

Organic And Slow Release Fertilizers

Golf course superintendents are expected to produce quick results at a low cost. In the case of turf fertilization, demand resulted in the use of salt-based, high-nitrogen fertilizers. However, the use of such fertilizers had its price. Fertilizer burn was a constant possibility, and the high solubility could lead to groundwater contamination. Additionally, many repeated applications during the year were required, tying up valuable labor.

The trend in fertilization today has moved away from the "quick fix" philosophy toward fertilizers that deliver a sustained delivery of essential elements throughout the growing season. Nitrogen, which is necessary for the synthesis of enzymes, proteins and chlorophyll in a plant, has especially been a major focus for turfgrass researchers and manufacturers.

Nitrogen is abundant in nature. The air is a blend of nitrogen and oxygen. However, these elements are not found in a compound, only in a mixture. This "free nitrogen" can combine with another element or elements to form a compound. Since turfgrass cannot use free nitrogen as a nutrient, it must be "fixed" in a compound in order to be serviceable to the plant.

The nitrogen cycle in nature employs soil micro-organisms to fix nitrogen. Bacteria and certain algae combine the nitrogen with hydrogen to form ammonia. Through a process called nitrification, the ammonia is further converted to nitrate, which then can be used by the plant.

Legumes, the pea and bean family, is one plant group that can use free nitrogen. Legumes generally have nodules on their roots containing bacteria which fix nitrogen. In the past, farmers would "grow" nitrogen by cultivating legumes inoculated with *Rhizobium* bacteria.

Animals have the ability to fix nitrogen. An animal can ingest plant material with a relatively low nitro-

gen content and produce manure, which is rich in nitrogen.

The power of a lightning strike can also fix nitrogen. (One theory even states that nitrogen fixed by lightning made the first forms of life on Earth possible.) Fertilizer manufacturers use energy to fix nitrogen, similar to an artificial lightning strike.

The nitrogen is combined with hydrogen under pressure in the presence of heat to form ammonia, and then fused with oxygen or other elements to form substances such as ammonium sulfate, urea, ammonium nitrate, sodium nitrate and calcium nitrate. These forms of nitrate nitrogen are all available to the plant very quickly.

Slowing Down Delivery

Faced with demands from turf managers, nurseries and other landscape professionals, fertilizer manufacturers have produced a wide array of products that accomplish slower delivery of nutrients, especially nitrogen. Some have been developed only recently, while others have been available for years.

Quick-releasing forms of nitrogen, such as urea, may be coated with various substances to allow sustained release as the coating wears off. The "triggers" that cause these fertilizers to release their nitrogen include soil moisture, temperature, microbial activity and particle size. In addition, the soil's pH can also play a role.

Sulfur-coated urea (SCU) has been an industry standard for several years. The urea, held from escaping by the sulfur coating, escapes through cracks and pores. The breakdown of the coating and release of the urea is accelerated by microbial activity. In addition, the varied sizes of the particles cause some to release more quickly than others.

Resin-coated fertilizers are also a popular option. Water vapor penetrates the coating and dissolves the

nutrients inside. The fertilizer is then slowly diffused through the coating. These products rely on the temperature of the soil as a release mechanism. The warmer the soil, the quicker the release.

The latest coatings are polymer-based. This polymer coating depends mainly on soil moisture as a release mechanism. However, once the diffusion process begins, varying levels of moisture do not affect the speed of release, which is governed by the thickness of the coating. Polymers and sulfur also have been combined to create a "hybrid" coating.

Uncoated, slow-release fertilizers are also available. Ureaformaldehyde (UF), synthesized by combining urea and formaldehyde, is dependent on both temperature and microbial activity to initiate release. Isobutyli-dene diurea (IBDU) is manufactured in a similar manner, but depends on soil moisture as a release mechanism. It is relatively unaffected by either microbial activity or temperature. The rate of release is determined by various particle sizes.

Superintendents that favor liquid fertilization also have a slow release option. Methylene urea (MU), used in liquid formulations, depends on both microbial activity and soil temperature for release.

Organic Fertilizers

Ten years ago a superintendent who admitted using organic fertilizers may have been considered a bit eccentric. However, today there are several organic fertilizer formulations on the market, with more and more superintendents exploring their possibilities.

"Organic" simply means that a substance contains carbon. Strictly speaking, IBDU and UF are organics, because they also contain carbon. There are even formulations available that combine organic and synthetic fertilizers. Perhaps a more accurate

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SUCCESSFUL COACHING (For Golf Course Coaches)

By CHAD EBERHARDT
The Grass Roots

Being a successful golf course superintendent consists of more than teaching fundamental skills and manipulating textbook agronomic principles into workable golf course applications.

Motivating crew members to work hard and believe in themselves is also a full-time task.

Whether we like it or not, we're also salesmen, communication specialists, and psychologists. It all comes with the territory.

In other words, golf course superintendents are coaches.

In a nation that is becoming one in which apathy and satisfaction with mediocrity is the rule rather than the exception, why not consciously manage your crew as a team in the sport of golf course management?

After all, sports offers participants the opportunity to pursue excellence and overcome adversity, and in the process to extend themselves to the limits of their ability.

Although we face a multitude of tasks much like coaching in our work (e.g., scheduling, budgeting, maintaining equipment and facilities, paperwork, etc.), the coaching task itself can be reduced to two areas, teaching and motivation.

We teach crew members the skills, patterns and strategies necessary to operate in our sport, and then we motivate them to give their best efforts in "playing the game."

Obviously, the better teacher a coach is, the more his/her players will learn in terms of skill, patterns and strategy—assuming that the coach possesses a basic understanding of the skills, patterns and strategies associated with the sport.

What is not so obvious is the fact that motivation involves far more than pep rallies, slogans and inspirational talks.

The best coaches in the business are, without exception, totally committed to excellence in their coaching. In order to build a successful pro-

gram, you must first develop your own set of philosophies and techniques. There is no such thing as a prototype coach.

Bobby Knight is supposed to be too intense and too tough on his players to get many of the top basketball prospects nowadays. But have you checked Knight's career won-lost record lately?

Many people who are opposed to Knight's philosophy and techniques keep hoping he'll fall flat on his face, but every year the wins keep piling up for Coach Knight.

Regardless of whether outside observers agree with your coaching style, you must make it work with the people who really count: your team. It is important that you surround yourself with a crew that will accept your style as best for them.

You, as coach, need to decide what kind of players you want on your crew. Selection of team members should be based at least in part on the basis of respect for you and other teammates.

It's all part of the "weeding-out" process when entering a new program or rebuilding an old one.

You'll need a good head assistant who shares in your sense of direction.

The key to a good relationship with your assistant(s) is contained in a single word: **Professionalism.**

As a coach, you will constantly transmit your values to your players, whether consciously or unconsciously. Sometimes you'll lose players whose values differ widely from yours.

Most of the athletes (employees) you come in contact with will accept your values as best for the team. Many of those players will, in fact, adopt your values into their own lives, which is probably the most important and lasting contribution you'll make to the people who comprise your team.

As mentioned previously, coaching styles vary with the individual. But, by examining a coach's program closely, you can see some basic guidelines by which they adhere.

1. Consistent relationships with their players. This doesn't mean that you have to treat all players alike; rather, it means that your players have the right to fair and equal treatment, whether in disciplinary matters or in helping them to solve personal problems.

If you can't be consistent in your administration of a rule, you should get rid of the rule. If you can't be up front, open and honest with your players, you shouldn't expect to develop an atmosphere of mutual trust and respect among your players.

2. They don't treat all players alike. They know who can be pushed and who requires pulling. Your players' motivations as well as their personalities vary widely. Some thrive on praise and compliments. Some players need the incentive of sharp criticism to stimulate them. If you study your players individually, you'll learn what motivates them best.

3. Great coaches are never too busy to listen to their players. Communication is a two-way street.

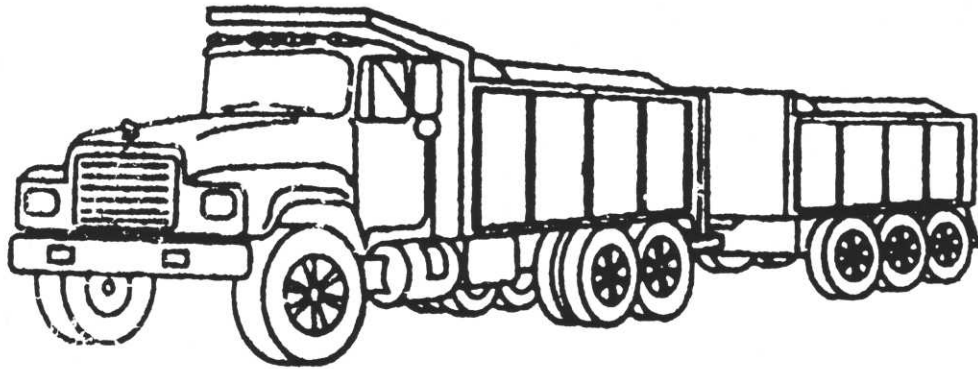
4. No matter how hard they drive their players, they treat them with dignity and respect. Don't rob them of their pride.

5. They are always searching for team leaders. Peer pressure is normally a powerful motivating force. Good team leaders can simplify your tasks enormously.

6. Organization. Good organization is a habit. Good coaches are good administrators. They can't afford not to be!

You still may not consider your crew a team in the sport of golf course management. Or, if you do, you may not agree with my viewpoint. But, you need to be aware that my philosophy of management exists, if for no other reason than to prepare your crew to work harder when going up against teams like mine.

Best of luck . . . Coach!



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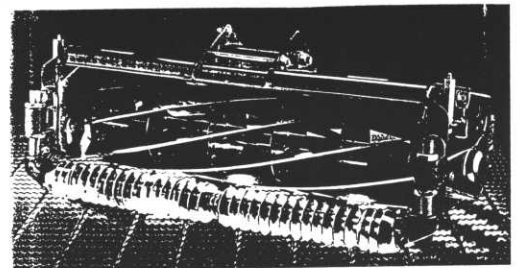
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1993 Turf Conference To Be Held at Minneapolis Convention Center

The annual MGCSA Turf Conference and Business Meeting will have a new look and feel to it in 1993.

The most significant change is in location. The Board of Directors of the MGCSA, during the meeting held at Mankato Golf Club on April 19th, approved a recommendation by the Conference Committee to move from the Northland Inn to the Minneapolis Convention Center.

The reasons the committee made this recommendation are varied and many. The first and foremost is to provide a quality education program at a competitive and realistic price. To accomplish this we have adopted a "workshop" approach to the conference. There will be a main room for general sessions with smaller classroom settings for "workshop" topics that we feel will enhance the educational experience. These sessions will have a single focus and, in most cases, more than one speaker will be featured.

With this format, the Northland Inn could not have handled our group adequately, thus the search for a new facility.

The Minneapolis Convention Center was opened in 1990 with the intention of hosting just such events as ours. The Convention Center is connected with the skyway system, which makes it possible to move around downtown without ever being outside. The committee has contacted hotels in the area, and we were pleased to learn prices are at or below those of the Northland Inn.

This is just the first article from the Conference Committee on the 1993 Conference and the changes that are being made. Change for the sake of change is not enough. To make changes that benefit the membership is what we, on this committee, feel our focus should be. We look forward to November 17th, 18th and 19th, the dates of the 1993 Conference.

—MGCSA Conference and Education Committee

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Here's How to Deliver A Pink Slip—Gracefully

Losing a job is traumatic, not only for the employee being dismissed, but also for the manager who must deliver the unwelcome news.

"Being fired is one of life's toughest experiences," says Bob Beal, vice president and general manager of Chicago-based Jannotta, Bray and Associates, an outplacement firm with offices in five U.S. cities. "There is a tremendous loss of self-esteem because individuals in our society are strongly identified with their work.

"It's a shock to the dismissed person to find himself without a job," Beal adds. "He needs support from someone to whom he can vent his feelings."

"A termination interview has been the cause of many sleepless nights for managers," says Bob Scheid of Humber, Mundie & McClary, a firm of industrial psychologists with clients nationwide. "But preparation helps the employee, and usually has a positive effect on what happens afterward."

According to Scheid, it's important for the employee that the dismissal be conducted in a humanitarian manner. But it's also crucial for the company, because any dismissal has the potential for serious consequences in company morale, public relations, future hiring and potential litigation.

"Dismissing someone from the company is probably the least favorite task for managers," agrees Phyllis Piano, a spokesperson for General Electric Medical Services. "But we think there is a way of terminating that is fair to the employee, and we do provide some training to help our managers handle these situations."

The face-to-face dismissals of the modern business world are a far cry from the early decades of this century, when termination notices came in the form of "pink slips" in pay envelopes.

Today human resources professionals recommend dismissing employees humanely. For example, they recom-

mend that managers never fire an employee on a Friday. There's too much time over the weekend for brooding thoughts of depression, anger and revenge.

Other suggestions:

Never surprise a person with a dismissal from the company. The termination should come only after a series of reviews that pinpoint performance deficiencies and indicate suggestions for correcting them.

Limit the actual termination interview to 15 minutes. Briefly and in a nonjudgmental way, the manager should make the dismissal and give the supporting reasons. Then he should listen, allowing the employee chance to react. He can then discuss the severance package and present it to the employee in writing.

Indicate what the next step will be. Depending on individual company procedures, the manager might suggest that the dismissed employee take the rest of the day off, direct the person to human resources for counseling, or introduce the outplacement professional waiting in the next room to help him begin the new job search.

As a safeguard many companies move quickly to cancel the terminated employee's access to the company computers and premises. At Harley-Davidson, for example, the dismissed person is escorted from the building and the systems staff is notified to cancel the employee's computer access.

GE Medical Systems protects the company by conducting an interview with the dismissed employee in which a company representative explains the necessity for keeping sensitive high-tech information safe from competitors. The dismissed person is asked to turn in his employee badge immediately.

With careful preparation and sensitive treatment, managers can sometimes succeed in softening the blow. "It's easier to be graceful now in dismissing a worker," notes Mary Lukas, vice president and employment

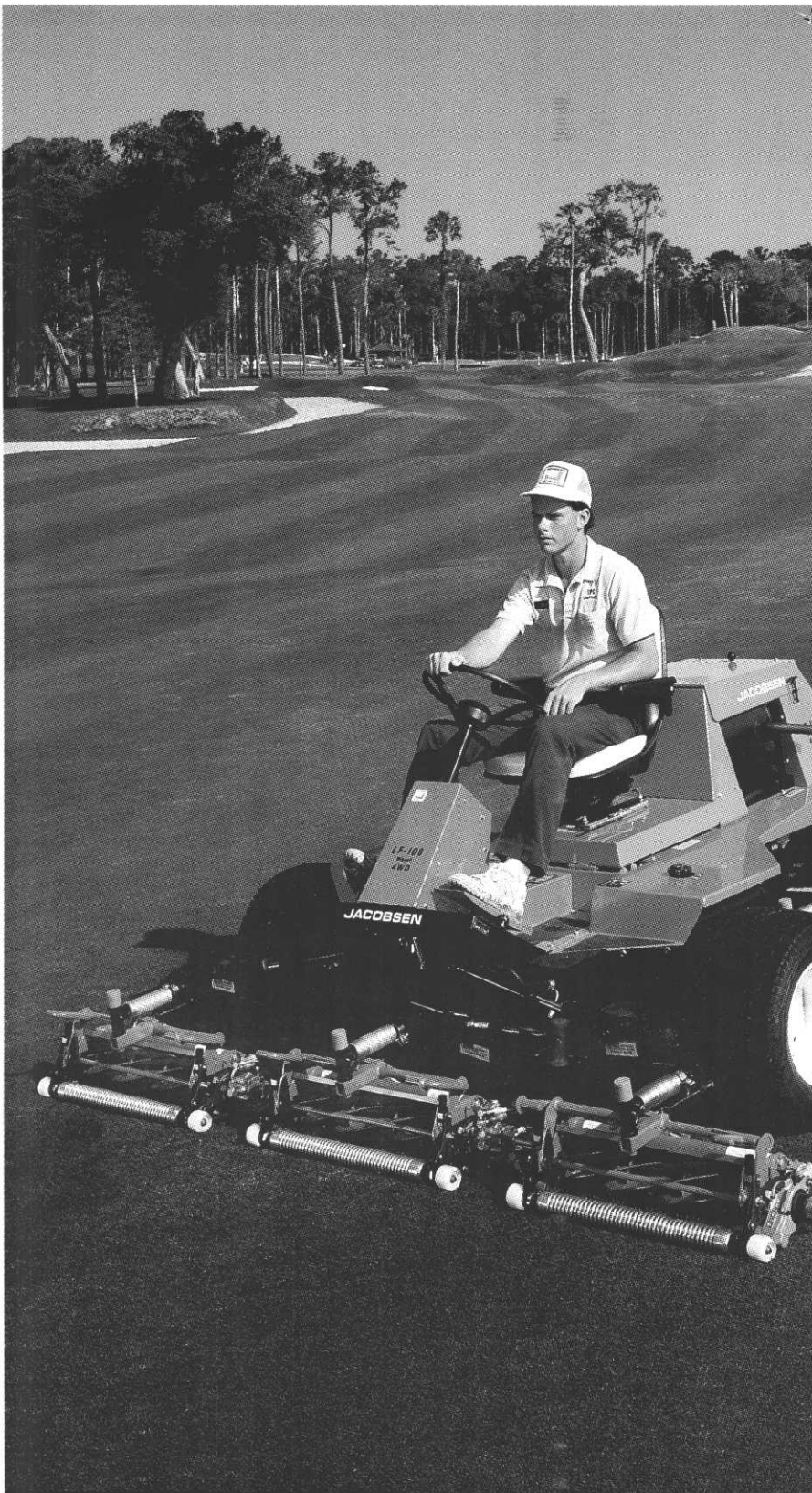
manager of the First Wisconsin Corporation. "Today people don't spend a working lifetime at one company."

"Firing may be bad news, but it can be done without antagonism and in a way that keeps the employee's dignity intact," says Paul Pagenkopf, vice president and general manager of Executive Assets Corporation, an outplacement firm with offices in six major cities. "I think it's possible to give a pink slip gracefully."

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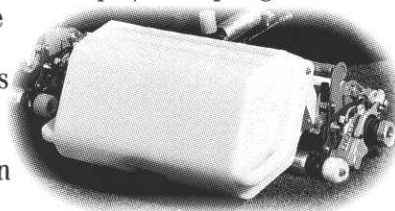
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Bureau Outlines Water Issues

The Bureau of National Affairs, a Washington-based information agency devoted to governmental affairs, has outlined key water issues to watch for in 1993.

GCSAA has gone on record stating it thinks water issues will dominate much of the regulatory and legislative arena in the coming year.

The issues outlined in the BNA report are:

- Inclusion of clean water funding in an infrastructure investment bill. If so, the drive to reauthorize the Clean Water Act may be eliminated.

- Efforts to modify the state revolving loan fund program, either in the allocation formulas or in the amount of funds available through the program.

- The initiation of proceedings to withdraw several states' and one territory's authority over their drinking water programs.



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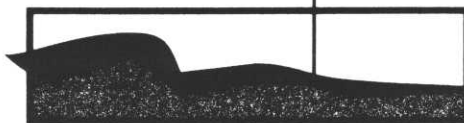
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Planning for Your Retirement

By F. Bill Billimoria

Most people, when planning for retirement, think first about money. They are concerned, and correctly so, about pension plans, the inadequacies of Social Security and the best tax-deferred investments. However, that is putting the cart before the horse. Planning for retirement should begin with deciding where you want the horse to go. Determine your retirement lifestyle goals first—preferably years in advance—then balance those goals with your checkbook by doing some realistic financial planning.

Begin by making a list of how you envision your retirement lifestyle. Each spouse should develop his or her own list, since you may have different dreams that may need to be reconciled. Some of the questions your list should address are:

- Where do you want to live? Somewhere warm? Big city or small town? Near your children or special friends or in a retirement community near a fish-filled stream?
- Take a good look at your current home. Would you feel more comfortable in a smaller home, a mobile home, an apartment? Do you want a place with a garden? Will you be able to handle the upkeep of your yard and the house? Is it convenient? Do you like the neighborhood, or is it time for a change?

Retirement is no longer a matter of settling into a rocking chair and dying two years later. You could be “retired” for twenty years or more. Think of it as a new phase of your life. List how you want to spend all that time. Travel? Where to? Maybe you want to spend time on your hobbies, return to the classroom, or do volunteer work. You may even want to start your own business (consulting, franchising, etc.) or work part-time for an employer.

Plan and pace the timing of these changes. Moving to Hawaii and starting up a small business the day after you have collected the gold watch is a tremendous adjustment, both for you and your financial resources. You may want to stay in your current home for several years, for example, before you move.

Once you have listed and prioritized your ideal retirement lifestyle, and the pace at which you will step into that lifestyle, begin to work with your advisor to determine where, realistically, the money will come from to achieve your dreams. Financial reality may dictate modifications of your goals, but by knowing where you want to go and how you are going to get there, you will have increased significantly the chances of achieving your retirement dreams.

Financial Issues

Once you have examined the non-financial issues of retirement—where you want to live, what you want to do—it is time to determine how much money you will need to save now to achieve your retirement lifestyle later. While it is best to evaluate your retirement strategies with the help of an advisor, the following offers some useful guidelines whether you use an advisor or not:

Start with anticipated expenses. A general rule is that you will need 70 to 75 percent of your preretirement income to live on during retirement. The percentage would obviously decline the higher your preretirement income. The rule works fairly well if you anticipate your retirement lifestyle to basically reflect your preretirement lifestyle: same home, same routine expenses, such as food, taxes, hobbies, etc.

A more in-depth approach is required, however, if you anticipate unusual expenses such as medical expense, taking care of an aging parent or an adult child, providing gifts to your grandchildren, retiring in a different state or a foreign country, or taking big-ticket vacations. You may also want to break down these expenses into those anticipated during early retirement (paying off your mortgage, for example) and later retirement.

How many years will you need to incur these expenses—that is, how long do you plan to live? Some experts recommend that you determine your post-retirement life expectancy, and double it! You will also need to take inflation into consideration, no easy job in itself.

Next, where will the money come from for your retirement lifestyle? Determine the Social Security benefits you will be entitled to, distributions from your company pension and profit-sharing plans, your own pension programs such as Individual Retirement Accounts (IRA's) and annuities, and income from your investments. Will you work part-time after your retire? Do you plan to sell your home? Take into account that too much income could affect Social Security benefits (up to age 70) and taxes.

Once you know what you need and what you have, determine how much money you will need to save each year until retirement to cover the gap, unless you are one of those who do not have a gap. If the gap is too great, you may need to cut back on your retirement ambitions (no trips about the world), increase current income, or increase current savings.

The time to get started on your retirement plan is NOW. In addition to taxes and inflation, the single most common reason why people fail to achieve financial independence at retirement is PROCRASTINATION. Surveys have shown that the biggest worry for most Americans is a secure retirement, yet most people spend more time planning their two week vacation than they do planning their entire retirement. Small wonder that of one hundred people reaching age 65, only four are truly independent, 23 have to keep working and 73 are dependent upon the government, friends and relatives!

(F. Bill Billimoria, MBA, CPA, CFP is President of Integrated Finances, Inc., a fee-based financial planning and investment management firm located in Arlington Heights.)