The straight cut, the clean cut, the whole cut.

The new 2500 Tri-Plex Greens Mower from John Deere.

Soon, greens everywhere will experience a tri-plex mower that not only delivers a superb straight cut but also excels at the cleanup cut. That’s the essence of the new John Deere 2500 – a quality of cut that’s second to none.

The 2500’s John Deere designed and manufactured cutting units feature a new bedknife-to-reel design. The superior offset cutting unit design provides the operator with a clear view of the centre cutting unit and helps reduce “tri-plex ring”.

Operators have never had it so good. The operator station on the 2500 has convenient fingertip controls for the throttle, reel drive and cutting unit lift/lower. The 2500 is also extremely service friendly. Cutting units can be detached in seconds, with adjustments designed with the technician in mind. And daily service points can be checked from one side of the machine.


Nothing runs like a Deere

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Welcome to the inaugural BIGGA workwear and casual clothing range. Late last year, BIGGA and Stylo joined forces to bring you this exciting range of clothing and footwear for 1999.

Included in the range is the first ever BIGGA approved golf shoe, the Duo - a technologically advanced shoe designed to provide the ultimate combination of on-course comfort and functionality. This shoe accommodates both softspikes or traditional spikes - both with the revolutionary quick-fit Q-Lok system.

All the clothing featured here is manufactured to the highest specifications in durable materials - offering working comfort as well as practicability. All items subtly feature the BIGGA logo.

While all the garments and footwear featured represent exceptional value for money - they have also been designed to be practical and stylish for general leisure as well as for work use.
To purchase merchandise from the 1999 BIGGA collection, simply indicate which products you require in what quantities and sizes, using the order form printed here. (You may photocopy this form to avoid cutting your Greenkeeper International)

All prices shown are inclusive of VAT. Orders under £200.00 will incur an additional £4.00 postage and packing supplement.

After completing your order details, next complete your name and address details, and return this form with your VISA details or cheque (made payable to BIGGA) for the full amount (inc postage and packing).

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ALS Premier Bio-Organics. The natural solution to your turf care and soil problems.
Philip Sharples takes a look at what can be achieved today with the help of modern technology, knowledge and water

Where does water come from?

Water, there is only so much of it and nature is not making new supplies, only recycling a portion of it. In fact, much of the world's water supply, in excess of 99%, is unavailable for man's most important uses: drinking, manufacturing, sanitation, recreation and irrigation because it is tied up in the world's oceans and polar ice caps.

The amount of water on earth is essentially non-destructible and fixed. Certain types of volcanic eruptions add small amounts of new water, but it is insignificant in the overall scheme. World wide, some 80,000 to 85,000 cubic miles of water evaporate from the oceans each year.

So now we know a little about this resource, do you think we should begin to save, reuse or recycle the water available to us? When applied to turf grass management, it boils down to some very fundamental, down-to-earth changes in habits and practices.

Water Conservation

Every turf grass manager, in the entire world, surely must begin (if not already) to plan and implement a programme of water conservation and wise management of this finite resource. The immediate results will be savings in cost. Less water will be consumed, which will result in a reduction of the pound spent for the water and the cost to pump and transport it.

But more importantly, far more importantly, it will help the turf manager prepare for the day when it will become necessary for him/her to function with less water. Perhaps the water simply will not be there, physically (save this year!) in the current quantities or because some bureaucratic or legislative authority will...
have diverted it to a purpose considered more politically important. There are six basic steps that will lead to water conservation and improved management. These often receive far too little attention and respect.

1. Establish watering priorities. Give the highest priority to the most intensively managed areas.
2. Improve irrigation scheduling. Follow sound irrigation practices. Irrigate when there is the best combination of reduced wind, low temperature and high humidity.
3. Reduce, or avoid where possible, other causes of stress. Make certain there is adequate internal soil drainage to ensure maximum root growth. Most importantly avoid root zone saturation.
4. Alter cultivation practices. Test for soil fertility. Raising the height of cut for all areas by as little as 1mm can have a significant effect on the ability of the grass to tolerate stress and make more efficient use of soil moisture. Increase the frequency of soil cultivation to trap moisture and hold it in the vicinity of the root system.
5. Expand the use of mulches.
6. Erect wind barriers on large expanses of open space.

Water Management

It is thought that many involved with the turf management business are guilty of misusing water, to a lesser degree on golf courses. Yet golf courses do not take full advantage of the many technical accomplishments of the irrigation industry. We must integrate the art of water management and the science of water management. The consequences of not applying what is now known and available in these areas is that we are borrowing a major source of water from the future and missing an opportunity to become leaders as water conservation authorities.

We need to learn more about such things as drought tolerance and rooting characteristics of grasses, water requirements, watering techniques, water conservation, soil-air-water relationships, leaching, weeds and their ecological relationship to the turf grass environment. As you have read, there are many factors and variables involved with effective irrigation. I would like now to concentrate on one aspect, Irrigation scheduling and application.

Irrigation scheduling and application

Irrigation scheduling technology (computer aided) has developed rapidly and now assists in reducing water run-off, leaching, salt accumulation, excess evapotranspiration (ET) as well as, monitoring system effectiveness, storing all data and setting application timing, in the field and/or in the office.

The decision to irrigate turf should be made on an "informed" basis. Too frequently irrigation practices fail because they have been established by habit or calendar reference dates. Actually, good irrigation practices are dictated on a day-to-day basis by specific turf grass needs, soil characteristics, projected weather conditions and the purpose and function of the area to be irrigated. Thus, the criteria affecting the decision-making process concerning irrigation involve a dynamic, ever changing set of conditions which all must be assessed by a Course Manager with intimate knowledge of the criteria.

A responsible Course Manager will consider the temperature, atmospheric relative humidity, cloud cover and wind conditions effecting the evapotranspiration rate, plus the anticipated rainfall for the next few days. Finally, an assessment must be made as to the capabilities and weaknesses of the irrigation system in relation to supplying the needed amount of water within a specific amount of time. (PC operated systems do this for you automatically!) Based on these evaluations only, decisions are made as to when to water and how much water to apply.

This decision is made even more complicated because soil moisture content will vary at different locations on the golf course. Some sites may tend toward perpetual wetness, while others rapid drying. Consequently, the irrigation programme must be adjusted for the variable soil and drainage conditions.

Technological tools assisting irrigation scheduling practices, recording plant growing days and cataloguing fluctuations in rainfall and temperatures (environmental monitoring equipment) also play a vital role, there are three main types utilised:

1. Soil based, to monitor soil water status these include, soil moisture sensors, tensiometers and infiltrometers
2. Plant based, to monitor plant temperatures and water status, the best available technique here (at this moment in time) being visually watching for wilt. I am sure one day chromatography - infra-red mapping of canopy temperature - will be a viable technique.
3. Atmospheric, to monitor atmospheric conditions that influence ET rates, these include, wind speed monitors, temperature gauges and evaporimeters.

All the above used and recorded daily through a weather station and software support will help ensure Best Management Practices are adhered to and utilised.
Packages are available that are specifically designed and developed to assist the turf professional and can advise on all the aforementioned.

All the pre-mentioned, what we will call a "modern system", allows irrigation according to evapotranspiration and soil conditions in a condensed amount of time. A shorter irrigation cycle not only saves money and general wear but starts the system later at night, giving more time for rain and reduced irrigation time reduces inconvenience and irritation to golfing memberships.

**In Summary**

Installation of a state-of-the-art computer operated irrigation system, or modernisation of the existing can only achieve optimum irrigation scheduling and application.

Significant reductions in pesticide usage, fertiliser applications, electricity costs, water usage and even manpower can be achieved by applying best management practices. A computer efficient, low-pressure irrigation system (low-pressure water is less affected by wind) and site-specific heads allows for low water use and maximum coverage. Optimum water usage means to the turf manager a decrease in:

* Soil compaction
* Fertiliser leaching
* Salt accumulation
* Disease susceptibility
* Wear and tear and pumps and irrigation systems
* Weed population
* Insect population

But, perhaps most important of all, it shows the world that the turf grass managers are in fact very environmentally friendly and aware. What do you think?

Philip Sharples works for Cosmos Control Systems.
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Greenor* and Bastion* T control a wide range of weeds and give outstanding control where Daisies, Slender Speedwell and other difficult to control broad leaved weeds are a problem.

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Don't just knock 'em back. Knock 'em out!

Greenor* contains fluroxypyr, clopyralid and MCPA.
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* Bastion T and Greenor are trade marks of DowAgro Sciences

READ THE LABEL BEFORE YOU BUY. USE PESTICIDES SAFELY.
Carol Dutton, herself a well known face in the industry, speaks with four women who prove that there is a place for the distaff side in what is a male dominated business.

Despite Sally Doherty's triumph as Toro Student of the Year competition last year, the professional turf industry is still a man's world. Both BIGGA and the IOG report approximately 10 lady members each, out of a total of 6,600 greenkeepers and 4,500 groundsmen.

Saltex last year hosted over 400 companies exhibiting at Windsor, two of which gave women's contact names in the official catalogue, and this year's BTME did little better, with two of the 178 exhibitors sporting women at the helm.

What makes a woman consider entering such a traditional male bastion? How does she cope when she gets there? And are there any signs that attitudes are changing as we move towards the Millennium? I spoke to four brave females who by their very presence in the industry are defying the norm - two at the top of their respective companies, one deputy head groundsperson, and a young student greenkeeper, to gauge their experiences.

Sarah Turner, who at 22 is the youngest of the four, and is studying for her National Diploma in Horticulture while working at Woking Golf Club, has had the smoothest career path so far. Although her parents wanted her to go to art school, she stuck to her guns and took her National Certificate in Horticulture at Sparsholt College while doing voluntary work at Weybrook Park Golf Club. Having shelved early plans to be a vet, Sarah, who always liked sport, was determined to work outdoors, and approached a variety of sports venues for work experience. Weybrook Park accepted her, and led to her present position at Woking.

Sarah's main problem on arrival at the club, was shyness. Course Manager Sandy McKechnie, who has spent 24 years in the profession, remembers.

"It took her six months to settle in, and she was very shy with all the men." Nevertheless, after that first year as a temporary placement, the club decided to keep her on, paying the course fees themselves. Sandy, who has never worked with female staff before, now regards his latest protege as a full member of the team.

"We would like to keep her when she has finished her course, the only problem I can see is that once she's qualified she is going to want twice the salary she is on now. I don't know if the club can afford it."

Sarah would be happy to stay.

"The lads have been great. You get the odd joke but you just join in. I think a few more women are doing male dominated jobs now and as long as we're given the opportunity and are willing to do the work we'll be OK. Some of the work here is very physical and that's quite hard but you just have to cope," she said.
Lucy Dalrymple
Alison Brace, Deputy Head
groundsperson which launched her
advertisement for a trainee
agricultural college. After travelling
actively discouraged from attending
of office working parents, she was
Groundsperson at Brighton College,
and it was the first time that I had
encountered any hostility.
Care, she insists that she has never
and has remained ever since.
Rangers which reinforced her belief
that she wanted an outside job.
Alison joined the Countryside
for a year when she left school,
and was where she was deeply
The job was with Brighton
College, and Alison, who was laugh-
ing at herself when I spoke to her,
for wearing a mohair jumper while
interview thinking "I can do that"
and has remained ever since.
Now, six years later, and engaged
on an NVQ Level 2 course in Turf
Care, she insists that she has never
encountered any hostility.
"I have never felt victimised, and
being a woman can be an advantage.
I was on a course two weeks ago,
and it was the first time that I had
not been the only female. If you are
the only woman present, you always
get to know the lecturer. They tend
to remember you and this can help
yours.
Alison admits that the job has
become easier now that she has
proved her worth.
"When I first started I had to work
doubly hard to get the same respect
as a man. In some ways, the doubt is
always there. I suppose my parents
have said that because I'm a girl I
can't do this, and I still feel I have to
prove myself."
Lucy Dalrymple, Managing
Director of Arbor Eater, suffered no
parental misgivings as she was born
into the business. Her father was a
tree surgeon who invented the origi-
nal Arbor Eater wood chipping
machine, and built one for himself
before going into production. What
is unusual is the fact that although
she is the eldest of four children,
Lucy's father chose her, rather than
either of her two brothers, to join
him in the business.
"When the phone starts
ringing,"
Sarah Turner
father's retirement last March, Lucy
realises that she still has a lot to
learn.
"I still have to phone Dad for
advice when I don't know what to
do, but I think he gets quite upset
because I don't need him so much
anymore."
Lucy's working history - secretari-
al qualifications gained after leaving
school, which led to magazine pro-
duction and an editorial job, before
she joined an engineering company,
gives only slight clues to her eventu-
lar career destination.
While co-ordinating engineering
staff employed on oil rigs, she found
a mistake on a technical drawing,
which had escaped the attention of
a group of highly qualified men.
They had been studying the plan
for some time, before I wandered
over and spotted that a staircase had
been drawn with the risers and treads
reversed.
With her extraordinarily selective
memory, which always remembers
solutions to technical faults, (Lucy
freely confesses that she forgets
other things), and the fact that the
family firm provided the opportuni-
ty to develop her innate skills,
perhaps Lucy's rise to her present
position is not so unlikely.
There is nothing in Lynda Green's
family background or previous
employment to suggest that she
would become a Director of C.P.
Soilcare Ltd., but her love of
machinery can be detected almost
from the start.
Lynda remembers that the company,
Lommet Aviation, based at Ipswich
Airport, was where she was deeply
involved with aircraft. Later she
worked for Suffolk Light Aircraft
Maintenance.
"I spent hours in the aircraft
hangar, doing anything and every-
thing - stripping down aircraft
fabric, putting wings on, helping to
change spare parts, I couldn't keep
away. Maybe flying from the age of
12 had something to do with it."
A series of administrative posts led
her to the position of secretary to the
Financial Director at Ransomes
"I have never felt victimised, and
being a woman can be an advantage.
I was on a course two weeks ago,
and it was the first time that I had
not been the only female. If you are

Sarah Turner