

Sisco
ENGINEERED RAIN

Turf Topics

THE FUTURE IS NOW
at Johns-Manville.

KCS COMPUTERIZED
CONTROLLER FOR GOLF
COURSE IRRIGATION.

KCS is a keyboard controlled,
all solid state mini-computer
with memory -- multiple
program -- digital display --
central processor -- and
many more features.

Control the entire irrigation
system from your desk.

The KCS central processor
is the only true two-wire
system. KCS programs are
easy to set up and easy to
change.

Call Paul Bando or Al
Warshawsky at SISCO for
a personal demonstration.

Buckner®

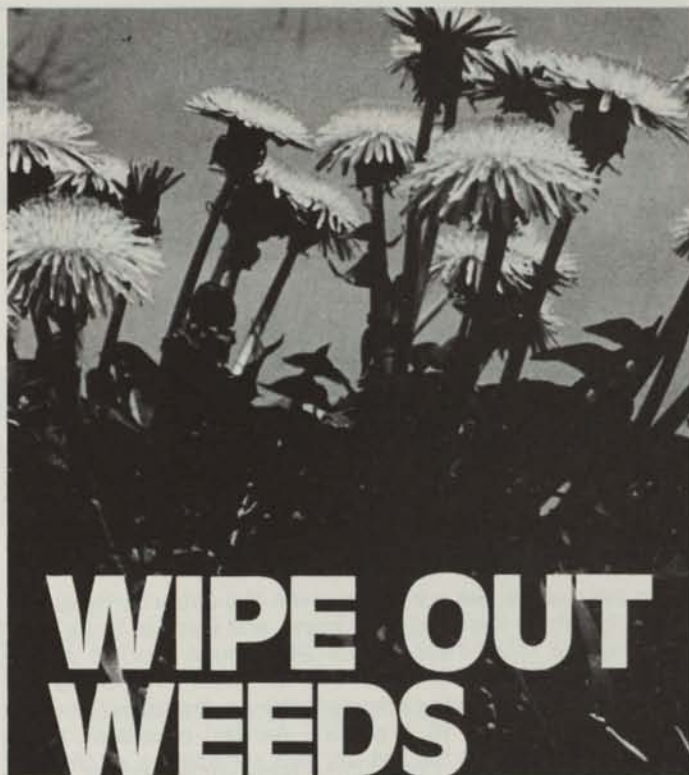


Johns-Manville

Write or call direct

Sisco
ENGINEERED RAIN

Sprinkler Irrigation Supply Co. A division of A.J. Miller Inc.
1316 No. Campbell Rd. Royal Oak, Mi. 48067 Phone (313) 398-2233
Chicago Sales Office/Warehouse
1738 Armitage Court, Addison, Ill. 60101 (313) 629-7730



WIPE OUT WEEDS

with **Banvel® 4S**
& **Banvel®+2, 4D**

HERBICIDES

**The broadleaf weed 'specialists'
designed for professional turf programs.**

Here's why BANVEL® herbicides are the
professionals' choice for weed control:

- Used as directed Banvel will not harm trees, ornamentals or turf—it just eliminates weeds.
- No season restrictions. Lay down Banvel from early spring to late fall—all through the growing season.
- Rain will not affect Banvel. It keeps on working because it translocates—penetrates leaves and is absorbed through roots to attack every part of the weed.
- No special spraying equipment necessary. It is easy to clean out of equipment after use.
- Mixes readily with hard or soft water.
- Easily stored through winter months without losing potency.

**Banvel herbicides—products
for professional turf men**



Velsicol

VELSICOL CHEMICAL CORPORATION
341 East Ohio Street
Chicago, Illinois 60611

©Velsicol Chemical Corporation, 1976

Schroeder's Nursery, Inc.



TREES - EVERGREENS - SHRUBS

Specializing in large Caliper shade trees and Ornamentals.
We also offer complete installation service.

TELEPHONE: (312) 546-9444

Arthur E. Schroeder
Richard A. Schroeder
Don Virgens

GRAYSLAKE, ILL.
Rt. 1 - Box 34-W

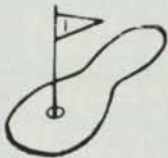
Nursery on Rt. 60 between Rtes. 12 (Volo) and 83 (Ivanhoe)

To: All Members of the Midwest

As in past years, we are again given the opportunity to man a booth at the Chicago Flower and Garden Show. The show is to be held March 24 through April 1 at McCormick Place in Chicago. We will need five people per day for the following schedule: 10 - 4, 2 people, 12 - 6, 1 person, and 4 - 10, 2 people. As past president, I will be in charge of the set-up and scheduling of the show. Please call 634-0586 and talk to Cathy, my secretary, as to what day you would like to work the show. I will appreciate your cooperation.

Joe Grenko

PENNCROSS & TORONTO C-15 BENT SOD and TORONTO C-15 BENT STOLONS



- Pure to Strain
- Maintained at 1/4" mowing height with "Greens King"
- Grown on Sandy Loam Soil
- Toronto C-15 Strain resistant to leafspot

ALSO FEATURING

- XL-100 Bluegrass Blend Sod

"For the Superintendent who wants the best"

XL-100 is a blend of five bluegrass varieties that were ranked superior in tests conducted at major Midwest Universities.

XL-100 is disease resistant, shade tolerant (60%) and adaptable to close mowing.



H & E Sod Nursery, Inc.
3900 West 167th Street
Markham, Illinois 60426
312/596-7200

ROSEMAN

2620 CRAWFORD AVE. 864-1842
EVANSTON, ILLINOIS

TURF EQUIPMENT HEADQUARTERS

ROSEMAN GANG MOWERS	FORD TRACTORS
TILLER RAKES	DEDOES AERIFIER
LELY SPREADERS	LOADERS
SEEDERS	LEAF MULCHERS
ROTO TILLERS	ROTARY MOWERS
HOMELITE CHAIN SAWS	HOMELITE PUMPS

SALES ● SERVICE ● PARTS ● RENTALS

BOJO TURF SUPPLY CO.

ALL MAJOR TURF SUPPLIES

BoJo

TURF
SUPPLY CO.

- PAR-EX
- Vertagreen
- Du Pont
- Diamond Shamrock
- Sand Blasters
- Cyclones
- Fore Par

R R 1, Box 52
Peotone, Ill.
312-258-3485



Vertagreen

A product for all reasons



- Uniform particles that flow smoothly and spread evenly.
- 48% of the nitrogen in slow release form.
- Uniform balance of secondary and micronutrients also in slow release form—Ca, Mg, S, B, Cu, Fe, Mn and Zn.
- All potash derived from sulfate of potash. Lower salt index makes it far less likely to burn.



Agri-Chemicals

Division of United States Steel

P.O. Box 1685

Atlanta, Georgia 30301

WINTER INJURY IN THE COOL TEMPERATE ZONE

Desiccation and low temperature kill are the two major causes of winter injury to the turf plant in the cool temperate zone of the United States. A third type of injury caused by fungus organisms, *Typhula spp.* and *Fusarium spp.*, is prevalent from year to year, but is not as serious or as damaging as desiccation and low temperature kill. Mechanical damage, a fourth type of injury, is increasing.

Desiccation Injury

A grass plant must rely on an internal water supply for respiratory activity. When soil moisture is limited and the internal supply of water within the plant is diminishing to a point that water loss is greater than the amount that can be taken into the root zone, the plant desiccates. This is basically a wilting phenomenon but one that is more feared than any other form of physiological winter injury.

Desiccation can be held to a minimum by applying several hundred gallons of water to the area of concern before it comes under stress. Water tanks, spray equipment and the use of the watering system are tools used to obtain and disburse the water. Several applications are normally required. In the plains area of the mid-continent, it is common to have the watering system in operation during the open winter months to prevent excessive turf loss. The watering system is drained from day to day after the system has been in use. If desiccation has occurred, it is important to power spike the damaged area several times, overseed, topdress and syringe frequently to encourage germination and plant recovery. If at all possible, play should be restricted until the damaged area has recovered sufficiently to withstand traffic. However, if early play is permitted, turf recovery is normally slow, as a form of mechanical injury is then taking place. Soil moisture and temperature will have a direct bearing as to how early a damaged area can be played upon.

Low Temperature Kill

The conditions for low temperature kill to the turf plant are physiological. When the lower crown of the turf plant is in an extreme state of water content under low temperature stress, complete destruction of the plant can occur. Often the turf plant comes out of the winter looking good under these conditions. However, damage has occurred within the plant to the crown and root system which is not visible. When temperatures begin to rise in early spring to encourage growth, the plant begins to transpire and will soon die; there is no life support system functioning.

Low temperature kill has been associated with ice formation, which has been misleading. There is no question that excessive ice or snow will cause suffocation or winter scald. Suffocation will occur if an excessive amount of carbon dioxide accumulates, if oxygen is restricted, or when an interchange of soil gases is stopped. Under an anaerobic condition such as this, the solubility of excessive use of arsenicals, or heavy metals such as mercury and cadmium fungicides and perhaps other herbicides, may increase the total amount of damage. Winter scald, on the other hand, is when standing water or ice acts as a lens for the sun, which, in turn, scalds the leaf. To prevent suffocation and winter scald injury, surface and sub-surface drainage must be adequate. Breaking and removing the ice layer during the alternate freezing and thawing period during the late winter is imperative.

Snowmold

Typhula spp. and *Fusarium spp.* fungi cause minimal damage to turf if normal preventive fungicide applica-

tions have been carried out. There is one exception when snowmold is in abundance during the spring of the year regardless of the preventive fungicide program practiced; that is when the ground is not completely frozen before the winter snow sets in. Snow is a tremendous insulator against cold and protects turf from desiccation. However, it increases the use of fungicides rather than limits their use. Recovery from snowmold injury to the turf plant is rather rapid if optimum spring growing conditions are present. Turf is not completely destroyed, but merely set back in a mottled state.

Mechanical Injury

Mechanical injury to turf takes place in two different forms; foot and vehicular traffic. With a long, late fall and early spring playing season in many areas, serious injury to turf by foot printing on frosted playing areas has become standard at many golf courses. Ice crystals within the grass blades are distorted and rupture living cells, causing death. Syringing greens in early morning, for instance, before traffic is allowed on the course, will help solve the problem; water melts the ice crystals.

During the spring when the upper portion of the soil has begun to thaw, the soil is overly wet and slippery. Foot traffic at this time will cause severe compaction and tearing of the roots at the point where they penetrate the still frozen area. When soils are partially thawed, injury is serious and long lasting. Visual damage is not noticed at this time of the season, but is one of the primary reasons why troubled areas act up during periods of summer stress.

Snowmobile damage to turf is becoming more apparent each season. A snowmobile running in loose snow will create approximately a five- to six-inch-deep track. When this area is used over and over, a glazing or icing effect takes place. Toxic conditions will develop as previously pointed out, with the end result in turf loss.

One can easily see what a golf course superintendent has to face in the cool temperate zone of the United States. Turf injury will result in many forms, in many ways, under varying conditions. It is not an easy task to provide optimum playing conditions when the breaks are not going your way. The golfing membership plays in late fall or early spring and often refuses to remain off the frozen turf. Construction to improve drainage or rebuild a new green is not carried out because of the late playing season. The ground is not frozen solid going into the winter months, an early snow falls and preventive fungicides have not been applied for snowmold control. To top it off, the snowmobiles have an early start this winter. With spring around the corner, anaerobic conditions have been created with an abnormal amount of snow. Ice and snow removal has been taking place in order to correct existing conditions. And, as the remaining ice and snow melts, low temperature kill has occurred with a healthy looking plant on the playing surface. Snowmold is scattered hither and yon, and the northwesterly winds are just beginning to let you know that desiccation may still be a problem this early spring.

Yes, here comes the golfer, the snowmobile has been put away and he can't understand why the course is the way it is. Under these conditions one must expect turf loss.

Conclusion

What steps then should be taken by golf course superintendents to prevent winter injury? The first and most important rule is not to play on turf when it is not actively growing, especially greens. Temporary greens

should be played from the time the ground begins to freeze in late fall until completion of heaving and thawing in early spring. Excerpts from "The Case For Temporary Greens", January, 1966, USGA Green Section Record, document the importance of remaining off turf during this stress period:

"So many more golfers play each course now in regular season that injury due to the increased traffic is mounting and off-season play can only add to the total traffic injury problems.

"In late fall or early winter when frost enters the ground, turf becomes frozen and the upper fraction of soil becomes moistened with frost. Traffic at these times will break or crack the stiff and frozen blades of grass, weaken them, and *Poa annua* or other weeds could subsequently encroach, and so the turf is generally weakened. Traffic imposed upon moistened soil results in a cementing of the soil due to the lubricating action of the moisture. This undoubtedly adds to compaction.

"In winter when the ground is frozen solid, turf blades would suffer only if play were allowed while the grass, too, was frozen. The danger here is that during the day while players are on the course, sufficient thawing could occur in the upper fraction of soil to cause footprints and a cementing action of the soil. This occurs when air temperatures are higher than normal, and, of course, these are the very days when golfers prefer to play.

"The most difficult time for turf is in late winter and early spring, from mid-February through March when the top one inch of soil (or less) is thawing but the soil beneath is frozen. Traffic on greens at this time will result in severe compaction.

"Any time water stands on a green in winter, no play should be allowed. This results in extreme softness of the upper fraction of soil and turf.

"All told, any amount of play in winter generally means more rigid management during the growing season, especially more aeration and more topdressing to true and level greens. If play is allowed on regular greens, we cannot stress too vigorously that the days must be very carefully chosen; that someone must make these day-to-day decisions; and that your course must be treated as an individual problem. It should not be kept open or closed simply because a nearby course is open or closed.

"The only way to insure against possible trouble is to have temporary greens. It has often been suggested that the word 'alternate' be used in place of 'temporary', because the latter bears a negative connotation.

Second, drainage conditions must be at an optimum if sound turf programs are to be carried out and followed to prevent winter injury. And, third, an adequate budget, good source of labor and communication between the golf course superintendent and his immediate superior must become a reality when facing the winter injury problem in the cool temperate zone of the United States.

Credit - USGA Green Section

FOR THE FINEST IN SOD
THORNTON'S TURF NURSERY

312 - 742-5030

Rt. 2 Box 72

Elgin, Ill.

LABOR-SAVING GRASSES



GLADE KENTUCKY BLUEGRASS

- Does Great in Sun Or 60% Shade
- Excellent Disease Resistance to Powdery Mildew - Stripe Smut - Leafspot - Rust
- Quick Recovery - Fast Germinating

Adelphi

KENTUCKY BLUEGRASS

- Greens Up Earlier in Spring - Stays Green Longer In Fall
- Great Resistance To Disease

- Low Growing - Tolerates Close Mowing

CITATION

FINE LEAF PERENNIAL RYEGRASS

- Improved Mowing Qualities
- Blends Well With All Other Grasses

- Performs Great In Hot, Humid Areas

FOR MORE DETAILED INFORMATION AND TEST RESULTS WRITE TO:
VAUGHAN'S

5300 Katrine Avenue, Downers Grove, Illinois 60515, (312) 969-6300
WAREHOUSES LOCATED IN:
Bound Brook, New Jersey • Landover, Maryland • Ovid and Grand Ledge, Michigan • Spokane, Washington

PRECISION BLENDED TOP DRESSING

Custom blended to your specifications by our modern equipment.

*Buy when you need —
Eliminate costly storage*

We sell an air dried, uniform and free flowing top dressing.

ASK THE MAN WHO HAS USED IT.

HUMUS - BLACK SOIL

HENRY FRENZER

Area Code 312
658-5303

620 Webster St.
Algonquin, Ill.
60102



On left, MAGCS April 26 meeting host, Dave Meyer at Nordic C.C. and Mike Bavier, re-elected GCSAA director are preparing for a toast.



A friendly conversation. Pat Sokolis has the floor.



Mr. and Mrs. Richard B. Richardson



Francis Krueger appears to be out numbered.



Pat Sokolis and Penny Meyer appear to be enjoying themselves.



The ladies are serious, at this moment.



Mrs. W. Saielli has finally corraled her husband for some serious moments.



Equipment building after the roof collapsed, due to heavy snow at Silver Lake C.C.



Snow damage to roof at Ill. Lawn.



The heavy snow was too much for this roof at Ruth Lake C.C.

SUPPORT YOUR ADVERTISERS

Nels J. Johnson, Tree Experts, Inc.

SINCE 1930

Complete, economical tree service for Private Estates, Parks, Municipalities, Golf Courses, Cemeteries, Schools, Industrial Areas.

All phases of Arboriculture, Diagnosing, Pruning, Treating, Transplanting, Fertilization, Hydraulic and Mist Spraying, Removals, Stump, Routing, Municipal Forestry.

—FULLY INSURED—

Licensed under the Illinois tree expert act. Nels J. Johnson, Sr., Joel Johnson, Jr., and Karl Johnson.

MAIN OFFICE: 912 Pitner Avenue, Evanston, Illinois
Phones: GRreenleaf 5-1877 — GR 5-5255
Hinsdale, Illinois — FA 5-0970

THE WATCHFUL SCOTCHMAN'S TIMELY TURF PROBLEMS— POTASSIUM

Much discussion has centered around the use of potassium and the application rates necessary to maintain a strong healthy turf in recent years. Although potassium is one of the three major plant nutrients, of the 16 total essential elements necessary for plant growth and development, it's role in plant growth remains somewhat undefined.

While plant requirements for this element are quite high, second only to nitrogen, in tissue content, soil microorganisms also require considerable amounts of potassium, and compete with the grass for the available potassium. Most turf tissue analyses will show approximately a 3:2 ratio for nitrogen to potassium where adequate levels of potassium are available in the soil. Thus where clipping removal occurs large quantities of potassium can be removed from the soil annually.

Potassium, being quite mobile within the plant tissue, is translocated to the younger meristematic tissue first. As a result, whenever a shortage occurs, the older tissue will be the first to show a deficiency. The deficient symptoms are usually a chlorosis, differing only from iron chlorosis by occurring in the older leaves first as opposed to the younger tissue for iron chlorosis.

Unlike most of the plant nutrients, science has not determined the exact role of potassium in the plant system. However, it is thought to:

1. Aid in disease resistance.
2. Provide winter hardiness.
3. Aid in wear tolerance.
4. Promote growth of meristematic tissue.
5. Adjustment of stomatal movement and water relations.
6. Nitrogen metabolism and synthesis of protein.

Like all plant nutrients a balance must be maintained in the soil system to provide a positive interaction and uptake availability of the nutrient. Although the quantity of potassium found in most mineral soils is often quite high, frequently only small amounts may be in the available form (K^+) as compared to the total amount in the soil. A deficiency or an excess quantity can cause an undesirable interaction with other essential nutrients, and can lead to either deficient or phytotoxic levels of other nutrients within the plant. As an example, high levels of NH_4^+ can reduce the uptake of K^+ or where NO_3^- levels are deficient K^+ uptake will be restricted even though there are sufficient quantities of K^+ in the soil. Also excessive levels of K^+ can inhibit the uptake of calcium, magnesium and manganese.

When applying potassium to raise deficient soil levels, corrective applications of either sulfate of potash or muriate of potash should be made during mid to late fall or early spring when the ground is not frozen to avoid loss through surface runoff, as potash is extremely soluble. Summer applications of potash as a maintenance feeding of a complete fertilizer are recommended to maintain a strong and healthy plant system. It is recommended to have your soil tested before making corrective applications of potash, or any nutrient, so as to avoid excessive levels, and maintain the proper balance between plant nutrients.

Credit - Turfgrass News

If you think of giving, but never do; if you think of helping, but never come through; if you think of being encouraging, but grumble, instead; my friend, think not of dying—you're already dead.

John M. Cline

- All Major Turf Supplies
- Par-Ex
- Bean Sprayers
- DuPont
- Chipco
- Vertagreen
- Daconil - Dacthal

Quality — Value — Service

PAARLBERG CHEMICALS

1840 E. 172nd & Paxton, So. Holland, Ill.
GR 4-3086 747-0630

Trying to kick the coffee habit? Take vitamin C. Czechoslovak scientists investigating vitamin C were suprised to find that coal miners taking 150 mg. of vitamin C daily were more alert and had fewer accidents than controls.

A budget is an attempt to live below your yearnings.

Education consists of pounding abstract ideas into concrete heads.

ANNOUNCING
Spotrete-F
THE FLOWABLE THIRAM

- NO IRRITATING DUST
- NO MORE WEIGHING
- EXCELLENT COMPATIBILITY
- NON-PHYTOTOXIC

See your local distributor or contact
WA-CLEARY CHEMICAL CORPORATION
P.O. Box 10 Somerset, NJ 08873 (201) 247-8000

ELECTION OF OFFICERS

FROM: The Office of Dorothy Warren, Exec. Secy. - (312) 974-1121. Mr. Al Herbster of the University of Chicago, Chicago, IL was elected President of the Illinois Turfgrass Foundation, Inc. at the recent meeting of the Foundation held in Urbana, Illinois. Tom VanDeWalle of Short Hills Country Club of East Moline was elected Vice President.

The Board of Directors are Bob Bethel, Little Wheels Turf & Equipment; Dale Habenicht, H & E Sod Nurseries, Inc.; John Latting, Professional Turf Specialties; Duane Hobbs of the DuPont Company; James Manka, Old Warsaw Country Club; Charles McGinty of McGinty Bros., Inc.; Charles Meaker, Rogala Public Links and Richard White, Village Green, Ltd. Mr. Dave Fearis will remain on the Board as President Emeritus.

The Illinois Turfgrass Foundation membership is composed of sod growers, landscapers, homeowners, parks, cemeteries, golf clubs, suppliers and other individuals or groups interested in the establishment and maintenance of turfgrass.

The purposes of the Illinois Turfgrass Foundation are to encourage research on turfgrasses in Illinois, and to co-operate in the dissemination of knowledge among persons concerned with the establishment and maintenance of turf grass areas.

The Advisory Council consists of Dr. Al Turgeon and Dr. John Street of the University of Illinois. Dr. Herb Ports of the Southern Illinois University is also an Advisory Council member.

Illinois Turfgrass Foundation

The sympathy of the Midwest Association of Golf Course Superintendents is extended to the Graffis family due to the death of **Joe Graffis**. Joe lived most of his life time in the Chicago area. He was co-owner and publisher of "Golfdom" and "Golfing Magazines". He was president of the National Golf Foundation of which he was a co-founder. Joe was also a co-founder of the Midwest Regional Turf Foundation. At that time he was elected treasurer. Joe always made the statement when he was elected to the treasurer's position, the reason was that they had no money.

The following bits were heard at the Colister Hotel breakfast during the GCSAA golf tournament.

Hey, **Mike**, you're supposed to look under your chair. You may have won a free week at the Colister next year.

Bruce - I dreamt you never got the honor until the 15th hole, then I woke up.

You wanna know what a dumb thing I did - I packed "long johns" tops and no bottoms for Kenny.

Would you believe my partner had a duce (4 inches from the cup). I hit four balls in the water and ended up with an eleven.

Hey, **Paul**, who's winning the Gin Tournament? Oh, **Mike** and I definitely but it's not over yet - wait until Friday night.

New arrival said this place is for the newly weds or the nearly dead.

Hey, Honey, how many charms do I have now from Upjohn? You have only one - Oh, go on, I've been to at least 4 conferences - Well, I am telling you - You only have one - Me! [**Mrs. W. Saielli**]

WANTED - Second hand tractor to be used for pulling a fairway unit. Must have a good running motor and fairly good frame. Contact **Tom Vieweg**, 312-639-4867.



DAVIS GRASS SEED / DACO FERTILIZER

SOME OF THE LINES WE CARRY TO SERVICE YOU . . .



FERTILIZERS

Daco

Milorganite

USS Vertagreen

Vitex

FUNGICIDES / HERBICIDES / INSECTICIDES / REPELLANTS / RODENTICIDES

Amchem
Aquatrols
Chevron
Diamond Shamrock

Du Pont
Elanco
Geigy
Gordon

Mallinckrodt
Marine Biochemist
Ortho
Rhodia

Riverdale
Rohm & Haas
Tuco
Velsicol

TURF AND GROUNDS EQUIPMENT

Ames
Brutus
Cyclone
Gandy
Giant Vac
Gilson

Goodall
Green Machine
Hahn
Howard Commercial Mowers
Howard Rotovator
Jaydee
Larson

Lindig
Line King
Locke
M T D
Mc Guire
Mott
National

Parker
Ryan
Sensation
Turf Vac
Union Fork & Hoe
Weed Eater

TREE AND SHRUB EQUIPMENT

H. K. Porter

Lombard

Stihl

McCulloch

Snap-Cut

TEE AND GREEN EQUIPMENT

Chicopee
Henry

Lewis
Par Aide

Shen Products
Sherrit
Stewart-Decatur

Shur-Way
Standard

George A. Davis, Inc.

5440 NORTHWEST HIGHWAY, CHICAGO, ILLINOIS 60630 • 312-763-6363