

Paints & Color



A single red and white rose graces the center of the Rose Bowl each year.

Sports represent one of the largest industries in the American economy. Billions of dollars are spent each year for tickets, greens fees, television rights, corporate sponsorships and even legalized gambling. The stakes have become too high to leave such a valuable part of the American economy up to nature alone.

Stadiums and golf courses are the stages and scenery for many of these sporting events and the sports turf manager has become the stage manager. But unlike the stage manager of an auditorium or theater, the sports turf manager must work with the vagaries of nature to prepare his stage for major events. Not only must he install

and maintain the sports landscape to withstand unpredictable weather, he must also possess the skills to present spectators, television viewers and athletes with "their impression" of what a field or golf course should be even when conditions do not allow turf and plants to look their best. The sports turf manager is rapidly learning that colorants and paints are tools which enable him to satisfy the economic expectations placed on turf.

While paints and colorants are really products of the 1960s, they are only beginning to be used on a wide scale today. They originated where you might expect, on motion picture and television sets. Larry Krie-

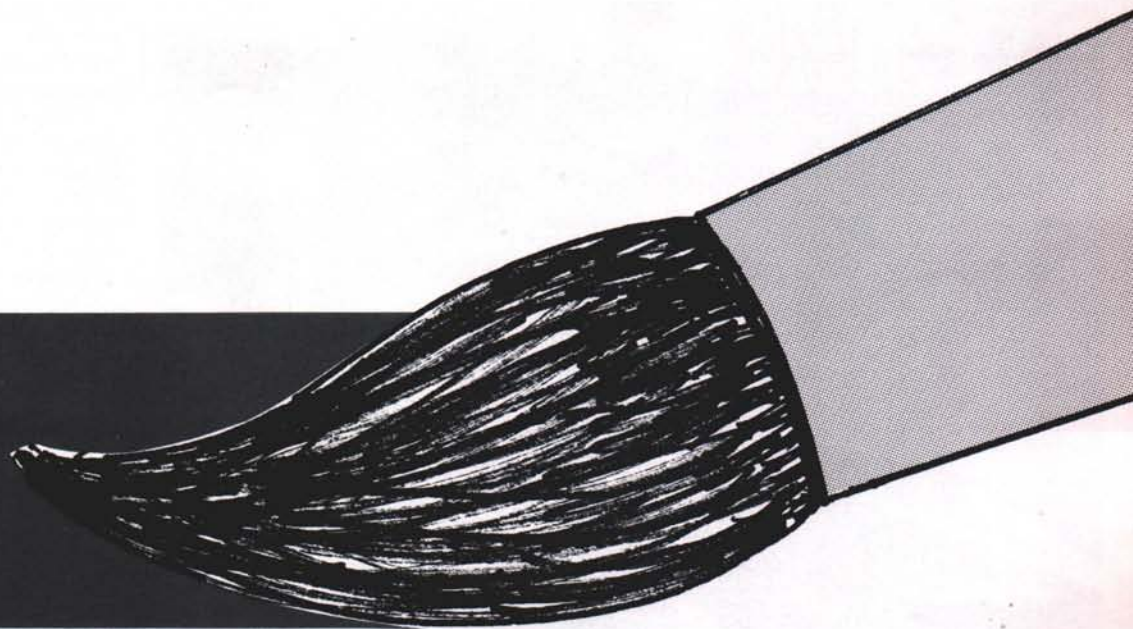
ger was one of the first experts on turf and plant colorants in Hollywood in the late '50s. As owner of a small paint company in Los Angeles he frequently received calls from the studios during the winter when the California weather was clear and bright but the turf was dormant. While color motion picture film was developed in the late '30s, producers and directors were just beginning to make the most use out of color 20 years later. They needed a paint that would make the studio lawns as bright green as it would normally be in spring without causing permanent damage.

Krieger developed a combination of three to five different dyes in a water-soluble acrylic latex base to spray the dormant bermudagrass on the sets. Unlike previous attempts to color turf, his paint did not track or rub off the turf once dry. Krieger began experimenting with diluting the concentrated paint with water to lightly coat the blades of the turf with enough pigment to impart the right shade of green without clogging spray equipment or destroying the natural texture of the turf.

About the same time, President Dwight Eisenhower was attracting tremendous attention to golf. When the President visited Palm Springs in the winter to play the common bermudagrass fairways and Seaside bentgrass greens they were frequently a patchwork of tan and dull light green. Winter overseeding was in its infancy as were turf irrigation systems, so many of the courses were at the mercy of nature even though they had some of the best superintendents in the country.

To bring the courses up to presidential quality, some superintendents borrowed a few tricks from Hollywood and painted the greens. They discovered the paint had lit-

ants



tle effect on the playability of the greens while it made a great impression on golfers attracted to the sport and the area by the president.

As the popularity of the sport spread and new resort courses were built in the Desert Southwest, superintendents passed on the techniques of painting turf to one another. Later, improved bentgrasses and ryegrasses combined with improved irrigation systems, challenged painting as a method of providing winter color to the courses. Nevertheless, painting dormant bermudagrass fairways or greens is still practiced at various courses in the Southwest.

With recent concern over water conservation and winter maintenance costs, some courses are returning to paints. "Courses with limited winter play or tight budgets can save the cost of overseeding, minimize their water use and cut back on maintenance and labor costs in the winter without closing," explains Jim Wellborn, marketing manager of Wellborn Paint Manufacturing Co. in Albuquerque, NM.

Superintendent Harold Vaubel at the Tournament Players Club at Starpass in Tucson, AZ, has become one of the leading experts in golf course painting in the Southwest. He paints the fairways of the elite, private course after his major tournament every October. "Only club professionals and members play the course in the winter," states Vaubel's assistant Bob Saltzman. "Water is just too precious here to overseed the fairways. We do overseed the tees with perennial ryegrass and the greens are Penn-cross bentgrass. Even though the fairways are painted, we mow them once a week and repair divots with sand painted with the same paint (Instant Spring from Wellborn)."

Green paint also had its stadium debut



Montana State University painted a blue, yellow and white logo on the center of its stadium field for its fighting bobcats.

in the Southwest. The Los Angeles Coliseum was selected in 1967 as the location of the first Super Bowl. The National Football Conference had just merged with the American Football Conference. The National Football League wanted to present a championship between the winners of both conferences and create a media event. The common bermudagrass in the Coliseum was dormant. NFL Commissioner Pete Rozelle wanted an impressive green field for the contest to be televised nationally. If the studios could paint the turf on their sets during the winter, the NFL saw no reason why it could not do the same for its important premiere at the Coliseum.

Rozelle borrowed George Toma, grounds manager for the Kansas City Chiefs who had gained a reputation for his work during the National Conference playoff at the Cotton Bowl, to prepare the field. Ironically, the field was not painted for Super Bowl I. Instead, Toma "woke up" the bermudagrass with calcium nitrate and used a mowing pattern to help highlight the field. When the next Super Bowl was held in the Coliseum, Toma did paint the field after seeing how golf course superintendents in the area used the paints successfully.

But green and white wasn't enough for the promotion-minded directors of the Rose

continued on page 16



The Rose Bowl field is touched up just prior to the Super Bowl by Rich Toma and his crew.



Colorant added to spray tank lets applicator cut down on overlaps and skips on fairway.

Paints and Colorants

continued from page 15

Bowl in Pasadena. To make Pac-10 champion Oregon State University feel at home in the Rose Bowl in the '60s, they wanted to paint the goal line orange. After getting approval from the National Collegiate Athletic Association, a city crew mixed yellow and red paints together and added a third color to the field. Later, the sidelines were widened to 12 feet and painted with team colors each year.

In 1973, the local Jaycees took over the painting of the field for the Rose Bowl. Don Murphy, a Pasadena architect and member of the organization, took special interest in the project and started to design multi-

colored insignias for the end zones. He recruited local nurseryman Phil Ishizu to help with the painting.

"Colleges just didn't paint their fields in those days," recalls Ishizu, "especially not with designs like Don's. For the Rose Bowl between Stanford and Michigan we hand-painted an Indian head and war bonnet in the Stanford end zone and a Wolverine in Michigan's. Each feather on the bonnet had to look as real as possible. The only experience I'd had before then was painting a large mural in high school. It was a real challenge to paint on turf."

For 15 years, Murphy and Ishizu have worked together decorating the Rose Bowl like football fields have never been painted before. "For the 50th anniversary of the Tournament of Roses, we decided to put something on the field other than lines and numbers. Don designed a yellow birthday cake with candles for the center of the field." The next year four yellow roses were painted in the center. Finally, the now-famous single red rose bordered with white was designed. This rose has graced the center of the field ever since with one exception. During the Bicentennial, a shield containing stars and stripes replaced the rose. "We also painted eagles in each end zone," recalls Ishizu. "Each eagle had 30 feathers!"

To help the Rose Bowl formulate all these colors, Decatrends, a Pasadena-based paint company, has worked closely with Murphy and Ishizu the past 15 years. Each year 400-500 gallons of paint are used. "First we outline the design with short lines, and then fill it in with up to three coats of paint," explains Ishizu. The process takes three or

more days. After the game, grounds manager Rich Gonzales verticuts the paint out of the Santa Ana bermudagrass turf overseeded with perennial ryegrass.

Toma and his son Chip, who are responsible for painting the Super Bowl and Pro Bowl for the NFL, work closely with Mautz Paint Co. in Madison, WI. "Some paints can damage grass," explains Toma. "The NFL expects us to leave each field we paint in as good or better condition than it was when we arrived. The paint company also has to be willing to make small batches of certain colors. For example, Mautz recently made the aqua blue and orange paints for the Dolphins at Joe Robbie Stadium. They also supply the paint for the exhibition game held in Wembley, England. Once you build a relationship with a paint company, you stick with them."

While each gallon of paint is diluted with two to five gallons of water for field decorations, it is diluted with roughly 15 gallons of water for coloring turf green. "You can't dilute it any more than that," says Krieger, "or the acrylic binder won't cause the paint to stick to the turf properly. Using less water than that really is a waste of money and you risk clogging the nozzles. You just don't need more than that." Krieger's Green Stuff has been used in the Rose Bowl.

The other thing Krieger stresses is application. "You can use an airless or even hose-end sprayer for small areas, but a boom sprayer works best for large areas. The sprayer must have a pressure gauge on the boom and an automatic shutoff to do a good job. The spray should be agitated constantly and pass through a 50-mesh screen before going to the nozzles. It's also important to have a tractor with a tachometer so you can maintain a constant speed while spraying."

To prevent wind from disrupting application, Krieger lowers the boom to four inches from the surface, maintains a boom pressure of 40 psi, and travels at between three and five mph. He uses T-jet nozzles spaced ten inches apart. "The object is to know how many gallons per minute per nozzle you are applying. Each gallon of concentrate should cover between 4,000 and 5,000 square feet."

Coloring the turf is just one benefit of green paints explains Dr. Ed Kajihiro of the Opti-Gro division of Mantek. The company's Green-Em-Up (formerly Wintergreen) has been used primarily by stadiums, including the Rose Bowl, Candlestick Park, the Cotton Bowl, Gator Bowl and Liberty Bowl. "The leaf of the turf actually absorbs the paint," says Kajihiro, "that is why we recommend it be applied when the turf is dry. The thin, porous film reduces water loss from the leaves and protects them from cold, dry winds. It strengthens the cuticle (waxy, outside layer) of the leaf blade making it more flexible and resilient to wear. As turf goes dormant it loses the cuticle and be-

continued on page 18

Paints and Colorants

continued from page 16

comes increasingly exposed to weather and wear."

The paint, however, does not block out sunlight, its dark color absorbs it. The turf continues photosynthesis and respiration assisted by higher temperatures for a longer part of the day. "A bubbler is mixed with the acrylic base," explains Krieger. As the paint cures, the bubbler creates tiny pores in the film coating that allow small amounts of air and moisture to pass through." Kajihiro says that the smaller pores of the paint prevent disease spores (tiny, reproductive organisms) from attaching themselves to the surface of the turf. The coating is also flexible allowing the leaf to expand and contract with changing temperature.

Sal Genito, superintendent of grounds maintenance at Clovis, CA, School District, has used Mantek's paint to warm up the surface of the high school stadium field. "Barney Barron from Candlestick Park gave me the idea," says Genito. The paint protects the bermudagrass as it goes dormant while it speeds up germination of overseeded ryegrass. "It acts like a germination cover and costs less than \$150 for the whole season. The fact that it makes the stadium field green is almost a side benefit."

Genito also thinks the paint may speed

up spring transition of the bermudagrass. "My main goal is to protect the bermudagrass," Genito points out. He goes so far as to kill the ryegrass at the end of the football season so it won't compete with the bermudagrass in the spring.

A football field is roughly an acre and a half, but an eighteen-hole golf course may be 140 acres. Nevertheless, the cost of the paint needs to be compared to the cost of water, chemicals and labor needed to maintain overseeded turf. Obviously, athletic fields and golf courses with considerable play in the winter need an actively growing turf that can recover from divots and wear. But if it receives only limited play, paints may be a cost-effective substitute.

"Nothing stands out like a target better than dark green turf in the middle a dormant, tan driving range," says Wellborn. "Why overseed and maintain dormant target greens on driving ranges when you can paint them?"

Still some superintendents and sports turf managers prefer to do what they've been trained to do, grow grass. But, that doesn't mean they don't use colorants of some type. Spray indicators, colorants which usually last less than 48 hours are being used by more and more sports turf managers as part of their chemical program.

When a sports turf manager is applying

herbicides and fungicides designed to work in amounts of ounces per 1,000 square feet, the spray pattern becomes critical. Poorly calibrated sprayers or clogged nozzles can destroy the effectiveness of these expensive materials. Furthermore, when spray equipment operators can't clearly see where they have sprayed, they are likely to skip areas or overlap unnecessarily. The result is poor control or wasted chemicals.

Furthermore, operator exposure to pesticides or double and triple rates on turf caused by excessive overlapping need to be identified quickly. Colorants, when mixed with pesticides, show where the pesticide has reached and remains. They alert the sports turf manager that he has been exposed personally to these chemicals, something he might not be aware of without the colorant. They also provide an accurate indication of how well spray equipment and tanks have been rinsed following application. This extra precaution against unnecessary personal and environmental exposure to chemicals should alone justify the addition of colorants to spray mixes.

Unlike a paint, a colorant does not contain a binding agent that makes it adhere to and coat the turf. In fact, colorants should degrade rapidly when exposed to sunlight. They should also wash off the turf with dew or light irrigation cycle.

HAVE A FIELD DAY

Meet the nation's leading groundskeepers and specialists at the Opti-Gro™ Athletic Field Maintenance Seminar

And get first-hand information on the latest techniques to improve the quality and appearance of your turf and grounds.

This comprehensive, 2-day seminar is designed to increase the effectiveness of your grounds care program and to optimize the return on your maintenance dollars.

For more information about the seminar and how to register, call TOLL-FREE 1-800-241-3302; in Georgia, call 404-952-0228; or write: Athletic Field Maintenance Seminar, Opti-Gro Division of MANTEK®, 1775 The Exchange, Suite 300, Atlanta, Georgia 30339.

Atlanta, GA January 11 & 12	Raleigh, NC February 1 & 2	Milwaukee, WI February 29 & March 1
Austin, TX January 18 & 19	Lubbock, TX February 8 & 9	Chicago, IL March 7 & 8
Houston, TX January 21 & 22	Indianapolis, IN February 15 & 16	Cincinnati, OH March 21 & 22
Nashville, TN January 25 & 26	Tulsa, OK February 22 & 23	The Meadowslands, NJ April 11 & 12



Opti-Gro™
Advanced Grounds Technology

A Division of MANTEK



Colorants need to be distinguished from dyes, explains Miller McClintock, a representative of Milliken Chemicals, manufacturers of Blazon colorant. "Dyes are designed to react with surfaces to which they are applied," he states. "For example, dye molecules react with fabric molecules in order to bond the color to the fabric. Colorants, on the other hand, should not react with turf, equipment, clothing, skin or surfaces they may contact during use." Colorants should also be highly soluble in water and chemically compatible with most turf management chemicals. McClintock suggests sports turf managers check the pH (acidity or alkalinity) of colorants before mixing them with chemicals that may be less effective when pH gets outside of a certain range.

Color concentration and the operator's perception of color are two important factors in selecting a colorant, says Roger Underwood of Becker Underwood, makers of Turf Mark colorant. "While one quart of colorant in 100 gallons of tank mix might be barely enough to color tall, thin turf," he explains, "it might be too much for a dense, short-cut green. Different applicators also prefer different amounts of colorant when they spray. Generally 16 to 24 ounces of colorant per 100 gallons of solution should meet most applicators' needs."

Blue colorants are the easiest to see and



Spray indicators enable applicators to see where they have sprayed herbicides and if they have achieved good coverage.

break down the fastest according to Greg Richards of Lesco, Inc., maker of Tracker. "Blue shows up well in both sunny and cloudy conditions. It is also very photosensitive and breaks down rapidly in sunlight." Richards says Tracker is recommended for application at eight to 16 ounces per acre. "We are introducing a one gallon size for turf managers who typically spray four or less acres at a time," says Richards.

A quart size is the most convenient for athletic field managers, says Mike Thurow, general manager of Precision Laboratories.

The company's Signal is available in quart containers that can be mixed without measuring in 100 gallon spray tanks. "We've also found a large number of schools, parks and golf courses use back pack sprayers when applying herbicides around fences, buildings and trees. The smaller container simplifies mixing to these smaller users."

Colorants are also used by sports turf managers and golf course superintendents to add beauty to lakes and water features. "Water in some areas of the country ranges from brown to green in color," says Mike Palmer, marketing manager of Rochester Midland in Rochester, NY. "This can sometimes reduce the visual impact of fountains or other water features. By adding a blue colorant to the water, the attractiveness of the lake, fountain or reflecting pool is increased."

In addition to the aesthetic value of lake colorants, a product called Aquashade has the ability to shade out subsurface aquatic plants before they reach the lake surface. The blue colorant, however, will not harm fish or desirable surface plants such as water lilies.

Despite his education and skills in helping nature take its course, today's sports turf manager must occasionally take matters into his own hands and add a little color of his own. ●

PRESCRIPTION ATHLETIC TURF

Patented All-Weather Natural Grass

INSTALLED BY THESE REGIONAL LICENSEES

CANADA
David Moore
416-451-3952

Paul Franz
617-774-1663

Bob Hummer
717-898-0420

Jerry Hutchinson
516-981-1118

George Wyatt
502-456-5630

Turner Gibson
1-800-841-6413

Jack McGillis
509-529-4580

Don Morgan
714-637-7600

Jim Eagle
817-731-4957

INTERNATIONAL

John Souter
011-44-786-2141

Larry Eldridge
514-849-3247

TURFGRASS SERVICES CO.

W.H. Daniel
317-463-2202
2202 Trace Twenty Two
W. Lafayette, IN 47906

L.C. Meade
303-544-4511
44 MacArthur Rd.
Pueblo, CO 81001