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Brown Patch, Rust, Slime Mold.

DISEASES OF ORNAMENTALS

Carnation	Leaf Spot
Crabapple, ornamental	Scab, Cedar-apple Rust
Dahlia, Lily, Tulip	Blight (*Botrytis* spp.)
Holly	Purple Spot
Hollyhock	Leaf Spot, Anthracnose, Rust
Honeysuckle	Blight (*Herpobasidium* spp.)
Iris	Leaf Spot
Pansy	Anthracnose
Rose	Black Spot
Snapdragon	Rust
Zinnia	Leaf Blight
Azalea, Camellia, Rhododendron	Petal Blight
Chrysanthemum	Petal Spot (*Botrytis* spp.)
Flowering dogwood	Anthracnose
Gladiolus	Leaf and Flower Spot (*Curvularia* and *Botrytis* spp.)
Pachysandra	Blight (*Volutella* spp.)
Peony	Blight (*Phytophthora* and *Botrytis* spp.)

Controlling diseases of turf and ornamentals requires a regular, preventive spray schedule rather than a curative one. A program of FORE fungicide gives you effective protection against 10 unsightly turf diseases plus algae and control of 22 damaging ornamental diseases. FORE is a broad-spectrum fungicide that helps maintain healthy turf and ornamental plantings. It is highly concentrated, making it an economical product, mixes readily with water, and stays in suspension with a minimum of agitation. Also, FORE is compatible with most other pesticides.

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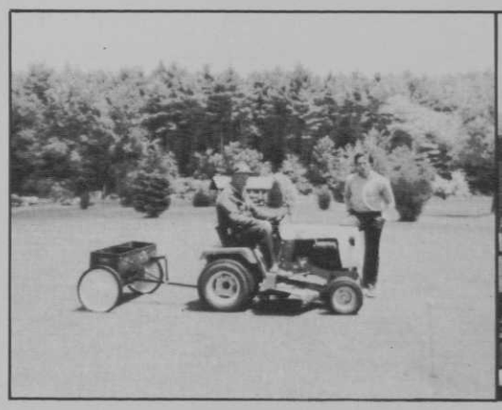
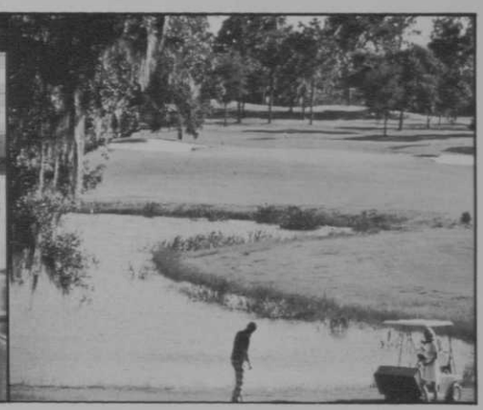


Permeability/p. 8

Budgeting/p. 10



Analysis/p. 20

golf business/october

FRONT COVER:
French and Korbobo have combined to write a series of articles to make the superintendent aware of the complete golf course.

VOLUME 53 NUMBER 10

FEATURES

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HARVEST

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Clippings

Brief bits of news from in and around the golf business . . .

Fred Grau, President of the **Musser Foundation** and honorary life member of GCSAA wrote recently, bringing us up to date on the ways the Musser Foundation is raising money to support turfgrass research. Turfgrass Benefit Tournaments is one. Frank Dobie, Tournament Director, has conducted six in northern Ohio, Scott Lamb and Bill Rose have conducted four in Oregon, and Harry McSloy and Dave Kroll have held three in Delaware. Then there are Free-will contributions, acceptable from anyone. We hope everyone who can will give something. Everything helps. There is a Memorial Fund category and Planned Giving Through Unitrusts. Dr. Grau has specialists available to help anyone who would like to leave a legacy to the future of turfgrass. And there are Named Turfgrass Research Fellowship Funds. There are four: Penncross Bentgrass Association; Fred V. Grau; Robert C. "Bob" Dunning; and Chemlawn. This is an annual contribution usually in the range of $500-1000 or more. Support turfgrass research!

Ray Gerber, Editor of the Bull Sheet, the Midwest Association of Golf Course Superintendents' publication, should have had a nice surprise when he received his copy. It would seem that someone had got to the printer with Ray's picture and a birthday message for the cover. Bet he was surprised.

Ram I Kentucky Bluegrass' crop registration appeared in the July-August issue of Crop Science. Developed cooperatively by the U.S. Golf Association Green Section, Lofts Pedigreed Seed, Inc. and the New Jersey Agricultural Experiment State, Ram I has shown "good tolerance to close mowing (2 cm), and an above average ability to resist invasion by annual bluegrass *(Poa annua* L.)."

Robert Hanna, Executive Director of Northern California Golf Association for the past 23 years, has been made Associate Director in accordance with his personal wish for future retirement. Dr. George Swendiman, Jr., president of the NCGA said, "The NCGA is sincerely appreciative of Bob's dedication to the game of golf and to the welfare of all members of the NCGA. His devotion and contribution will always be appreciated." Swendiman has appointed a Selection Committee to review and consider applications for the position of Executive Director of the NCGA. The address is: Northern California Golf Association, P.O. Box NCGA, Pebble Beach, CA 93953.

Notes from...

North Dakota

The Minot Park District in Minot, is looking for a golf course superintendent. It is an 18 hole, daily fee course. Seven people make up the crew. The course has a manual irrigation system on greens, tees and fairways. Benefits include hospitalization, pension plan and dues for the state association. Salary is negotiable. Send a resume to: Mike Nilson, Director, Minot Park District, Minot, 58701.

Conference Previews

Wisconsin

The 14th Annual Wisconsin Golf Turf Symposium will be in Milwaukee on October 24 and 25. The hotel has been changed. It is now being held in the Marc Plaza Hotel at 509 W. Wisconsin Avenue. The subject is to be "Better Golf Turf Through Research". Centering on nationwide research reports, speakers will illustrate the benefits gained from past research as well as projects now underway. Contact: Bob Welch, Milwaukee Metropolitan Sewerage District, 735 N. Water St., Milwaukee, 53202. Phone: 414/278-2036.

New York

The New York State Turfgrass Association is holding their Annual Turfgrass Conference and Trade Show on November 13-15 at the War Memorial in Syracuse. Three days of educational sessions will include the various facets of turfgrass research and management for golf courses, landscaping, parks and seed, among others. An optional pre-conference workshop on pest and pesticide education will prepare those interested in taking the Pesticide Certification Examination on November 12. The trade show has expanded and more than tripled in size. Contact: Janet Worthington Dudones, Trade Show Chairman, The Ed Worthington Corporation, 50 Petrova Ave., Saranac Lake 12983.

Arkansas

The 30th Annual Southern Turfgrass Conference and Show is being held in the Little Rock Convention Center — Camelot Inn on November 18-20. Governor Bill Clinton has declared the week as "Professional Turfgrass Superintendent's Week" to coincide with the conference. Sunday activities include a golf tournament and overseeding tour; four mini-seminars taught by Dr. John King from the University of Arkansas, Dr. Bill Knoop from Texas A&M, Dr. Lloyd Callahan from the University of Tennessee, and Dr. C.Y. Ward from Auburn University. There will also be a hospitality hour and a half. Dick Morey, Brantwood Publishing, will deliver the keynote address on Monday morning, followed by the opening of the Annual Trade Show. The Association's annual luncheon and business meeting will be followed by concurrent sessions including golf and will continue through Tuesday morning. A Research Update will follow the sessions and will include Drs. Callahan, Knoop, King and Dr. A.J. Powell from the University of Kentucky. Contact G. Euel Coats, Southern Turfgrass Association, Drawer CP, Mississippi State, 39762. Phone: 601/325-3138.

New York

The National Club Association Convention 1979 will be October 18-20 at Westchester Country Club in Rye. Thursday session is about computers. Friday will include sessions on Cost Control and Orientation for Club Officers/Managers. On Saturday, there will be concurrent seminars on "How to Identify, Control, and Reduce Golf Course Maintenance Costs and "How to Prepare For and Survive a Wage-Hour Audit". Contact the National Club Association, 1625 Eye St., N.W., Washington, D.C. 20006.

South Carolina

The United States Golf Association's Southeastern Region Green Section will hold a regional meeting in the Myrtle Beach Hilton, Myrtle Beach, on February 4, 1980. Contact James B. Moncrief, Southeastern Director, USGA Green Section, P.O. Box 4213, Campus Station, Athens, 30602. Phone: 404/548-2741.

Florida

The United States Golf Association's Southeastern Region Green Section will hold a regional meeting in the Quality Motor Inn, Cypress Garden, on February 6, 1980. Contact: James B. Moncrief, Southeastern Director, USGA Green Section, P.O. Box 4213, Campus Station, Athens, 30602. Phone: 404/548-2741.

News

ENERGY

"No gas" engine rated at 525 HP

Editor's note: Wendell Mathews, Editor of the American Sod Producers Association's "Turf News", attended a demonstration of this revolutionary new engine, and presented a one page article in the September/October issue of that publication. At present, there is an injunction against Magnatron, preventing them from releasing any new information about the new engine to the media (or anyone else). The injunction, brought by the Illinois State Attorney General, centers about the fact that the attorney general wants more information on who produces what parts for the engine, how they are made, etc. Magnatron has been advised by counsel not to provide that information. A hearing was held last week (September) by a panel of judges and Magnatron is awaiting their decision.

An Illinois inventor, Rory Johnson, has built an engine that uses no gas, is noiseless, pollution-free, never shuts off, and is guaranteed to run the engine at least 100,000 miles before refueling is needed. The engine costs approximately $4,000 including labor to install it. After 100,000 miles, the engine can be refueled for another 100,000 miles for about $350. It uses Mobil 1 synthetic oil for lubrication. However, because there are no pistons, the oil does not become contaminated and does not have to be changed more than once every 100,000 miles.

The engine, said to be the first of its kind in the world, produces electrical energy generated by the combination of deuterium, a hydrogen product, and gallium, a heavy metal. The engine runs at a constant 114 degrees Fahrenheit, regardless of outside temperatures.

Johnson feels that his new motor is particulary suited for powering farm tractors, trucks, cars or combines. Although it generates 525 hp, it can be regulated for vehicles that won't handle that much horsepower. He pointed out, that as a rule of thumb, the engine would be compatible with most tractors 150 hp and larger.

TURFGRASS

Va. bermudagrass shows hardiness

Golf Course Superintendent T.H. Davis pointed out a vigorously spreading bermudagrass to Dr. A.J. Powell of Virginia Polytechnic Institute back in 1972. Dr. Powell took a sample back to the Turf Research Center in Blacksburg where it survived the winters of '76-77 and '77-78, when most bermuda in other test plots was killed. The strain was then designated VPI C-1 for testing purposes.

VPI C-1 is being compared with Midiron, Tufcote and Tifway for spread and rate of establishment, from sod, plugs and sprigs. It is also being included in an observational trial of 12 vegetatively established or seeded bermudagrass strains.

Professors L.H. Taylor and R.E. Schmidt have noted that VPI C-1 has outstanding vigor and an attractive medium-green color. It forms a tight sod and tends to remain weed-free. The new bermuda shows possible value for use on golf course fairways, according to Taylor and Schmidt. If the data continues to look good, the strain should be commercially available in Virginia soon.

CONSTRUCTION

Jones to design N. Cal's new course

Robert Trent Jones, Jr. has been selected to design the Northern California Golf Association's (NCGA) new championship golf course in Pebble Beach, according to Dr. George A. Swendiman, Jr., president of NCGA.

The NCGA property is in the Hilltop area of the Del Monte Forest. The site lies above the world famous Spyglass Hill, Cypress Point and Pebble Beach courses.

Jones was flattered by the selection. "An opportunity like this may present itself once in a lifetime, he said. "I have the same feeling my father had when he first saw the dunes and forest on which Spyglass now rests. I feel like I have been handed a rare piece of Carrara Marble and asked to sculpt it. I have an obligation to the members of the Northern California Golf Association and to the Game of Golf to design a unique golf course.

Jones went on to say that "I envision an NCGA golf course which will have the same feeling you get on several of the back or forest holes at Cypress Point and on the #2 course at Pinehurst. The NCGA course will definitely be of championship caliber, perhaps shorter than Spyglass, with an emphasis on strategically placed shots, rather than distance. Around the greens, emphasis will be on chipping, much like Pinehurst #2. Construction is expected to begin in 1981.

GOLF BUSINESS pulse report—second quarter*	% of sample	average expenditure	total expenditure within sample	total expenditure projected to universe**
dry turf fertilizer	96.6	$ 3,308	$476,000	$ 39,300,000
liquid turf fertilizer	19.5	769	22,000	9,100,000
pre-emergence herbicide	61.7	891	82,000	10,600,000
post-emergence herbicide	61.7	687	63,000	8,200,000
aquatic herbicide	32.2	357	17,000	4,200,000
fungicides	81.9	2,311	282,000	27,500,000
turf insecticides	71.1	715	76,000	8,500,000
tree insecticides	26.2	193	7,500	2,300,000
seed	60.4	851	77,000	10,000,000
sod	19.5	1,418	41,000	16,900,000
tree fertilizer	19.5	214	6,000	2,500,000
trees	31.5	1,484	70,000	17,600,000
ornamentals	25.5	627	24,000	7,500,000
soil amendments	31.5	710	33,000	8,400,000
Tractors:				
less than 10 h.p	7.38	2,235	25,000	26,600,000
10-20 h.p.	8.72	3,908	51,000	46,400,000
21-30 h.p.	10.7	5,532	88,000	65,700,000
31-50 h.p.	13.4	9,305	186,000	110,600,000
larger	6.71	16,643	166,000	197,800,000
Self-Propelled Mowers:				
rotary	27.5	1,719	70,000	20,400,000
reel	43.0	4,456	285,000	53,000,000
flail	2.68	1,400	6,000	16,600,000
Tractor-Drawn Mowers:				
rotary	8.72	2,178	28,000	25,900,000
reel	22.1	4,759	157,000	56,600,000
flail	4.03	1,320	8,000	15,700,000
Irrigation Equipment:				
pumps	20.8	4,643	144,000	55,200,000
sprinklers	57.0	7,839	666,000	93,200,000
pipe	37.6	5,058	283,000	60,100,000
controls	23.5	3,547	124,000	42,200,000

*67 strategically located superintendents reported their expenditures for April, May and June, GOLF BUSINESS presents these figures as an ongoing effort to accurately picture the dollar volume in the golf market.
**These figures are based on the assumption that what is true of the superintendents responding to the questionnaire is true of superintendents in general. A universe figure of 11,885 superintendents is used.

A bigger little-big tractor.

Introducing, a new John Deere diesel tractor with a 33-PTO-hp turbocharged engine

Two years ago, John Deere introduced the 22-PTO-hp 850 and the 27-PTO-hp 950 diesel tractors.

They were simple, reliable, sensibly-priced tractors. And people loved them.

At John Deere, we called them our "little-big" tractors because they were big enough to handle many landscaping and construction jobs, yet small enough so they were economical to buy and operate.

And now along comes another one: the new 33-PTO-hp* 1050.

Optional mechanical front wheel drive pulls you through the toughest spots with ease.

It's a little bit bigger and more powerful than the other two, and it has some interesting new features.

But the principle is still the same. A simple, basic tractor at an affordable price.

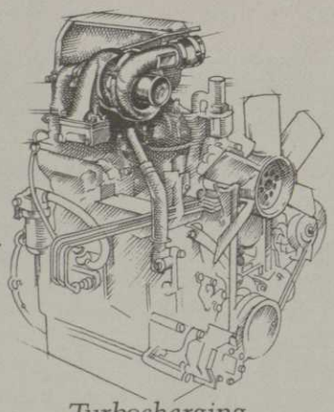
Features

Like the other "little-big" tractors, the 1050 has a number of big tractor features. Liquid-cooled diesel engine. 8-speed transmission. Differential lock. 3-point hitch. Adjustable wheel tread.

It also has some features the others don't have.

For instance, the 1050 is the only tractor of its size to have a turbocharged engine.

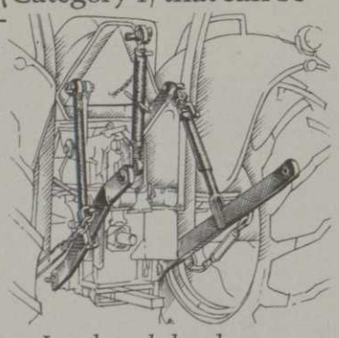
With a turbo, you get greater power in a smaller package. Plus fewer emissions. And smoother, quieter performance.



Turbocharging gives you more power, better fuel economy, a cleaner, quieter ride.

The 1050 also has a continuous-running 540-rpm PTO that keeps your implements running even while the tractor is standing still.

A "load-and-depth-sensing" 3-point hitch (Category 1) that can be set to compensate for variations in soil density. And both the 1050 and 950 offer optional mechanical front-wheel drive to give you sure-footed traction in almost any terrain or ground condition.



Load-and-depth-sensing 3-point hitch maintains constant depth when working with ground-engaging tools.

Attachments

Of course, one of the big reasons for buying a John Deere is the variety of tractor-matched attachments that go with it.

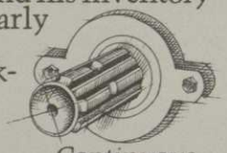
We have over 20 implements to choose from, including 4 different kinds of mowers, front loader, backhoe, box scraper, planters, cultivators, plows, rear blade, posthole digger and more.

We also offer a choice of bar or turf-type tires.

Parts and service

Needless to say, your John Deere dealer is a man you can count on for parts and service. And his inventory of implements is nearly always complete.

So if you're looking for a real workhorse at a sensible price, see the new 1050 at the John Deere dealer nearest you.



Continuous-running 540-rpm PTO keeps implements running at full power even while tractor is standing still.

Better yet, take it for a test drive. We think you'll agree it's the smoothest-running, quietest, most solidly built tractor in its class.

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Nothing runs like a Deere.®

For free literature, write John Deere, Dept. 63, Moline, Illinois 61265.

Maximum PTO horsepower measured at 2400 engine rpm (factory observed).

Experiments suggest permeability as basis for topdressing selection

By Ernest L. Kallander

Editor's note: This is a follow-up to "Modified sand topdressing at Stony Brook," which appeared in the July 1979 issue of GOLF BUSINESS.

Purpose: The purpose of these experiments was to determine the effect of the permeability and the screen analysis of top dressing materials upon the permeability of a golf green. Or, if we apply a relatively thick layer on a green what does it do to the receptivity of the green for water.

Previous history: Some have contended that a top dressing should possess a relatively narrow range of particle size. One stipulates that it should range between 0.11 mm to 1.0 m.m. In a previous article, I have argued that the screen analysis is a secondary property and useful only if it forecasts permeability. It must be conceded however that no particles should be so large as to fail to become imbedded in the turf, else the mower will suffer. Conceivably, you could have material composed of very flaky particles, meeting the above specifications but possessing a poor permeability because of their interlocking tendency and yielding a very low permeability, whereas another, having relatively round particles could possess a much higher permeability. What I am trying to say is this: our first consideration should be permeability, not screen analysis.

I have argued the same on the basis of hydraulics: If you have two materials in series, i.e., green soil layer (which sustains our grass-root system) and a top dressing layer; the one with the lowest permeability will determine the resultant. It is like an electrical system: suppose you have one object having an ohmage of 100 and another of one, the total in series will be 101 ohms and the conductance will be altered by only .01 amps when impressed with 100 volts; a rather negligible effect.

Apparently these arguments fell on unbelieving ears, so I undertook the following experiment to prove the reasonableness of the above. I selected several different materials varying widely in both permeability and screen analysis, tested them for these properties, and then applied each to a green in a 1" layer (enough in our case to equal that which we would apply in about fifteen years.) Four applications were made for permeability before and after putting down the 1" layer, waiting about one hour after the first.

SUMMARY OF DATA

Green No. 6 at Stony Brook - Water Reading - 18 Centibars

Sample No. / Commercial desc.		Supplier No. 1 brick mortar sand used at Stony Brook	Supplier No. 2 mortar sand used at Millwood	Sub Soil silt	Natural clay
Screen Analysis opening mm		all through ¼" mesh			
on 20		31	11.5	5.7	0
" 40	0.84	35	23.5	16.2	19.4
" 100	0.35	29	47.7	21.8	20.2
" 200	0.15	4	11.5	19.6	16.4
thru 200	.074	0.3	6.3	37.0	44.0
Percolation in/hr.		62	15	6.1	0.6
Green Permeability					
no top dressing		3.1	5.4	4.0	2.1
1" " "		5.3	5.9	3.9	1.2
Practice Green at Framingham - Water Reading - 12 Centibars					
No top dressing		—	.37	—	.45
1" " "		—	.42	—	.40

The compiled results are shown in the accompanying table entitled — SUMMARY OF DATA. My notebook data is included at the end.

Conclusions: The table of data substantiates our claim that the quality of the top dressing, within the indicated limits, has very little influence on the receptivity (permeability) of the green to water. It supports the arguments which I have advanced on the basis of hydraulics and the analogy of electrical conductivity. If it were not so, all these people who for years have been top dressing with ordinary soil, etc., would have been in trouble long ago. The contention that a very narrow range of screen analysis is necessary is, I believe, completely unfounded and should be rejected, unless, of course, there is some other consideration that has escaped my attention.

It will be observed that we need to go to a very heavy layer of top dressing such as No. 5 which contains 44 percent of its particles small enough to pass a 200 mesh screen, and less than .075 mm and have a percolation rate one hundred times less than No. 1 to obtain a significant reduction in permeability, i.e., from 2.1 to 1.2. Because of inherent variability in materials and method, the other differences in Nos. 1, 3 and 4 are not significant. This material (No. 5) would appear to make a good ceramic clay.

But, as I argued in a previous article, the principal function of the top dressing is to dilute the humus and to promote decomposition of the leaf residues, i.e., to decompose the cellulosic materials which compose the major amount of the dead grass.

Moreover, it should be realized that the top dressing becomes not a single homogenous layer but a heterogenous layer in which the humus fibers provide active channels for conductance of water and air. Added to this, is the small amount of clay, ground limestone, gypsum, etc. which further breaks up the homogeneity through the ever-present tendency toward agglomeration, a factor that rescues our clayey soils from complete desuetude.

In order to remove any objection to this thesis in that these tests were run on a rather permeable green, I tested the effects of top dressings No. 3 and 5 on a green (another course) having but 1/10th permeability of mine. Note in

the summary of data that the permeability was practically unaffected.

Supporting evidence is given in the following, reprinted from Bergelin, Brown and Doberstein, Trans. Am. Soc. Mech. Engrs. 74, p. 53 (1952):

Fixed Beds of Granular Solids. Pressure-drop data on the flow of fluids through beds of granular solids are not readily correlated because of the variety of granular materials and of their packing arrangement. For the flow of single incompressible fluid through a bed of granular solids, the pressure drop or other flow characteristics can be predicted from the correlations given by Leva (Chem. Eng. 56 (5), 115-117 (1949), or "Fluidization," McGraw-Hill, New York (1959). In this correlation:

(Editor's note: Some letters of the Greek alphabet used by Mr. Kallander have been transposed to their nearest typewriter look-alike. This does not affect continuity of the formulae.)

(Fig. 5-63)

$$\Delta p = \frac{2f_m G^2 L(1-E)^{3-n}}{D_p g_c p \phi_s^{3-n} E^3}$$

where Δp = pressure drop (lb. force/sq. ft.); f_m = friction factor, a function of $N_{Re'}$ given in Fig. 5-64; G = fluid superficial mass velocity based on empty chamber cross section, (lb./sec. sq. ft.); L = depth of bed (ft.); E = voidage (fractional free volume), dimensionless; ^{n} = exponent, a function of the modified Reynolds number $N_{Re'}$ given in Fig. 5-64, dimensionless; ϕ_s = shape factor of the solid, defined as the quotient of the area of a sphere equivalent to the volume of the particle divided by the actual surface of the particle, dimensionless; D_p = average particle diameter of a sphere of the same volume as the particle (ft.); g_c = dimensional constant (32.17 lb. ft./lb. force sec.^{2}); p = fluid density (lb./cu. ft.).

The modified Reynolds number $N_{Re'}$ is defined as:

(Fig. 5-64)

$$N_{Re'} = \frac{D_p G}{m}$$

where m = fluid viscosity (lb./ft. sec.).

For non-spherical particles:

(Fig. 5-65)

$$D_p = \frac{6(1-E)}{\phi_s S}$$

where S = specific surface, or area of particle surface per unit volume of bed = $S_o(1\text{-}e)$, (sq. ft./cu. ft.); S_o = area of particle surface per unit volume of solids, (sq. ft./cu. ft.).

Values of the shape factor O_s for a number of materials are tabulated:

Material	Nature of grain	0
Mica flakes		.28
Sand—Average for various types		.75
Flint sand	Jagged flakes	.43
Ottawa sand	nearly spherical	.95
Sand	rounded	.83
"	angular	.73

Explanation: In equation (5-63) you will note that we can rewrite this equation by transposing factors thus:

$$G^2 = \frac{pD_p g CO_s^{3-n} E^3}{2f_m L(1-E)^{3-n}}$$

and further, all factors other than $Os^{3\ n}$ can be equated to K, making our equation look like this:

$$G = (KO_s 3\text{-}n)^{1/2}$$

so we see that rate of flow (G) is proportional to the square root of the shape factor, Os. In other words, the rate of flow is not only proportional (inversely) to the size of the particles, but their shape, a factor that is not ascertained by screen analysis. □

ABC's of budgeting

Organizational Systems Inc., 700 Massachusetts Street, Lawrence, Kansas, is a consulting firm. Their staff has prepared a series of three articles to thoroughly cover all aspects of budgeting. The second article in the series will cover budgeting from the point of view of the person who prepares the budget, the person who presents it, the person who approves it, and the person who implements it. It will also cover the outcomes of the budgeting process. The third article will cover the budget as a tool for control, a form of progress report, a standard for performance evaluation, a motivational tool, and a source of information for future planning.

The word budget is as all pervading as the economic activities in our life. Although money has not kept motivated players from their game, there are people who must consider their budgets before deciding on a game of golf for the weekend. At the same time governments have been unmade on the issue of budgets. While the word budget remains the same, the meaning of it differs in the two contexts. Every business uses a budget in some form or the other. Sometimes we find a huge amount of paper work being performed in the name of a budget, and at other times we find the manager of a small business keeping a budget in his head. The purpose of the budget may be as varied as the context and form of it.

This Is Your Budget!

The normal view of the budget is that of a piece of the pie. The total pie that is the total income must be apportioned to the people, projects and products for spending purposes. This apportionment may be done according to the needs of each one, but more often than not other factors, such as past apportionment and changing goals of the organization, affect the way the pie is divided. The portion of the pie is casually handed down by the high level staff and you are told, "This is your budget!" Golf course superintendents or salespersons for equipment all alike are sure to have heard it sometime or other.

This view of the budget reflects a tendency on the part of the management to treat a budget as a resource allocation decision only. It also reflects in incomplete understanding of (what budgets mean in terms of) the relationship between the process of budgeting and the utility of budgets as a management tool. The way an irrigation system is designed and installed affects how much it can accomplish with the greens; similarly the way a budget is developed will determine the extent of its usefulness.

This Is My Budget!

On the other side of the coin we come across the middle level managerial personnel who prepare and present their budgets to the budget committees or budget directors, and say, "This is my budget". It can mean that the budget represents the amount of money required by the person, project or department. It can also mean that the activities for which money is demanded constitute the plans for the budget period.

When a budget is put forth for approval, the normal course of negotiation flows around the question of what activities are more desirable in the context of overall plans for the organization. Priorities of task get crystallized during the process of budget approvals. It is only of secondary importance that the accounting concepts of budgeting are equally necessary to handle the practical aspects of actually preparing a budget.

Types of Budgets

A budget represents in financial terms a plan of activities over a specified period of time. A fixed budget is one which, once approved, will not be changed over the specified (or budget) period. A variable budget, however, gets periodically updated during the specified budget period.

There are advantages to having a fixed budget. It keeps a record of the plan prepared at the outset of the budget period. This helps in comparing and analyzing any changes in the plan that take place during the budget period. Simultaneously it discourages the person in charge of implementation from making arbitrary changes in the operation. Last but not the least important is the fact that the person handling the budget is unable to manipulate the changes to his or her own advantage.

The disadvantages of a fixed budget provide the rationale for a variable budget. First and foremost is that a fixed budget is inflexible. Unforeseen events could make the implementation of a fixed budget quite difficult, and sometimes ridiculous. It is not uncommon for the budget committee to ask questions about why a certain amount approved for a particular operation was not fully used up. If the person in charge of budget has transferred a certain amount of money to some other operation, then the question arises whether the person had the authority to make such transfers. The fixed budget, therefore, could become a double-edged sword.

Variable budgets overcome this disadvantage peculiar to fixed budgets by allowing the person-in-charge the autonomy to either make such transfers or have some reserves for emergency purposes. Besides, the initial plan can always be maintained in the records so that all the advantages of the fixed budget could still be availed.

A budget period is normally twelve months. This practice, however, varies from place to place. Some organizations may have a yearly budget and simultaneously prepare budgets for each quarter. This is a useful way to look out for overspending in any particular quarter. It is also helpful in keeping track of seasonal fluctuations in the business. Quite naturally a budget for the second quarter (April, May, June, July) will reflect not just the income and expenditure but also the kind of activities that are necessary to maintain the facilities in top shape.

Each of the fixed or variable budgets could be prepared as:

1. An Operating Budget that shows revenues and expenses involved in the planned operations for the budget period.
2. A Capital Expenditure Budget that shows planned acquisition and disposal of capital equipment.
3. A Project Budget that shows financial transactions for a specific project which may cut across budget period.

Smaller organizations, however, may not go to the trouble of preparing different kinds of budgets and may tend to lump all activities under one comprehensive budget.

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