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Charles Santoianni, superintendent of Island Hills Golf Club, Sayville, New York, found that mechanizing some operations

and modifying his fungicide program provided the increased efficiency he needed in the face of increasing golfer traffic.

seven and one-half hours (three men at two and one-half hours each) to three hours (one man). A Hahn Triplex greensmower reduced mowing time on greens, aprons and tees from 10 hours (four men at two and one-half hours each) to three and one-half hours (one man). "And one-half hour of that time is spent greasing the machine," the superintendent noted. "Since we mow daily, that savings in time amounts to \$28 a day."

"Also," he added, "since we've become more mechanized, we can put more men to work on maintaining the rough, which has always been our biggest headache."

Santoianni has ordered a Cushman spray wagon which will reduce the 24-hour job of spraying greens (two men at 12 hours each) to four or four and one-half hours (one man). "I'd like to get two wagons eventually to use on the fairways," he added. "We could get all the fairways sprayed by two men in five or five and one-half hours."

### Savings Pay for Equipment

Any new equipment carries a significant initial cost, Santoianni pointed out. But he believes the long-term savings — and a better looking course resulting from timely maintenance — will make them well worthwhile. His goal is not to put good employees out of work, but to avoid increasing the size of his crew more than necessary, eliminate overtime from the payroll whenever possible, and get work done on time.

Santoianni's second cost-cutting move consisted of taking a long, hard look at his fungicide program. What he saw caused him to modify his program and resulted in a savings in cost.

"For the last couple years, Pythium has been our big problem around here," Santoianni said. "I'd been using a contact fungicide that was costing me a total of \$1,400 for three applications on my fairways over a one-week period. I tried a different product — Acti-dione RZ — and found out I could control

Pythium for one-quarter to one-half the cost."

Santoianni made that particular discovery almost by accident. "I'd been using Acti-dione RZ in my fungicide program since 1956, but I hadn't really tried it on Pythium."

Simply experimenting with a different fungicide may save Santoianni as much as \$1,000 each time he treats a Pythium outbreak on his fairways, he said.

### Curative to Preventive

Over a two-year period, Santoianni has been gearing his fungicide program away from a curative approach and toward a preventive program. This involves less reliance on full-systemic fungicides and greater reliance on a four-season, full-fairways program.

Despite the greater cost of a full-fairways application, Santoianni believes it saves money over the course of a season by minimizing the number of curative applications and the damage that occurs before the disease is controlled.

(continued on page 28)

# Exhalt 800, the Winter Coat.

It's only a thin film. But it wraps your turf up safely for the Winter. Helps keep it healthy, all through the dormant season.

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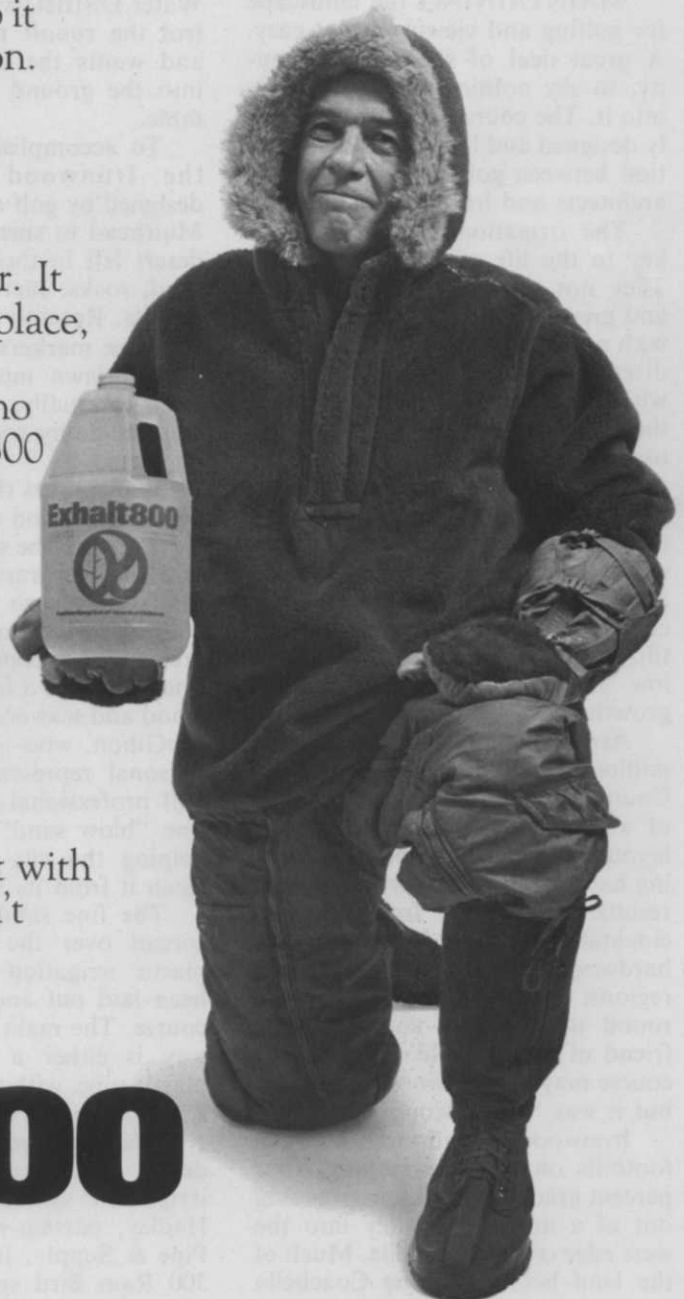
No matter how cold or windy, no matter how much rain or snow, Exhalt 800 lasts until active turf growth begins.

Your investment in fungicides won't get washed away!

## Easy and Economical

Only 1 pint per 100 gallons of fungicide solution. Spray it on. It dries within an hour.

After spraying, rinse equipment with water while it is still wet. Residue won't damage equipment — or clog it when next used.



# Exhalt<sup>TM</sup>800

Sticker-Extender

Crop Protection Division, Kay-Fries Chemicals, Inc., Stony Point, N.Y. 10980

## Coachella Valley

# Greener By The Year

MAINTAINING the landscape for golfing and viewing is not easy. A great deal of skill and ingenuity, to say nothing of money, goes into it. The courses must be carefully designed and laid out in consultation between golf pros, golf course architects and irrigation engineers.

The irrigation systems are the key to the life of the golf courses. They not only water the fairways and greens, but they also feed them with nutrients and keep them free of disease. The irrigation systems, while watering the lawns, can feed them with soluble fertilizers and are used to spray on pesticides.

More and more golf superintendents are applying fertilizers through the irrigation systems. Fertilization, as it is called, saves on labor, is fast and can be precisely controlled. Inexpensive soluble fertilizers can be applied oftener and at low rates for steady, continuous growth.

Arnold Palmer's beautiful, new million-dollar, 125-acre Ironwood Country Club course is an example of a first class, ultra modern golf layout where planning and engineering have combined to produce great results. The name, Ironwood, incidentally, is taken from that of a hardwood tree that frequents arid regions. After playing a practice round on the new course, a pro friend of Palmer told him that the course may be Ironwood to Palmer, but it was "wood wood" to him.

Ironwood is contoured between foothills on a gently sloping (four percent grade) alluvial fan spreading out of a mountain valley into the west edge of the Coachella. Much of the land belongs to the Coachella

Water District, which wants to control the runoff through the valley and wants the water to percolate into the ground to feed the water table.

To accomplish these objectives, the Ironwood fairways were designed by golf architect Desmond Muirhead to surround "islands" of desert left in their natural state — sand, rocks, cactus, and even jack-rabbits. Recently some of the poly-vinyl tee markers were damaged as though lawn mowers had chewed them. Actually, the scarring had been made by coyote pups teething on them.

Water seeps through the natural desert formation readily. Too readily. It needs to be stalled near the surface to give grass roots the opportunity to absorb the moisture. The stalling effect on the Ironwood greens was accomplished by mixing fine sand with a forest mulch of redwood and seaweed, explained Glenn McGihon, who is Arnold Palmer's personal representative, as well as golf professional at Ironwood. The fine "blow sand" was obtained by helping the city of Palm Springs clean it from its streets.

The fine sand and mulch were spread over the greens after the plastic irrigation pipe system had been laid out and in place for the course. The main line for each fairway is either a 4-inch or 8-inch plastic pipe, with the laterals 1 1/4" to 2" in diameter.

The man who helped in the design of Ironwood's \$250,000-plus irrigation system was Bryce A. Hadley, partner-manager of Indio Pipe & Supply, Inc. More than 1,300 Rain Bird sprinkler heads are

strategically located throughout the course. Many are rotor pop-up heads that pop up when water pressure is applied. The Rain Bird TH valve is used on the course because it doesn't clog from the sand in the water. Each valve controls a lateral that has an average of six sprinklers.

A completely automatic watering system is maintained through Rain Bird station controllers, with twelve stations on each controller, on the average. In addition, the course is one of the few equipped with tensionometers that monitor moisture in the soil. Golf course superintendent Michael McGehee is using them to learn how much moisture is required to maintain field capacity.

"Because we wanted everything at Ironwood to be first class," commented McGihon, "we wanted to make certain that the irrigation system was first class too. So we selected Rain Bird equipment. Another reason was that Mr. Hadley, the Rain Bird distributor, was close by in Indio. He worked closely with us all the way." In fact, 29 of the 36 courses in the Palm Springs area use Rain Bird equipment.

At present, the irrigation system is supplied by water from one well. It has a capacity of 1.4 million gallons per day. At the course's reservoir pumping station, 2,300 gpm is maintained at 125 psi. The average head pressure is 62 psi,

*(continued)*

**Right:** *The rugged beauty of the desert mountains provides a picturesque backdrop offsetting the lush green of the fairways in this view from the clubhouse.*





View of Rain Bird No. 51 SAM rotor on first landing zone from the tee in the most unique golf course in the desert. The roughs are undisturbed natural desert and the golfer must tee off over the natural roughs to the landing zone.

## COACHELLA (from page 24)

McGehee said. The course has six lakes, three of them reservoirs and the other three water hazards. All of their bottoms are lined with polyvinyl to prevent seepage.

As desired, the irrigation system also delivers ammonium sulfate and nitrogen for fertilizer, as well as potassium for root structure. McGihon, who appears to know as much about the horticultural side of golf as the playing side, finds that fertigation is "really the answer" to feeding. He believes the irrigation system also will be the answer to combating such invaders as fungus. It can be treated with pesticides delivered through sprinkler heads. Fungus is less of a problem than in more humid regions, he said, but it still can get a foothold in the desert where grass requires frequent watering.

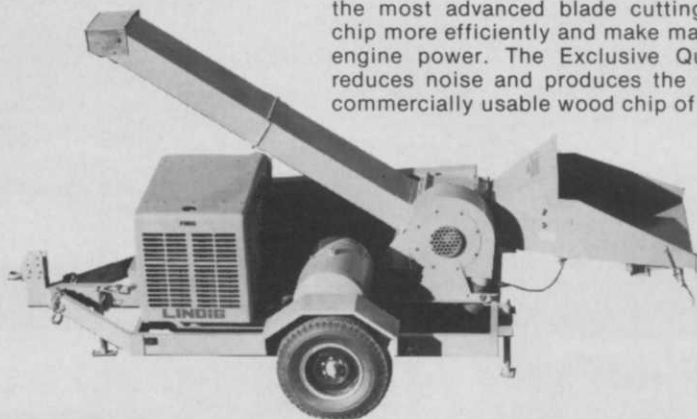
A major green thumb experiment is under way at Ironwood. It could result in greatly minimizing the keeping-things-green problem for future desert golf courses. The standard practice at those courses is to plant the fairways in bermudas and to overseed with winter rye grass in the late fall. This is done so that the rye can take over during the six or more weeks that the bermuda is brown and dormant. It has been necessary to use the bermudas because they are the only grasses known that will withstand the desert heat. Unhappily, the bermuda dormant period happens to coincide with the peak of the winter visitor season in the Coachella. Overseeding with rye costs all the Coachella courses a grand total of more than one million dollars per season just for the seed alone. No small item.

In considering the different kinds of grasses that might be used for the Ironwood fairways, McGihon wondered if some way might be found to eliminate or at least cut down on the expenses of the overseeding. The cost of winter rye seed has been as little as three to five cents a pound. However, last year the price went up from 5.6 cents a pound to 38 cents. It takes 400 to 600 pounds per acre.

"We were ready to seed about the middle of September," McGihon recalled. "If we'd put down a hybrid bermuda it would be

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**herbicide programs  
control tough brush,  
including evergreens,  
for 3 to 5 growing seasons.**

**And what more? Banvel herbicides permit  
grasses to flourish where you want grasses  
... because Banvel, a selective, systemic  
herbicide, gets to the roots of vegetation  
problems by translocation.**

**Turn the page for reasons why Banvel  
herbicidal effectiveness becomes the key  
to cutting the cost of vegetation control. . . .**

# Why and how Banvel® industrial herbicide formulations in your vegetation control program make excellent economic sense....

**Q.** We've sprayed picloram for two or three cycles and got rid of many brush species, but the tough brush gets bigger and tougher. Our problem is to control a mixture of oak, ash, hickory, poplar, sassafras, cedar . . . well, you name it. What formulation do you suggest in a long-term selective brush control program along our transmission line right-of-way?

**A.** Basal applications of Banvel®-510, one pound dicamba and two pounds 2,4,5-T per gallon, has proved effective

and economical for the control of both hardwood and evergreen species, including root-suckering trees such as sassafras, chokecherry, aspen, sumac, and locust.

As with picloram, Banvel-510 herbicide is applied by hydraulic spray, using a mix of two gallons of Banvel-510 in 98 gallons of oil, at the rate of approximately 100 gallons of spray mixture per acre of brush.

Spray the basal parts of the brush and tree trunk from the ground line up to a height of 1-1/2 to 2 feet. Spray until runoff, with special emphasis on covering the root crown.

Treatment may be made at any time during the year.

As a foliage spray with water, use Banvel®-320 or Banvel®-710 at the rate of one gallon in 99 gallons of water and spray the entire plant to runoff.



**Q.** Our experience indicates that picloram is a long-residual material, and our company is greatly concerned about this. How does Banvel dicamba compare in this regard?

**A.** The half-life of picloram is in excess of 100 days. The half-life of Banvel dicamba is 25 days. Once Banvel dicamba gets into the plant system, it works over a period of two or three years in disrupting the plant's cellular structure. In the soil, Banvel dicamba that is **not** absorbed by the root sys-

tem of the plant dissipates quickly. It breaks down into harmless compounds in the process of biodegradation.

Soil moisture, organic matter content and temperature greatly influence Banvel dicamba degradation, but metabolism by soil micro-organisms is the major factor in degradation.

**Q.** Can we tank mix Banvel dicamba with 2,4-D and 2,4,5-T?

**A.** You certainly may. Banvel herbicides have Federal label registration for tank-mix combinations with the phenoxyes for both water- and oil-

soluble formulations. Also by tank-mixing with 2,4-D and 2,4,5-T, you can double the acres you can spray.

**Q.** Some parts of our right-of-way are cattle-grazed. We find that picloram is not registered for use in grazing land. What about using Banvel herbicide here?

**A.** Banvel dicamba herbicide has Federal registration for use on pasture

grasses. Established tolerance in grass is 40 ppm and in milk, 0.05 ppm. There is no withholding period for meat animals on Banvel dicamba when used alone on treated areas, with this exception: do not graze meat animals on treated areas within 30 days of slaughter. Also, do not graze dairy animals on treated areas within 60 days after application at high application rates;

up to 90 days delay is required before harvesting hay.

No tolerances have been established with 2,4-D or 2,4,5-T in or on grass. 2,4-D, 2,4,5-T and picloram are federally registered for use on pasture grasses. However, picloram has EPA registration for use in Texas.

**Q.** What about Banvel 4-W.S. herbicide toxicity?

**A.** Banvel® 4-W.S. herbicide was developed and tested during the period when extensive toxicological and residue requirements were necessary to obtain Federal registration. It has met

every requirement of the USDA, the FDA and the EPA in this regard, and obtained label clearance for industrial brush control in 1968. Be sure to observe grazing and harvesting restrictions shown on the label.

Although Banvel 4-W.S. is several times more active on brush than the phenoxy compounds, it is approxi-

mately five to ten times less toxic than 2,4-D or 2,4,5-T. The LD<sub>50</sub> in rats for dicamba acid is 2900 mg/kg. 2,4-D is 300-470 mg/kg, and 2,4,5-T is 390-640 mg/kg.



**Q.** Much of our right-of-way is overgrown with a varied mixture of brush and weeds. What chemical should we use in a foliar spray?

**A.** If there is a mixture of species—conifers, softwoods, hardwoods, vines—you need a formulation that controls the broadest spectrum. Use Banvel-320, containing one pound dicamba, one pound 2,4-D and one pound 2,4,5-T per gallon. Or use Banvel-710, containing one pound dicamba

and two pounds 2,4,5-T per gallon. Banvel dicamba alone controls most species, including softwoods that phenoxyes do not control. Moreover, Banvel dicamba permits grasses to flourish.

**Q.** I have willows taking over my ditch banks. Picloram and 2,4,5-T are not registered for ditch bank use. What chemical can I use to get rid of these trees and a lot of other brush and weeds?

**A.** Banvel 4-W.S. dicamba gives excellent control of willows and their destructive, water-seeking roots, and is registered for ditch bank brush control. It also destroys broadleaf weeds and extensively rooted vines. Because it is a selective weedkiller, at proper

dosages it will not harm grasses, so you can avoid erosion along banks of irrigation or drainage ditches. Banvel dicamba, alone or in combination with 2,4-D, is registered for vegetation control along ditch banks.

**Q.** Last year we had difficulty getting an adequate supply of Banvel dicamba and phenoxy in premixes, or in any form. What is the supply situation this coming year?

**A.** Banvel dicamba and phenoxy should be in adequate supply, in spite of demand that has doubled each year for the past three years for use on several crops and on grazing lands throughout the United States. Recently, Velsicol completed a new manufacturing plant that has more

than doubled the production of Banvel dicamba.

At present, our supplies of 2,4-D and 2,4,5-T acid are limited. You can, however, profitably stretch the 2,4-D or 2,4,5-T materials you are able to find with the various Banvel dicamba tank mixes.

**Q.** Can I use Banvel dicamba to sterilize certain areas?

**A.** Banvel dicamba is not a soil sterilant, and should be used at label dosage rates for brush and broadleaf weed control. Banvel 4-W.S. herbicide is selective, allowing grasses to grow

for soil cover and to prevent erosion. If you wish to sterilize the soil, your contract applicator can advise you, or call Velsicol on the Banvel "Hot Line."

**Q.** How does Banvel 4-W.S. herbicide kill brush? Why is it more effective than the phenoxy compounds?

**A.** Phenoxy compounds enter the plant through the leaves and bark, while Banvel 4-W.S. herbicide enters the plant through the roots as well as the leaves and bark. It is several times more active biologically than the phenoxy herbicides. Its different mode of action and greater mobility within the plant give a higher degree of brush and vine control with Banvel 4-W.S. dicamba alone or with Banvel dicamba plus phenoxy mixtures than with phenoxyes used alone.

Banvel 4-W.S. dicamba not only controls those brush species controlled by

2,4-D and 2,4,5-T, but also controls many species not controlled by phenoxy chemicals, such as evergreen species and suckering hardwood species. There are no other herbicides in commercial use that outperform Banvel 4-W.S. for control of brush and vines.

Because Banvel 4-W.S. dicamba translocates, it gives a more complete kill, even though the entire plant is not sprayed. Other herbicides may merely suppress. Therefore, Banvel 4-W.S. is more effective on the toughest weeds, trees and vines that have the deepest or most extensive root system. Translocation of Banvel 4-W.S. herbicide through the plant system eventually gets to the roots.



**Q.** I put out Banvel-510 herbicide in September as a basal application, according to your label directions. Brush browned out very well, but in June the next year, some trees started to leaf out. Does this indicate partial failure?

**A.** It's true that elm and certain other species often leaf out during the first growing season. However, Banvel-510 herbicide usually gives complete kill in the second growing season after the

application. Translocation takes time. Chemicals that give immediate, first-year brownout do not necessarily give third-year kill, so that you have to spray more often. Full benefit of Banvel-510 herbicide, its ultimate effect, is in the third year.

Banvel 4-W.S. dicamba by itself, applied to brush, is slow in giving brownout. With some species brownout is never achieved, as leaves curl and fall without turning brown. With the addition of 2,4,5-T brownout is faster, occurring within two to four weeks after

application. The addition of Accutrol® adjuvant will increase penetration and absorption of the chemical.

Some species take longer to die than others. For a few, it will be 18 to 24 months from time of application.

In short, this means that you spray on a three- to five-year cycle . . . you seldom have to go in again sooner than three years.

**Q.** My management has made a decision not to use 2,4,5-T for brush control. Do you have a product I can use that does not contain 2,4,5-T as a basal application to control brush?

**A.** Yes, for sure. Banvel®-520 herbicide, containing one pound dicamba and two pounds 2,4-D per gallon, controls a broad spectrum of brush. Why don't you give this formulation a good test? But, if you feel that it is not doing

the job as expected, call Velsicol on the Banvel "Hot Line" free of charge. On certain species, Banvel-520 herbicide proves effective but works more slowly than Banvel-510 herbicide.

**Q.** We use some pellets in our vegetation control program for brush and vines. Does Velsicol manufacture a Banvel dicamba pellet?

**A.** Yes, Velsicol sells Banvel® XP pellets, containing ten percent dicamba in clay. It is applied by hand or mechanical applicator, scattered uniformly on the ground under the tree, within six

inches of the trunk. Banvel XP dicamba leaches to the roots where it is taken up and translocated throughout the tree, destroying growth tissue as it goes.

**Q.** I've been using 2,4,5-T on poplar, sumac, chokecherry, locust, sassafras, aspen, and persimmon with good kill the first year. But right now, about two years after, these areas are thick with root sprouts. Would this happen if I used the right Banvel dicamba plus phenoxy formulation?

**A.** Not at all likely. Banvel herbicide combined with a phenoxy kills dormant buds and gets absorbed by the roots of these trees as well as through the leaves and bark, to put a sure end to root suckering. As long as you get good coverage around the crown of the plant, you will get good brush control. Banvel-510, containing 2,4,5-T, is

recommended, unless you have an environmental restriction against 2,4,5-T. If so, then you may be able to use Banvel-520, containing 2,4-D. Lower in cost than Banvel-510, Banvel-520 does not control quite as broad a spectrum of brush species, especially maple.

**Q.** Environmentally, how does Banvel dicamba compare with other brush control chemicals?

**A.** The table shows a comparison of Banvel dicamba with other brush control chemicals.

ENVIRONMENTAL COMPARISON OF BRUSH AND WEED CONTROL CHEMICALS				
	BANVEL	2,4-D	2,4,5-T	TORDON
Chemical Toxicity (acid) oral LD <sub>50</sub> over 2500 mg/kg	Yes	No	No	Yes
EPA Federal Label Approval on Pasture and Rangeland	Yes	Yes	Yes	*
Waiting Period Between Treatment and Grazing:**				
Beef Cattle	No	No	No	*
Dairy Cattle	Yes	Yes	Yes	No
Federal Residue Tolerances Established on:				
Pasture Grass	Yes	No	No	*
Crops	Yes	No	No	No
Milk	Yes	No	No	No
Soil Persistence Half-Life	25 days	4 days	20 days	100+ days
Ditch Bank Application (registered label)	Yes	Yes	No	No
Controls Both Hardwood and Softwood Species	Yes	No	No	Yes

\*EPA registration for use in Texas.

\*\*Read all labels for limitations on harvesting hay and slaughter restrictions.

Every vegetation control program has unique requirements.

To help you overcome your particular problems, Velsicol maintains a toll-free telephone that you may use . . . all year round

**BANVEL HERBICIDE "HOT LINE"**



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**Note: Before using any pesticide, read the label.**



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getting close to the time it would go dormant. The latter part of October when we were likely to get our first flash freeze we'd have lost it. The Santa Ana strain, which is the best of the bermuda hybrids, in my opinion, has a complete loss of color during a dormancy period of about six weeks. Furthermore, the discoloration could last as long as three months."

One alternative that McGihon investigated was to plant bermuda and then overseed with a colonial highland bent that is raised in this country.

"They've been using this bent in California's San Joaquin Valley around Bakersfield, where the temperatures approach those of the desert," he said. "They've gotten up to three years of color out of one overseeding with that highland bent. The bermuda doesn't force it out."

McGihon had to take another factor into consideration. The desert islands adjoining the fairways were to remain in their natural state. If bermuda had been planted, he couldn't guarantee that the grass wouldn't spread into those areas. The only way it could have been prevented was through the use of herbicides, and McGihon didn't want to use them because of the possibility of the herbicides percolating into the underground water tables.

Another possibility was a New Zealand Dry Land Bent Grass that had been introduced into this country from Australia. It had been developed in an arid area and supposedly was heat-tolerant, drought-resistant and would maintain its color through the winter.

McGihon made weekly visits to a turf grower in nearby Indio who had some 20 acres planted in the new grass. He watched its growth, its response to a substandard watering system, and its recovery from adverse feeding practices. Some of the acreage was lost. The observations showed that the grass could not tolerate salinity in the water and required less water than bermudas.

It was not a creeping grass so there would be no problem of its spreading into the natural desert areas at Ironwood. However, this same characteristic meant that the recovery rate of divots on the fairways would be slower. It would result in more hand seeding and top dressing on the fairways. A



*The No. 51 SAM rotors provide an artificial oasis on this desert golf course.*

problem, too, that hadn't been solved was how it would stand up against golf car traffic. Most bent grasses have a very low tolerance to wear.

International Turf Company of Phoenix brought some of the grass to McGihon, its representatives saying they had put some on a golf course at Henderson, Nevada, in a 60-40 mix with bluegrass.

Despite its problems and unknowns, the possibilities of this grass intrigued McGihon. With the well engineered and equipped irrigation system at Ironwood, some of the earlier problems could be overcome, he believed. The grass might

even remain green the year around, eliminating the costly overseeding problem.

McGihon got the go-ahead and the new grass was seeded on the fairways. Added to it was fast-growing red fescue to act as a nurse crop for the Dry Land Bent, shading and protecting the new, young grass, which grows in tufts. The red fescue will go because it is neither heat nor drought tolerant. The greens and tees are of Penncross Bent, which heals more readily from divoting than the other bent grasses.

"The water requirements of our two different bent grasses are entirely different," McGihon said. "But

# PRINCETON

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**CUSTOM LAWN** (from page 16)  
have to offer and then help them appreciate your efforts.

Much as each businessman should periodically take inventory of his physical assets, we should also take realistic stock of our promotional ammunition, meaning our own ability to "package" our service so that a positive overall message is conveyed to our customers. If you know that promotion and merchandising are your weak points . . . get help! This is the age of specialization and paying a promotional expert is preferable to paying a bankruptcy lawyer. Hiring a professional advertising agency or counselor may be one of the best investments you can make, just as you tell your customers that they will receive special knowledge and skills when they retain you.

As custom lawn application services become even more popular with ex-do-it-yourself homeowners, it seems inevitable that the number of profit minded laymen attracted to this field will increase because the investment required to get started is relatively small and superficial know-how can be acquired in a short time. This has been the case in

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## **COACHELLA** (conclusion)

this combination can be programmed into our flexible irrigation system, which has been designed with this combination in mind."

McGehee points out that the New Zealand grass gets more watering because there is no retention mulch on the fairways, as there is on the greens. During May the fairways got 30 minutes of watering every 24 hours (three inches a week) and 20 minutes for the greens. The entire 125 acres are watered at night in 13 hours. Slightly longer watering periods were anticipated as the weather got hotter in the summer.

The course opened on schedule April 30, and golf superintendents are watching with great interest the 125-acre experiment at Ironwood. If the New Zealand grass proves to be a good, year-around grass, it will mark a milestone in desert golf course history.

Unfortunately, if the new grass does survive well the year around, it will not help already established golf

the past and it's a good bet that the trend will continue, particularly with the large number of capable people who have lost jobs in the past two years and are seeking security in their own businesses.

Even though the opportunities in this field presently are still vast, at some point in the future the competition will become keener. By that time many of these promotional minded newcomers will have gained extensive practical experience and staked out strong competitive positions in their markets.

Today's complacent professional who ignores the handwriting on the wall and does not sharpen his promotional skills with as much care as he devotes to his equipment runs the risk of experiencing a harsh financial jolt in the not-to-distant future. Knowing how to identify and control insects, fungi and weeds is, of course, indispensable to the conduct of a professional lawn service, but this knowledge can be obtained rather quickly. Knowing how to identify and control a customer in a rapidly changing market may be more important in the long run to the financial health of the professional. □

courses that have been using bermudas. They could hardly afford the shut-down time required to kill off the bermudas before reseeding with the new grass. But any additional courses built by the existing golf clubs could take advantage of it.

Additions to courses are constantly being made in the Coachella. Although Ironwood has a ways to go before it sells out the condominiums and lots associated with its country club, it already has plans to add a nine-hole executive course, and, south of the clubhouse, an additional 18-hole course that will be shorter and less difficult than the present one. Then, too, seven acres have been set aside for a par three short course.

Since last year the Coachella golf growth has looked something like this: Ironwood has completed its first 18. Indian Palms has added another nine. Sunrise and Sun King each has added another 18. Palm Desert Country Club has added a nine. And so it goes. The Coachella continues to get greener and greener. □

## **REDUCING** (from page 22)

"We start our fairway program about March 15 to April 1 with RZ, sometimes in combination with chelated iron," Santoianni explained. "That first application usually takes care of leaf spot. Our last application depends on the weather, but you have to spray sometime for snow mold. One year, we made our last application just before Christmas."

Santoianni's preventive four-season treatment usually amounts to 36 to 44 fungicide applications per year. Besides the regular treatments, Santoianni and his assistants check the turf regularly for disease problems that may have come on since the last regular spraying. "There are a couple key spots I always check, where disease always starts first," the 27-year grounds-keeping veteran noted. "But usually, the only time we make an extra spraying is when we find Pythium."

Getting the most value out of any chemical depends on proper timing, Santoianni said. He'll reschedule a routine fungicide or fertilizer application if the weather conditions aren't right. "Knowing when to use any product is the secret of getting effective results," he said. "Your most effective products — including fertilizer — can be ineffective or actually damage the grass if they're applied under the wrong conditions. Then you've not only wasted your money, but you may have done harm rather than good."

Santoianni has experimented with still another innovation that he thinks will make for more timely and economical insecticide use. "I tried a sample of Diagnostic Aid last year, and it really will help you find out what kind of insects are present," he said. "Different insects are present at different times of the year, and you need to get your insecticide on at the day of hatching. Diagnostic Aid can really help you target your applications. I plan to use it next year, spot-checking a few greens about every two weeks."

Santoianni considers his program of increased efficiency and budget-consciousness a return to "the old way." But with increased golfer traffic on most courses, and the looming threats of recession and inflation, a program that trims the fat from the operating budget may be more of a glimpse into the future.