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For more information circle number 264 on card

greens management

Continued from page 83

practice and it works. He believes that attempting to achieve dark green color and rapid growth simply wastes water and fertilizer. Physically, the volume of clipping gotten through such a process proves this. With Penncross the byproducts of such a program, he says, are shallow roots and grainy putting surfaces.

Fertilization of the greens at Boulder CC is done with only about half as much nitrogen and water considered the "standard" amount for greens in Colorado.

Physically, the light feeding results in less clippings—two baskets every other day from a 6,000-square-foot green as opposed to two or three baskets a day otherwise—and slightly lighter in color. Metsker adds that his members never complain about the greens, either grain or color.

From a maintenance program

standpoint, better greens lead to or are a result of the following:

- Less fertilizer used;
- Saving in labor costs;
- Less frequent watering;
- No grain problem;
- Absence of *Poa annua*.

Here's how the program works and how it saves:

Fertilizer—Normal application of eight to 10 pounds of nitrogen per 1,000 square feet is used at most courses in the area. Boulder CC greens get about four pounds per 1,000 square feet in four applications. They also get only a half pound of phosphorus per 1,000 square feet. Metsker says too much P only encourages *Poa annua*. Using soil tests as a guide, Metsker included one-third pound of potassium per 1,000 square feet annually. No ureaform fertilizer is used because erratic temperature changes, day-to-day and day-to-night, might cause burning. Acceptable color has been retained by applications of ferrous sulphate (iron) at three pounds per 1,000 square feet as needed.

Labor—Most country club mowing schedules call for greens to be cut six times weekly. Boulder CC greens are cut half that often—Tuesday, Thursday and Saturday. But volume of clippings indicates between-mowing growth is also half the normal rate. The schedule saves 13 man hours a mowing or about \$20. That adds up to about \$600 a season.

Water—The usual practice is to

Continued on page 96

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Spodnik heads GCSAA

The 1969 slate of officers for the Golf Course Superintendents Assn. of America is headed by John Spodnik, the newly elected president. A member of the Ohio Turfgrass Foundation, Midwest Regional Turfgrass Foundation and the Cleveland VoAg Technical Development Committee, he also serves as secretary-treasurer of the northern Ohio chapter of the GCSAA.

Keith Nisbet, superintendent at Westview GC, Aurora, Ont., Canada; and Norman W. Kramer, superintendent at Point O'Woods CC, Benton Harbor, Mich., were each elected vice presidents.

Clifford A. Wagoner, superintendent, Del Rio CC, Modesto, Calif.; Warren A. Bidwell, superintendent at Philadelphia CC, Gladwyne, Pa.; and Robert W. Mitchell, superintendent, Sunset CC, St. Louis, were elected national directors.



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Superintendents: checklist for March

As the golf season gets ready to step up to the first tee a friendly superintendent submits this list which any super might well take as a checklist of things to do before the season starts. Along with the tip our amiable super also writes as a footnote, "If anyone actually gets all the items that apply to them checked off he deserves some sort of public commendation."

Here's that March check-off list:

- All mowers sharpened, set up and ready to go
- All vehicles running and operational
- Season's supply of fertilizer, chemicals and seed on hand (or ordered)
- Water systems A OK
- All tee benches and washer pipes painted
- Course cleaned of all trash and debris
- Club, pro shop and barn grounds raked and cleaned
- Roads graded and holes filled
- Golf car paths clean and clear, sealer applied on blacktop
- Traps fan raked of trash and leaves, edged if needed
- Damaged or down trees disposed of
- Signs, scorecard boxes, markers, benches, flags, trap-rakes, trash cans, water coolers, ball scoops, hole cups ready to be put out
- Drains and brooks clear and running
- Fungicide spray on greens when clear of snow (tees, fairways)
- Greens checked for damage by skaters, dogs, cars—small areas hand topdressed or patched
- Apply water with sprayer/sprinklers to areas if weather conditions indicate—(Hiwind & dry)
- Apply wetting agent to greens and tees
- PH checked and lime applied, if necessary
- Fertilize areas necessary in your program
- Apply sodium arsnite in strip around trees for no trimming the rest of the season
- Mow greens with brushes / verticut lightly if conditions indicate
- Fertilizer and spraying program planned out and on paper
- Contact/hire seasonal help
- Dig holes for new trees
- Make written report to chairman on condition of course, plans for the season, labor situation and recommendations for policy changes, if needed; tentative opening date
- Plan to start and finish any construction by May 15, June 1st at the latest
- Take soil tests to indicate possible deficiencies in P or K, make application of sulfate of potash or super phos. to correct deficiency or use fertilizer high in deficient elements
- Repair all leaks, weeps or seeps in water system . . . raise or lower QC valves as needed . . . locate all QC valves and clear around fairway valves . . . paint
- Remove protruding stones from rough and fairway that are loose from the frost . . . also around tee benches, paths
- Put No Trespass signs up in trespasser traffic areas
- Paint and repair outbuildings and pump houses
- Put material, bought in bulk, in container of handling size (put wetting agent in quarts, weed killer in gallons)

Duck

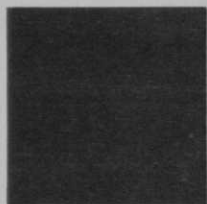
Continued from page 68

recipes such as fillets or supremes of duck Perigourdine. The slices are carefully arranged on fried croutons lightly coated with gooseliver pâté. Slivers of truffles are alternated with the overlapping slices on top of the croutons, and kept ready for coating with processed pan juices flavored with Madeira, port or sherry wine.

In the fancy food section of the menu one should also try a recipe for deboned duckling in crust. A meat stuffing is preferred but the new, preprepared varieties may also be used as a base for any recipe. Once stuffed, the duck is trussed, browned, wrapped in pastry dough, decorated and baked in a moderate oven. The availability of frozen, preprepared pastry dough of high quality makes this dish more accessible to chefs working within the usual food cost ratio. The decoration of the dough makes the finished dish a magnificent buffet centerpiece.

DUCKLING AUX CHAMPIGNONS

Cut the raw duckling into serving pieces. Oil and season. Brown in a skillet and remove the pieces to a roasting dish. Place into the oven at moderate heat. Pour off excess fat from the skillet. Add chopped onions and sliced green or red peppers. Season with garlic powder. Sauté until onions are cooked. Add diced carrots, celery and drained canned tomato pieces. Flavor with a little thyme and bay leaf. Shortly before serving sauté sliced mushrooms in butter or shortening. Mix with the vegetable composition in the skillet. Heat and pour over the duck in the roasting pan. Cover and bake. Serve with steamed rice or buttered noodles. This recipe can be changed easily by a variation of the ingredients used to make the sauce. Pitted black olives may be added to or substituted for the sliced mushrooms. Garlic may be omitted or replaced by another flavoring such as oregano. On the menu, the dish can be listed as duckling Mediterranean style, Spanish style or a l'Italianne. A bland, starchy food should be served with it. □



NEW PRODUCTS



Recreational Div. of DeVac, Inc., has developed the Assistant Pro, a teaching device that functions on the theory of muscle memory. It can be calibrated for adjustment to allow the instructor to teach with any club and it also permits the swing plane to be altered to conform with individual requirements. It can be used by right- or left-handed golfers. Portable, it weighs about 50 pounds and can be used indoors or outdoors.

Circle No. 101 on reader service card



Sod-Master has improved the Bantam sod cutter. The new model features 7hp gasoline engine and a duo-control handle which controls both the depth of cut and blade angle. The clutch and throttle are located on the handle bar.

Circle No. 103 on reader service card



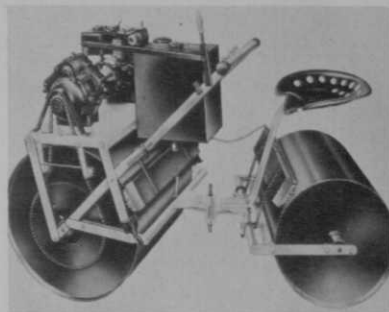
J. I. Case Company introduces the Owner's Maintenance Kit for operators of Case tractors and equipment. Included in the kit are oil filters, air cleaner detergent, fan belts, grease and other accessory materials. The corrugated container keeps out moisture and a special polyethylene coating on the outside allows outdoor use during cold or rainy weather.

Circle No. 102 on reader service card



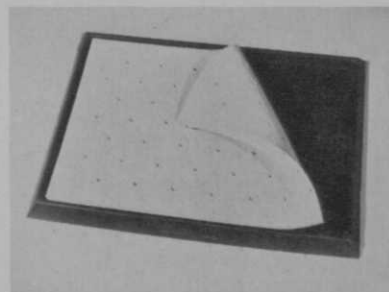
The Prestolite Company has available an extra capacity golf car battery which can comfortably carry two fully-equipped golfers 18 holes, according to the manufacturer. Features include a bigger plate reinforced with Dynel fibers, special rubber separators with thick glass and one-piece cover construction. The six-volt battery is available dry charged with either standard automotive terminals or wing nut terminals. It is rated to discharge for at least 75 minutes at 75 amperes to a terminal voltage of 5.25 volts.

Circle No. 104 on reader service card



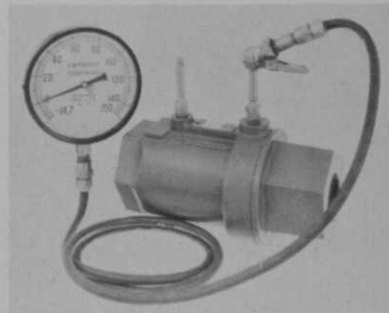
Nortech Corp. announces that its Brutus power rollers are available in two models: a one-half ton riding unit with center hitch and single-lever reverse transmission, and a one-third ton walk behind unit. Also available with both models is a sprinkler attachment for blacktop work.

Circle No. 105 on reader service card



Onox, Inc., has developed a filler made of sponge rubber for its Footmat dispenser, which is used to control athlete's foot in shower rooms. The filler has 45 punched holes to increase the flow of Onox solution to the bottoms of the feet and it can be rolled up and squeezed out when cleaning. Both sides of the filler can be used.

Circle No. 106 on reader service card



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greens management

Continued from page 92

water greens every night, about one-fourth inch each application. At Boulder CC, greens are watered three nights a week (except in rainy periods). No labor is saved, since a water man is on duty every night anyway (Boulder CC has a semi-automatic fairway system with quick-coupling heads at greens). Water is not saved either, since each head runs two hours instead of one hour. But less frequent watering drives the roots deeper and discourages *Poa annua*, says Metsker.

Grain—Penncross tends to be fluffy and create excessive thatch under a heavy nitrogen program. Both problems are minimal at Boulder CC. The greens did not have to be aerified at all the first three years. To help water penetrate, they are now aerified in the spring and fall. Plugs are removed. Greens are then toppedressed with a

mixture of 60 per cent plaster sand, 20 per cent peat moss and 20 per cent calcine clay. Metsker has never verticut his greens. They were brushed once last season and spiked once.

Poa annua—After five seasons, only one small patch on one green of annual blue could be found last season. Metsker's goal has been to eliminate it. A pure strain of bent makes the smoothest putting surface. It also looks better, summer and winter, and there is almost no chance of losing a green due to desiccation, heat or disease. Greens have been treated with lead arsenate, also, but a constant toxic level has not been maintained. No fungicides have ever been used.

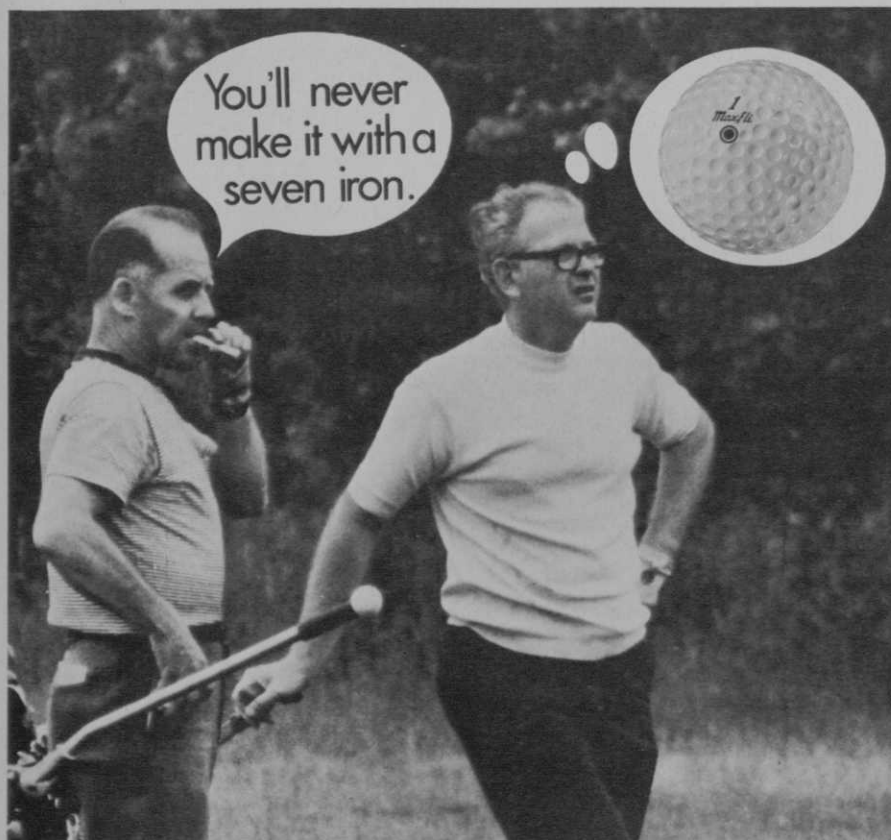
These are the basic elements of Metsker's greens maintenance philosophy. He does not claim that it will work on every course, in every climate, with every grass strain. But he is happy to agree with Marvin Ferguson that they produce the best putting surfaces in Colorado.

The superintendent concedes there are three minor problems caused by light feeding:

- Light color, a relative judgment, unnoticed by golfers;
- Ball marks do not heal as fast as they might otherwise;
- Replaced cup plugs show longer than they would otherwise.

On balance, though, advantages far outweigh these matters. Says Metsker, "Conventional methods are not necessarily the best for Penncross greens. We feel our program has proved itself here. The principles of deep roots and smooth surfaces apply everywhere. It takes more courage not to water than to over-water. But I feel this is what it takes to keep healthier greens. Our roots always go below the depth of the cup-changer. And I have never had a golfer complain about light or grainy greens."

In the final analysis, the golfer's opinion is the last word. At Boulder CC, the golfers are happy. □

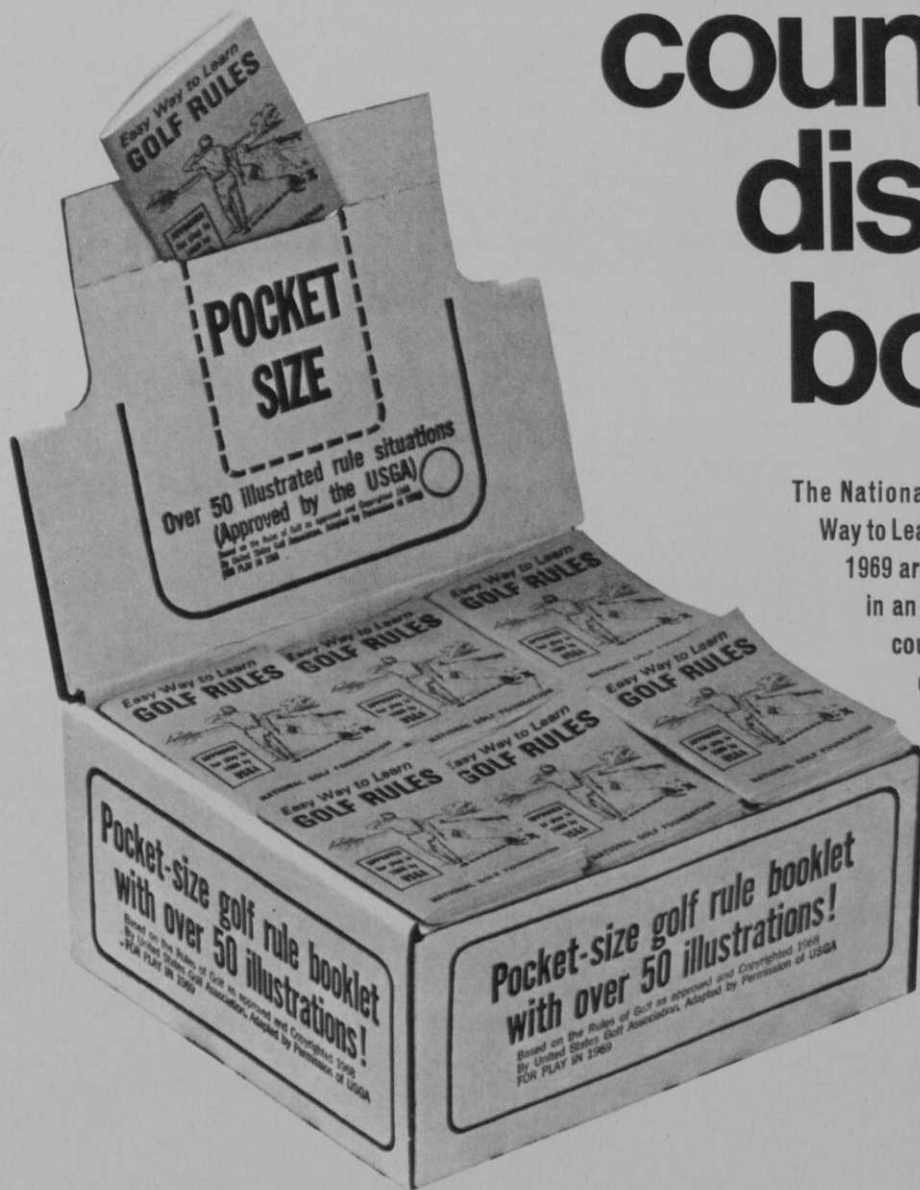


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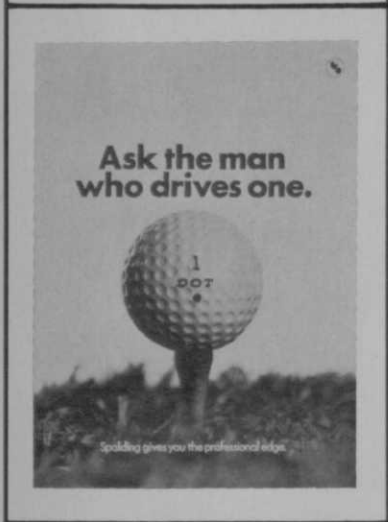
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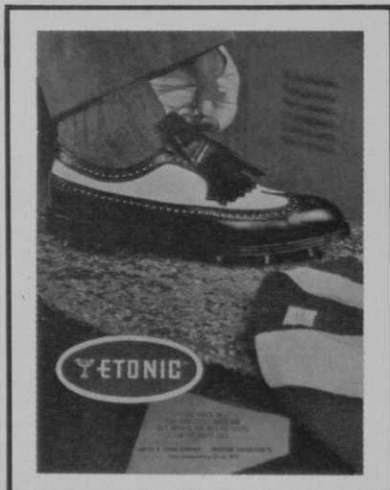
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Q.—Your opinion will be appreciated on this question. My greens (they are perfect) are fed with 12-6-6 (70 percent of N from ureaform), supplemented with powdered ureaform (38-0-0) and 0-0-50 sulfate of potash. My season average is about 9 pounds N and 5 pounds K. To date this year the greens have had 6.62 pounds N and 3.5 pounds K. Would you advise fertilizing again about November 1? I've heard many pros and cons about feeding after November 1.

(Indiana)

A.—With the carryover effect of the long-lasting slow-release materials, and the present excellent condition of your greens (after a rough summer), it would seem that no more N is needed this fall. I would recommend additional K from sulfate of potash to bring the season total to five pounds.

Most discussions about late fertilization center on quick-acting forms of N. With your program you could safely fertilize around November 1, but if the greens are perfect and growing well, why bother?

Q.—We are hearing a great deal about hydrated lime. Some report bad results with it in 1968; others swear by it as a great tool in hot weather. Can you help our thinking on this subject: (1) What is the chemical reaction between hydrated lime and chemical nitrogen fertilizer? And (2). Is it true that there is no reaction between hydrated lime and a solid ureaform nitrogen fertilizer?

(Maryland)

A.—The bad results appear to be associated with a) an overdose, b) using it too close to an application of soluble nitrogen fertilizer, c) applying it to grass that had been severely weakened by other agencies or causes. The good results were associated with light doses (1/2 pound to 1 pound to 1,000 square feet), most often used in association with 2 pounds to 1,000 pounds of a powdered ureaform nitrogen fertilizer.

Question one: Hydrated lime ($\text{Ca}(\text{OH})_2$) is calcium hydroxide which combines chemically with soluble nitrogen materials to form ammonia gas (NH_3). This ammonia odor can be detected and a severe grass burn usually occurs.

Question two: Hydrated lime can be safely mixed with powdered ureaform in water. There is no chemical reaction because ureaform is chemically inert. Only soil microorganisms can release

N from ureaform.

Some superintendents report excellent results from dusting hydrated lime on dry grass. This is fine if there is no wind and if there is a good duster available. Spray applications of hydrated lime and UF should be made in the evening after players leave the course. The material should be left on overnight (no traffic) and rinsed in early in the morning before mowing the green.

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Drive to the fore



Officers and regional managers of the golf car sales division of Pargo, Inc., and Columbia Car Corp. participated recently in a two-day seminar which emphasized gaining maximum impact from company's golf car line and expanded sales staff. Standing (l. to r.) are: J.B. Williams; W.W. McConnell; M.B. Osborne; G.R. Smith, president; J.J. Vilis, vice president-general manager; J.B. Templeton; N.M. Roy and R. Proietti. Sitting (l. to r.) are: C.C. Wilson; T.J. Prendergast; R.T. Davis; J.B. Vaughan; R.B. Kurek; R.K. Johnson and J.D. Patterson.

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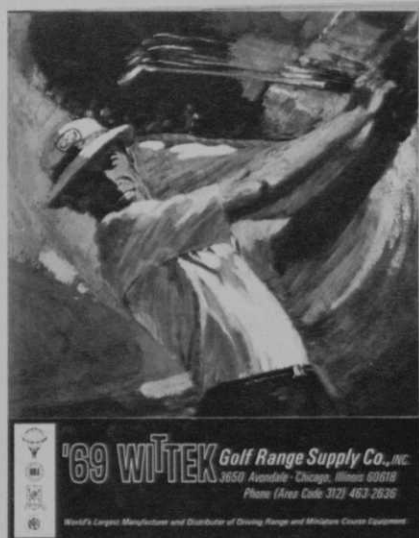
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