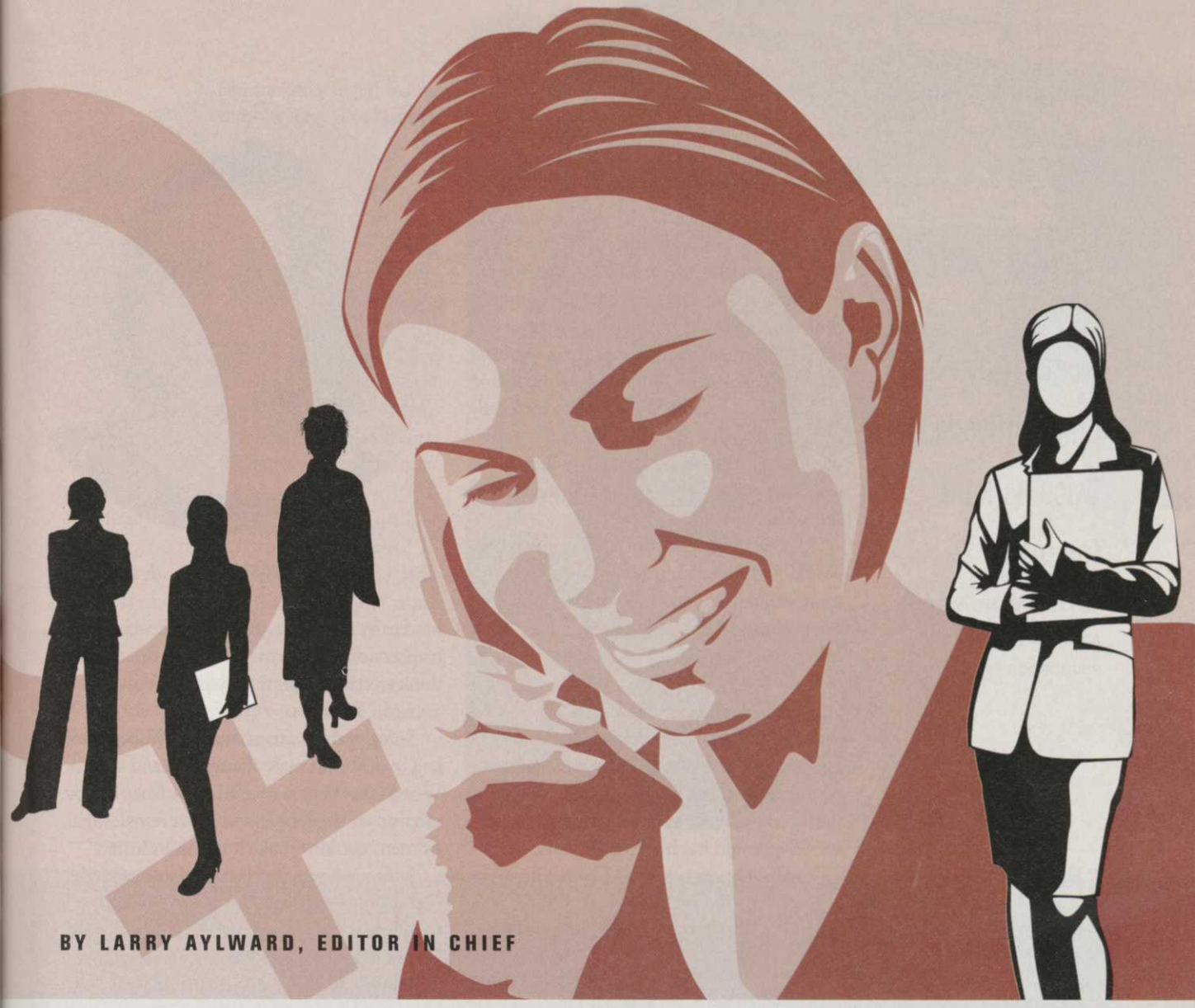

BY LARRY AYLWARD, EDITOR IN CHIEF

their professional marks on the corporate side

itoba-based Bayco Golf since 1988. Both women took different paths to the top.

The 73-year-old Cleary became CEO of Cleary Chemical when her father, William, who began the family business in 1935, died suddenly in 1965. The last of William's four daughters, Barbara was elected by her siblings to assume control of Cleary Chemical. At the time, she was 33, worked as a teacher and had two young children of her own.

"It was a baptism of fire," she remembers.

Her father, though, had made some good friends and contacts at other companies. Those people mentored Barbara when she took over the company. "They were very helpful to me," Barbara says in a still-grateful tone.

Anderson began her career with Bayco in 1986 when the company was a foundry. She sold industrial air-relief valves, nozzles and custom castings. When Bayco Golf began and she was asked to join the subsidiary, Anderson admits she didn't know a fairway distance marker from a ball washer.

But after attending many trade shows and learning the industry from the ground up, Anderson is recognized as the face of Bayco Golf, which ships its products to 30 countries. Anderson, meanwhile, travels throughout the world.

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"I love the business," she says. "It's a lot easier now than when I first started."

McLean, who celebrated her 28th year at Syngenta in May, has moved up the company ranks impressively. She has been on the golf side of the business for about five years after spending most of her time in the crop sector.

McLean says she had to prove to men early in her career that she could succeed in their world. "Unfortunately, that still exists in this and other industries, but it has gotten better," she adds.

McLean, who's African American, says she would like to see industry businesses recruit more women and other minorities. "You tend not to find African Americans and Hispanics, be it female or male, in the professional ranks of the industry," she adds.

Laylah VanBibber has forged a successful career at Kansas City, Mo.-based PBI/Gordon. She started at the company 20 years ago in the customer service department and has ascended to the company's advertising director, a post the 56-year-old has held for 10 years.

VanBibber says she had to work twice as hard early on in her career to make a positive impression on her male peers. "But I don't think women have any problem working twice as hard," she adds.

"I don't think women have any problem working twice as hard (as men)."

LAYLAH VANBIBBER,
ADVERTISING DIRECTOR,
PBI/GORDON

▲ Margaret McLean

Some of the women, like VanBibber, have had to deal with male chauvinism and sexism. When she began at PBI/Gordon, it was inferred to VanBibber and other females that women "couldn't make it in this industry."

In fact, when a female employee in the telemarketing department at PBI/Gordon said she wanted to attend a trade show to gain experience, VanBibber says a male salesman told her, "Women do not have a place at industry shows unless they're in bunny suits to attract people to the booth."

Early on in her career at Bayco Golf, Anderson says men showed her little respect at trade shows. "Men would just ignore me and talk to whomever else was in the booth that was a male."

Anderson also encountered sexism. Some men told her that she should be home with her kids. Others asked what her husband thought of her traveling around the country. "I would say, 'What does your wife think of your traveling?' "

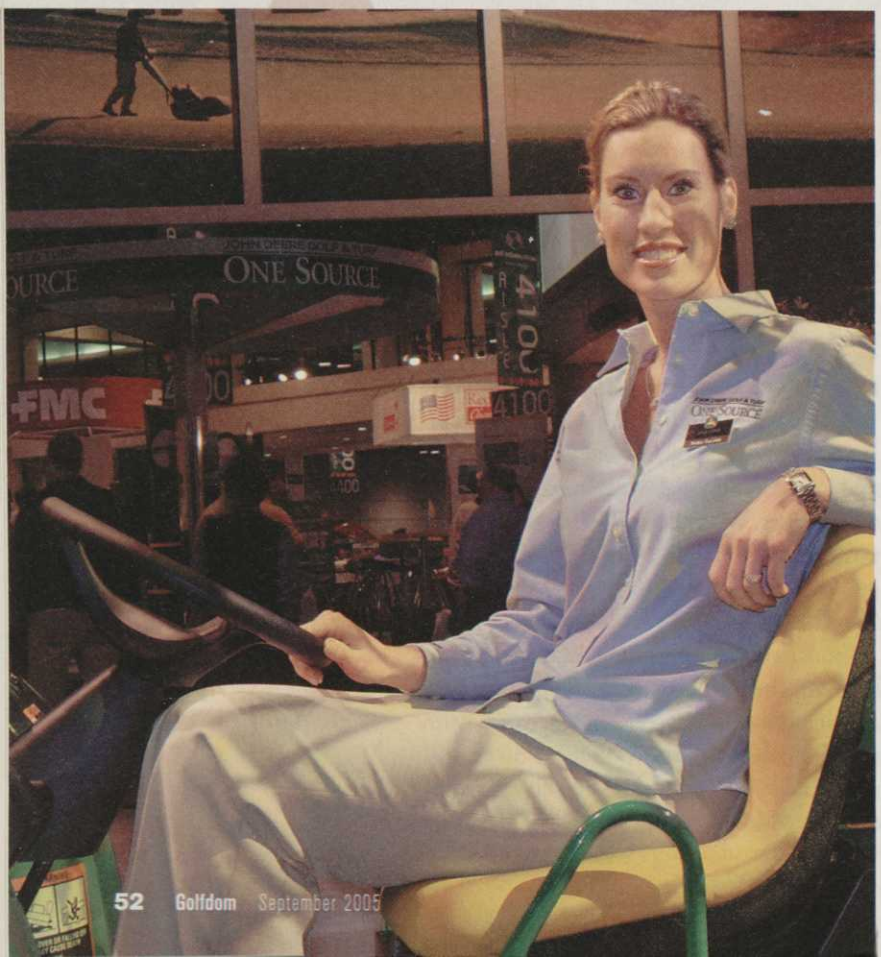
Another man once said to her, "Your sex life must suffer a lot when you're at trade shows."

Anderson says she looked at him squarely and shot back, "Same as yours."

The man turned and walked away.

Galanek has heard sexist comments, but she doesn't let them intimidate her. Sometimes she'll call out men for making them.

"If someone directly offends me or I feel



▼ Nicole Galanek

TOP PHOTO COURTESY: SYNGENTA; BOTTOM PHOTO BY: LARRY AYLWARD

▶ **Barbara Cleary (right) and her daughter Mary Ellen Warwick.**

PHOTO COURTESY: CLEARY CHEMICAL

like I'm being judged, I have trouble just sitting there grinning and bearing it," she says.

Galanek prefers to take a business-like approach in dealing with the matter. Sometimes she'll diffuse a comment simply by laughing it off.

"I'll be as professional as possible," she says. "I try not to be confrontational."

Galanek's aim is to get the person who made the sexist comment to think about what he had said and to understand why she considered it offensive.

Often, men make sexist comments without realizing what they're saying, Galanek says. "To me, that's the most frustrating part," she adds.

Cleary believes men respected her more because they knew she was president of a company. Hence, she didn't experience any sexism.

"I think that helped a great deal," she says of her title. "Everybody was kind of shocked that a woman of that age could be president of her own company."

On the flip side of sexism, industry women

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"I just go and do my own thing. You do get accepted, but you can't be one of the boys."

SHIRLEY ANDERSON,
PRESIDENT,
BAYCO GOLF

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say they've also experienced encouragement from their male counterparts. While VanBibber worked hard to realize a management position at PBI/Gordon, she says she had strong support from her male superiors.

"Upper management here has been very supportive," VanBibber says. "When I started here, there were no women managers."

▶ **Shirley Anderson**

PBI/Gordon now employs two vice presidents who are women and several who are managers, VanBibber says.

Galanek realizes she has the unwavering support of Breningmeyer, who says he hired the 30-year-old because of her solid work ethic, interpersonal skills and extensive education.

McLean cites two men, Jose Milan, Syngenta's global business manager for turf, and Joe DiPaola, Syngenta's golf market manager, as mentors who helped her advance in the golf market.

"There's nothing better than having somebody believe in you," the 52-year-old McLean says. "When someone believes in and trusts you, you don't ever want to let that person down."

Anderson says she received the utmost support from her boss, Bayco CEO Alex Colonello. "He would tell people, 'She's the boss. Go talk to her.' "

While Anderson says she's grateful for Colonello's support, she has had to work through

PHOTOS COURTESY: BAYCO GOLF (LEFT), PBI/GORDON (RIGHT)

some awkward situations on her own, especially when she was the only woman in the room.

"I just go and do my thing," she says. "You do get accepted, but you can't be one of the boys."

But Anderson doesn't feel like an outsider anymore, even if she isn't one of the boys. "Everybody is used to seeing me everywhere," she adds.

VanBibber says she's adjusted to being the only woman in the room during business functions, which happens frequently. "You have to have humorous comebacks, but still be a good sport, when inevitably some guy asks you to get him coffee," she adds.

But the men in the industry are getting accustomed to seeing more women at their business functions. Barbara Cleary has witnessed more and more women attending trade shows, such as the Golf Industry Show. One of them is her daughter, Mary Ellen Warwick, who's the vice president of Cleary Chemical. The 45-year-old has been working full time for the family business since she graduated from college in 1982. Growing up, she remembers traveling with her mother to places like Pebble Beach Resort.

"There are some beautiful golf courses to see in this country," Warwick says. "And they are nice places to make sales calls."

Like her mother, Warwick says she's been accepted and treated well by the men in the industry.

"I've always found it to be full of very nice people," she says. "I've had nothing but good experiences, and people are complimentary."

Warwick's words are good news for young women seeking careers in the golf course management industry. While the turf world is still a man's world, it's changing.

"The changes that have happened in the past 20 years, both in the workplace in general and in this industry, have been phenomenal," VanBibber says. ■

▲ Laylah VanBibber

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TURFGRASS TRENDS

AMENDMENT RESEARCH

Rootzone Amendments in Sand-Based Poa Sod Evaluated, Compared

By David Green II

Annual bluegrass (*Poa annua*) is an extremely adaptive grass species, used for closely mowed greens in cool climates (Cook, 1996). In areas where cloud or fog cover limit light intensity, annual bluegrass is naturally selected because of its increased photosynthetic rate over other grass species used on greens (Vargas, 1996).

Unfortunately, limited seed supplies and lack of readily available sod are problems when the annual bluegrass turf must be replaced. Currently, most golf courses maintain a nursery green to replace damaged turf, but when this material is lacking or exhausted, generally other grass species must be used.

Pre-grown sod is an alternative propagation method many turfgrass managers prefer, since propagating from seed can take several weeks to produce a useable turf sward. Most commercial sod is grown on native clay loam soils and the final sod product contains a 1/2 inch to 1 inch of the soil media attached to the roots (Davis and Pratt, 1982). Unfortunately, when applied on a USGA sand-based golf green, this clay loam creates an interface layer with the sand-based media that disrupts water, nutrient and oxygen movement in the rootzone.

Sand media alone has a very low cation exchange capacity, with poor nutrient and water retention. Therefore, a soil amendment is required to provide nutrient and water-holding capacity.

Sod grown on plastic is an alternative technique to alleviate this interface problem (Renaud and Turgeon, 1975). And washed sod or sod grown in similar sand-based media are alternatives that have been developed for sand-based golf greens.

A sand-based media is preferred for high-maintenance turf because it resists compaction, drains quickly and maintains good aeration properties (Bigelow *et al*, 2000). However, sand media alone has very low cation exchange capacity, with poor nutrient and water retention. Therefore, a soil amendment is required to provide nutrient and water-holding capacity. The amendment often used is an organic material such as sphagnum peat moss. Organic material does an excellent job of enhancing soil structure by improving aggregation and can be an excellent substrate for microbial growth. In addition to the structural benefits, most organic matter can hold several times its weight in water and has moderate nutrient-holding capacities (Bigelow *et al*, 2000).

Several inorganic materials are also used for amending sand media to improve nutrient and water-holding capacity (Bigelow *et al*, 2000). These materials are derived from

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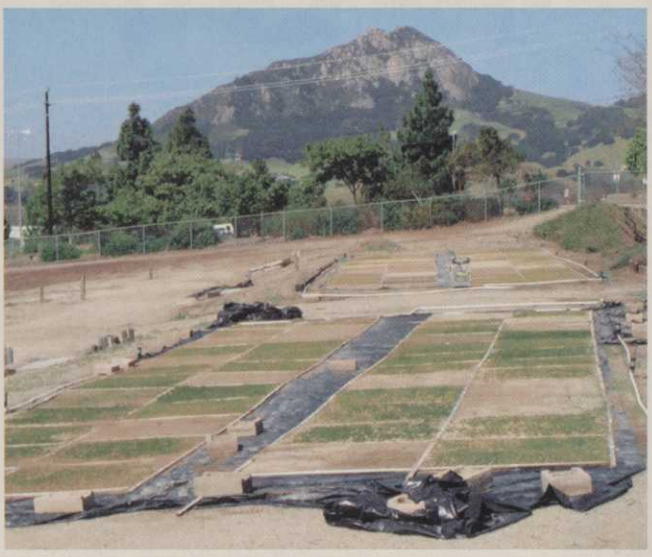
FIGURE 1



Evaluation of annual bluegrass sod production techniques in San Luis Obispo, Calif.

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large, naturally occurring mineral deposits. Some of the more commonly used products include calcined clay, expanded shale, diatomaceous earth and zeolite.

Calcined clay or porous ceramics have been heat-treated at temperatures between 1,000 degrees Fahrenheit (F) and 1,800 degrees F to increase their structural integrity (Bigelow et al, 2000). These materials have an extremely high water- and nutrient-holding capacity. However, the small pore sizes in these materials often hold moisture too tightly for plant availability. Zeolite is a relatively new amendment for turfgrass rootzones. This material has a three-dimensional rigid crystalline structure with tremendous water- and nutrient-holding capacity, yet water and nutrients are generally readily available to the plant (Shaw and Andrews, 2001).

Studies have shown that sand-based systems amended with zeolite improve germination rate, root and shoot growth, and turf quality on a creeping bentgrass green as compared to unamended sand (Ferguson et al, 1986).

Although studies have examined the influence of various soil amendments on the growth of turfgrass, research has not thoroughly examined the influence of these materials in a sod production system. The objective of this research was to define the optimal annual bluegrass sod production technique as influenced by soil amendment, propagule type and fertility rate.

Material and methods

Three studies to evaluate optimal annual bluegrass sod production techniques were conducted at California Polytechnic State University, San Luis Obispo, Calif., between 2001 and 2004.

Studies conducted between April and June 2001 examined the effects of soil media amendments, nitrogen rate and propagule type on annual bluegrass sod production. A fine-textured G-50 sand measuring 0.1 millimeters (mm) to 0.25 mm was obtained from a local source. Sphagnum peat moss was selected as the organic amendment. Profile calcined clay (Robison Fertilizer, Anaheim, Calif.) and ZeoPro GB-30 zeolite (ZeoponiX Inc., Louisville, Colo.) were selected for inorganic amendments. Sand was mixed with organic and/or inorganic amendments to create three soil medias — 20 percent sphagnum peat moss, 80 percent fine-textured sand; 20 percent Profile, 80 percent fine-textured sand; and 20 percent ZeoPro GB-30, 80 percent fine-textured sand. The final soil media used was 100 percent fine-textured sand.

A 25-foot by 60-foot, 4-milliliter (ml) polyethylene plastic was anchored to the ground, and 5-foot by 5-foot plots were established on the plastic with 1-inch by 2-inch fir-board dividers (Figure 1). Plastic was punctured with a pitchfork to allow for water drainage. Soil media were mixed on site and then evenly distributed to a 1-inch depth. Plots were then propagated with either seed (1 pound Peter-

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FIGURE 2

Mean percent density visual estimates as influenced by soil amendment on Aug. 17, 2004. Bars represent standard deviation at $P < 0.05$.

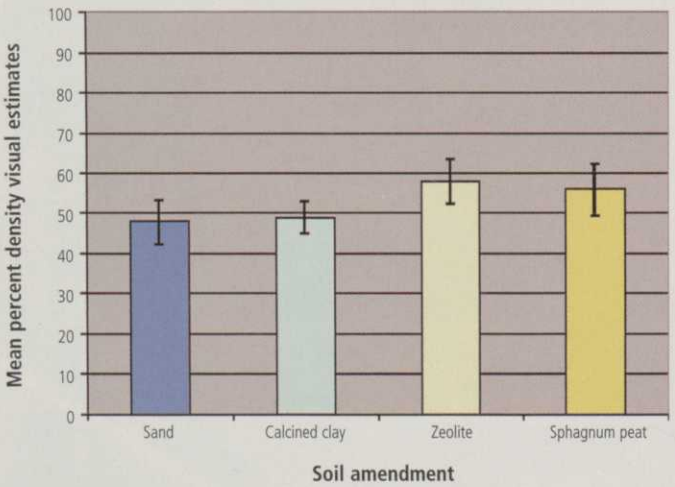
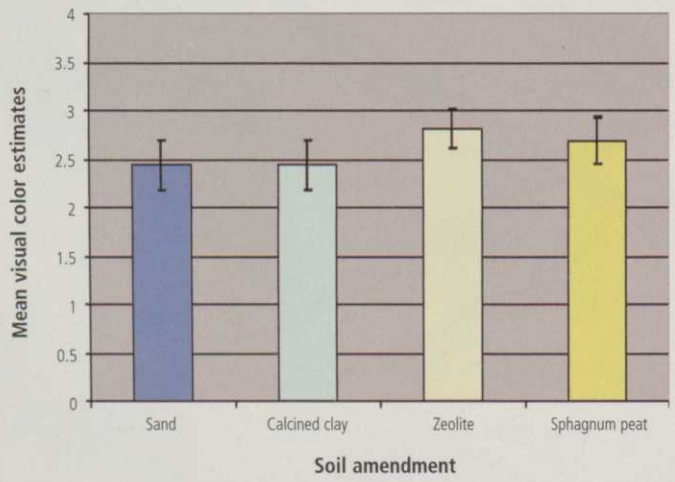


FIGURE 3

Mean visual color estimates as influenced by soil amendment on Aug. 17, 2004. Bars represent standard deviation at $P < 0.05$.



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son's creeping bluegrass seed per 1,000 square feet), plugs (0.75 cubic feet of 1/4-inch annual bluegrass plugs freshly cored from local golf green per 1,000 square feet) or a seed/plug combination (half propagule rates). Following propagation, plots were lightly tamped and irrigated for three minutes, five times a day. The sod plots were mowed at 1 inch, starting approximately four weeks after propagation. Heritage fungicide (Syngenta Professional Products) was applied on a preventative basis to control crown and basal rot anthracnose (*Colletotrichum graminicola*).

Ten days after propagation, each plot was divided into four equal 2 1/2-foot by 2 1/2-foot sections for application of the nitrogen treatments. Each 6 1/4-square foot section received one of four nitrogen rates (0.25, 0.50, 0.75 or 1 pound per 1,000 square feet) applied using a handheld shaker on a monthly basis using Greens King Ultra 18–4–10 ($N\text{-}P_2O5\text{-}K_2O$). The final experimental design was a 3-foot by 4-foot factorial with nested nitrogen effects in a randomized complete block design with four blocks.

Between May and August 2004 a third study was conducted. Experimental procedure was similar to the protocol listed above with the exception that only soil amendment and nitrogen rate were evaluated. The plug/seed combination previously described was used for propagation. The experimental design for the third study was a 4-foot by 4-foot factorial randomized complete block design with four blocks.

All study plots were evaluated weekly for percent density and color. Percent density was visually assessed using a 0 to 9 scale where 0 = $0^{percent}$, 1 = $1\text{-}11^{percent}$, 2 = $12\text{-}22^{percent}$, 3 = $23\text{-}33^{percent}$, 4 = $34\text{-}44^{percent}$, 5 = $45\text{-}55^{percent}$, 6 = $56\text{-}66^{percent}$, 7 = $67\text{-}77^{percent}$, 8 = $78\text{-}88^{percent}$, 9 = $89\text{-}100^{percent}$ coverage of the plot. Turfgrass color was visually assessed using a 0 to 4 scale, where 0 = sundown yellow, representing necrotic turf, 1 = electric radiance (bright yellow), representing chlorotic turf, 2 = fresh zest (light green), 3 = Irish delight (medium green) and 4 = green knoll (dark green), representing vigorous, healthy annual bluegrass turf. General linear model and least significant difference mean separation techniques (SAS Institute Inc., Cary, N.C.) were used to determine significant treatment differences among treatments.

Results

Soil amendment, nitrogen rate and propagule treatments all showed a significant ($P > 0.05$) effect on sod density and color in these studies. Propagule by nitrogen rate and soil amendment by nitrogen rate interactions were significant ($P > 0.05$) in 2001. Soil amendment by nitrogen rate was not significant and propagule effect was not evaluated in 2004.

Plug propagules consistently provided the quickest establishment with twice the density (70 percent to 90 percent) as compared to seed

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