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When Writing to Advertisers Please Mention WEEDS TREES AND TURF
How to Calculate Parts per million (ppm) in Pounds or Gallons for Chemical Aquatic Weed Control

Accurate calculation of aquatic herbicide rates in pounds or gallons from “parts per million” (ppm) recommendations to treat a given pool (lake or pond) will lead to more economical operation and prevent excessive treatment.

Determination of pool surface area is critical. This can be done by estimating the number of acres or parts of acres on a pool surface. Pool depth and dosage in ppm are also needed to determine weight or volume rates.

Weight (pounds) of chemical necessary for treatment of the total quantity of water in a pool is calculated with the following formula.

\[ \text{Pounds required} = \frac{\text{pool depth}}{2} \times \text{ppm desired} \times 2.71 \times \text{surface acres} \]

For example, if 7 ppm is recommended for aquatic weed control, and the pool has a maximum depth of 12 feet with 5 surface acres, then 569.1 pounds of toxicant are prescribed. Using the formula, the pounds of toxicant needed were calculated as follows.

Pool depth (12 feet) is divided by 2; this gives an average pool depth (6 feet). In large pools, average depth is best determined by calculating the average of 15 depth measurements. Multiply average depth (6 feet) by ppm desired (7 ppm) to get 42. Multiply the number of surface acres (5) by the constant 2.71; this gives a 13.55 value. Now multiply 13.55 by 42, and the answer is 569.1 pounds of toxicant required to treat a 5-acre pool, 12 feet deep, at the 7-ppm dose.

The volume (gallons) of chemical needed for treatment of the total quantity of water in a pool is calculated by using .325 as the constant instead of 2.71 used to determine weight.

\[ \text{Gallons needed} = \frac{\text{pool depth}}{2} \times \text{ppm desired} \times .325 \times \text{number of surface acres} \]

If 7 ppm is recommended for aquatic weed control, and a pool with 5 surface acres has a maximum depth of 12 feet, 68.25 gallons of chemical are needed. Gallons of chemical were calculated by first dividing the pool depth (12 feet) by 2; this gives the average pool depth (6 feet). Multiply the average depth (6 feet) by ppm desired (7 ppm) to get 42. Multiply the number of surface acres (5) by the constant .325; this gives a value of 1.625. Now multiply 1.625 by 42, and the answer is 68.25 gallons of poison to treat a 5-acre pool, 12 feet deep, at a 7-ppm dosage rate.

The “Constants,” 2.71 (for weight) and .325 (for volume), are derived from calculations based on treatment of a one-acre pool, one foot deep.

Gives Gall Controls

“How to Control Galls on Shade Trees and Shrubs,” is the title of an information sheet now available from Purdue University, West Lafayette, Ind. Illustrated with drawings of gall-infected plants and leaves, the sheet shows four gall types and gives control suggestions. For a copy, request publication E-56, April 1966, Agricultural Publications, AES Building, Purdue University, West Lafayette, Ind. 47907.
CSU 3-Season Turf Study
Gives Bluegrasses the Nod

Bluegrasses are generally better adapted to lawn needs in Colorado than bentgrass, fescue, zoysia, buffalograss or bermudagrass, John W. May, junior plant physiologist, and Dr. J. L. Fults, botanist at Colorado State University report.

Scientists at CSU have compared the grasses in tests at the school’s Agricultural Experiment Station during the last three seasons.

One of the most promising of the new varieties tested is Windsor bluegrass. It combines many features of Merion with faster germination and rate of development. The turf is finer textured and lighter in color than Merion. It also shows a tolerance for drought conditions. Tests indicated that Windsor is more resistant to rust than Merion, and resists disease as well as any of the high-quality bluegrasses.

Though Merion bluegrass establishment is slow initially, it consistently develops into a turf of high quality, the research team notes.

Merion was found to respond quickly to fertilizers and to resist leaf-spot diseases. It also tolerates close clippings better than most bluegrasses, and provides relatively uniform turf quality for many years.

Another grass variety found in the tests to be slow in establishing cover is Newport bluegrass. But it grows and maintains its color late in the fall, which gives it an advantage for use on football fields and parks subjected to heavy fall traffic. This becomes a disadvantage in years when winter comes early, because the foliage is subject to winter kill.

In the 3-season study, Park bluegrass was found to respond quickly to fertilizer and to have vigorous seedling qualities.

Penn. Plans Turf Survey

Plans for a comprehensive survey of the entire turfgrass industry in Pennsylvania were discussed at the recent annual meeting of the Pennsylvania Turfgrass Council in Harrisburg, Pa.

Director of Crop Reporting Service, Pennsylvania Dept. of Agriculture, Dewey O. Boster, explained the comprehensive study will use the same methods CRS uses to obtain data for other agricultural enterprises. Between 15 to 20 enumerators will collect data on a full-time basis, and results will be reported in a Crop and Livestock Annual Summary, published yearly by the State’s Dept. of Agriculture.

A formal committee, appointed by Dr. L. H. Bull, Penn. Secretary of Agriculture, has developed questionnaires already for use by the enumerators. The survey should be of particular interest to industries engaged in production and marketing of turfgrass equipment, PTC executive director H. B. Musser noted.

Automatic chain lubrication is one of the improvements added to new Wright chain saw model C-40A. The device is activated from a worm gear with cam, directly from the saw crankshaft. A manual system may be used to override the unit if desired. The saw weighs 16 1/2 lbs., and will take a 14-, 17-, and 21-inch hard nose bar and a 25-inch roller nose bar. For more details contact Wright Saw Div., Thomas Industries, Inc., 207 E. Broadway, Louisville, Ky.

Meeting Dates

West Virginia Nurseryman’s Assn. Meeting, White Sulphur Springs, Aug. 3-4.
Joint Convention and Trade Show, by Southern Nurserymen’s Assn., Louisiana, Alabama, Mississippi, and Arkansas Nurserymen’s Assns., Jung Hotel, New Orleans, Aug. 7-10.
Indiana Association of Nurserymen, Inc., Summer Meeting, Purdue University, West Lafayette, Aug. 8-11.
Midwest Turf Field Days, Purdue University, West Lafayette, Ind., Aug. 15-16.
International Horticultural Congress, University of Maryland, College Park, Aug. 15-20.
Penn State Turfgrass Field Day, Pennsylvania State University, University Park, Aug. 17-18.
Wisconsin Park and Recreation Assn. Summer Meeting, Fish Creek, Aug. 18-19.
Texas Assn. of Nurserymen, Annual Convention, Nursery and Garden Supply Show, Dallas Memorial Auditorium, Dallas, Aug. 21-22.
International Shade Tree Conference, 42nd Annual Convention, Sheraton-Cleveland Hotel, Cleveland, Ohio, Aug. 28-Sept. 2.
Northern Michigan Turfgrass Conference, Traverse City Country Club, Traverse City, Sept. 13.
Lausche Addresses ISTC
Cleveland Meet Next Month

Senator Frank J. Lausche, who urged Ohioans to "Plant Ohio" while he was governor, will keynote the 42nd International Shade Tree Conference Convention & Trade Show. More than 1,000 arborists, foresters, and nurserymen will gather at the Cleveland-Sheraton Hotel, Aug. 28 to Sept. 2, for what is predicted to be the ISTC's biggest convention.

The convention theme, "Beautify With Trees," mirrors the entire program, which includes exhibits and demonstrations of latest tree equipment, educational exhibits, and horticultural tours. Among sites to be visited are the outstanding Fine Arts Garden and Cleveland's new, two-million-dollar mall, featuring a fountained plaza and formal gardens.

City tree programs and problems will underline the full slate of talks planned, Dr. Lewis C. Chadwick, Executive Director of ISTC, told WTT. Dr. Chadwick emphasizes that city programs of beautification and planning, along with preservation of trees in the face of adverse city conditions, is of major interest to the tree industry. This will be further brought out during the convention by panel discussions and seminars that will provide up-to-date assistance on the care and treatment of trees—particularly, the urban arbor.

General chairman of the Cleveland meet is John Michalko, Shade Tree Commissioner of Cleveland, the "Forest City."

Plaza and gardens of Cleveland's beautiful, two-million dollar mall to be visited by ISTC.

William P. Lanphear, III, V. P. and Treas. of the Forest City Tree Protection Co., in Cleveland, is co-chairman. Complete details of the convention will be announced in WTT next month. Those desiring more information and advance registration should contact Dr. L. C. Chadwick, Executive Director, International Shade Tree Conference, 1827 Neil Ave., Columbus, Ohio.

SBA Offers Ad Aid Book

Basics of advertising, how to prepare ad budgets, what the most effective media are, and where to place advertising emphasis, are all discussed in "Effective Advertising," a book offered by the Small Business Administration.


New Western ISTC Officers
Named at Fresno Gathering

Jack R. Rogers, superintendent of street trees, Los Angeles, was installed president of the Western Chapter, International Shade Tree Conference at its 33rd annual convention, in Fresno, May 15-18. Jess B. Gunnells, California Tree Service Inc., Pasadena, was named vice president. Secretary-treasurer is C. Elmer Lee, Southern California Edison Co., Los Angeles. Brian Fewer, supervisor of street tree planting, San Francisco, is editor.

Convention talks emphasized beautification. Keynote speaker Clarke W. Davis, executive secretary of the National Arborist Association, Washington, D. C., related the "Make America Beautiful" program to community action. Beauty and utilities were brought together in a talk on "Beautylity" by Richard Hayden, senior vice president, Pacific Gas and Electric Co., San Francisco. He pointed to the opportunity for utility companies to take part in community beautification. Other speakers at the conference included O. J. Anderson, Houston, Texas, president of ISTC, and ISTC Executive Director Dr. L. C. Chadwick, Columbus, Ohio.

Northwest Spraymen Plan
Sept. 23-24 Spray-O-Rama


Outstanding speakers and panel groups to help spraymen solve their problems will be featured on this year's program. Highlighting the Saturday evening banquet will be a presentation by Robert E. Averill, Public Relations Director, Merritt Davis Schools, Inc., of Salem, Ore. For further advance information and registration, contact A. J. Overton, Miller Products Co., 7737 N. E. Killingsworth, Portland, Ore. 97218.

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WEEDS TREES AND TURF, July, 1966
Northern Michigan Turf
Day To Be Held Sept. 13

Evaluation of bluegrass, fescue, and bentgrass varieties, based on area research, will be discussed at the Northern Michigan Turfgrass Field Day, Sept. 13, at the Traverse City Country Club, Traverse City, Michigan.

Turfgrass researcher James Beard, and soil scientist Paul Rieke, both of Michigan State University, are directors of the program aimed at professional turfmen. Other research-based topics will include weed control, snow mold control, and nitrogen carrier comparisons.

Hercules Changes Name

Hercules Incorporated is the new name for Hercules Powder Co. This is the first time the firm has changed its corporate identity since it was founded January 1, 1913.

Dow’s Norbak Shapes Sprays

Size of herbicide spray droplets is a key to spray drift control, The Dow Chemical Co. reports.

Specifically developed by Dow to control spray drift, Norbak particulating agent is a water swellable polymer. It is said to form droplets into larger and more uniform particles so the spray is less subject to air currents.

A mixture of Dow’s Tordon, water, and Norbak has a granulated appearance in the spray tank due to individual swollen particles. But it can be poured, pumped, and sprayed just like water, the company claims.
How to Adjust Granular Spreaders with V-shaped Hoppers

(from page 13)

bolt 3 inches long into the wheel so it can be used later to turn the wheel. Measure the circumference (distance around) of the wheel in feet. Divide this figure into the lineal feet (F) the spreader must travel to cover 100 sq. ft. Lineal feet, in this case, are determined by dividing 100 by the diameter of the spreader's output pattern (D), or 100/D = F. By dividing the circumference of the drive wheel by the linear feet, you determine the number of wheel revolutions required for the spreader to cover 100 sq. ft. Now fill the spreader half full with granules and estimate its rate setting. Place the spreader over a large sheet of paper or cloth; block up the drive wheel side of the spreader so that it is about 1/2 inch off the ground. Next, open the spreader, and by using the bolt as a crank, rotate the wheel the same number of turns required to cover 100 sq. ft. Crank the wheel at the approximate speed at which it would move under normal applications. Weigh the material on the paper. If the amount collected is more or less than the recommended rate, per 100 sq. ft., reset the spreader and repeat the test until the desired rate is applied.

Some spreaders are specifically designed and manufactured to apply granulated materials quite accurately. Other spreaders are designed primarily for fertilizer applications where accuracy is not as important. Generally speaking, those multi-purpose spreaders which are made to apply herbicides, pesticides, and also fertilizers are of necessity manufactured at closer tolerances and for greater accuracy than are typical fertilizer spreaders.

Banvel D, 2,4-D Use With Fertilizer Is Described

Banvel D herbicide and 2,4-D have both been approved for use in combination with dry fertilizer to control broadleaf weeds in established lawns (not pastures) and golf courses, according to Velsicol Chemical Corp.

A formulation was approved for use in spring or fall at the rate of 5 lbs. per 1000 sq. ft. (½ lb. of Banvel D and 1-1½ lbs. 2,4-D per acre.)

One application per year, if needed, for control of dandelion, plantain, chickweed, knotweed, clover, sheep sorrel, stitchwort, buckhorn, dog fennel, mustard, and other broadleaf weeds is recommended by the company.

Applications to moist grass are said to give best results. Turf should be mowed or watered for 24 hours after treatment.

For additional information write Velsicol Chemical Corp., 341 East Ohio St., Chicago, Ill.
When answering ads where box number only is given, please address as follows: Box number, c/o Weeds Trees and Turf, 1900 Euclid Avenue, Cleveland, Ohio 44115.

Rates: "Position Wanted" 5c per word, minimum $2.00. All other classifications, 10c per word, minimum $2.00. All classified ads must be received by Publisher the 10th of the month preceding publication date and be accompanied by cash or money order covering full payment.

**CLASSIFIEDS**

**POSITION WANTED**

**HERBICIDE MARKETING Specialist,** experienced in sales through western distributors, sales management, advertising, sales promotion, and marketing research, desires creative sales opportunity. Western location preferred. Résumé upon request. Box 19, Weeds Trees and Turf magazine.

**HELP WANTED**

**FORESTER** for 12-man forestry division, Village of Oak Park, Illinois, population 61,000. Salary dependent upon experience; range $512-642/month. College degree in forestry or allied and same experience. Must want to learn and apply municipal forestry procedures, including tree planting and care, and public grounds care. Résumé to Finance Department-Personnel, 113 N. Euclid Ave., Oak Park, Ill. 60301.

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**DED Fact Kit Available**

A free information kit, "Facts About Dutch Elm Disease . . . A Community Problem," is now available from John Bean Div., FMC.

Coverage of chemicals and sprayers used by municipalities to arrest spread of the Elm Bark Beetle is in the kit. It also contains reprints of articles about the disease in various communities.

For the free information write Dutch Elm Disease Kit, John Bean Agricultural, Box 9490, Lansing, Mich. 48909.

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**SPREADER-ACTIVATOR FOR SYSTEMIC HERBICIDE SPRAYS**

**REDUCES FOAMING**

**TRIONIC** is a new 3-in-one non-foaming adjuvant—anionic—nonionic—cationic—formulated to minimize foaming common to most herbicidal sprays. Completely water dispersible. Substantially improves wetting and penetration of the spray on the plant. Enhances penetration of waxy cuticles. Try **TRIONIC**—the new non-foaming spreader-activator for systemic herbicide sprays. For further information, see your supplier or write to—

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**ROBERT B. PETERS CO., INC.**

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Suppliers Personnel Changes

Stauffer Chemical Co. announces that Keith B. Campbell has been named division agronomist for its Fertilizer Division. A graduate of Brigham Young University with a B.S. in agronomy, Campbell is currently chairman of the Northwest Plant Food Association Committees on Utah Soil Improvement, and on Utah State University Scholarships. His headquarters will be in Salt Lake City.

Allied Chemical Corp., Nitrogen Division, has appointed Dr. Harvey J. Stangel manager of its foreign market development. A native of Kewaunee, Wis., Dr. Stangel received his B.S., M.S., and Ph.D. degrees from the University of Wisconsin where his specialty was agronomy and plant physiology. He started with Allied’s Nitrogen Division in 1954 and in 1958 moved to the company’s New York headquarters as chief agronomist.

The Ansul Co. has appointed Chesley L. Milam as agricultural chemicals salesman for its chemical products division. Milam will work from his office in Sandy Springs, S. C. He was graduated from Clemson University with a degree in animal husbandry.

Chemagro Corp. has chosen Leonard P. Quattrochi to fill a newly created position of product manager, pest control and public health chemicals. He will be responsible for development of a line of pest control and public health insecticides. Quattrochi served as a technical sales representative, biological technician, and field researcher since he joined the company in 1955. He was graduated from the University of Pittsburgh in 1952, with a B.S. degree.

Literature you’ll want

Here are the latest government, university, and industrial publications of interest to contract applicators. Some can be obtained free of charge, while others are nominally priced. When ordering, include title and catalog number, if any. Sources follow booklet titles.


Trimmings

U-A-Nswers... clever name for the Utah Association of Nurserymen’s newsletter... in a recent issue reminds its members that none must do any spraying unless each holds a contractor license, in addition to any business or nursery license they have. Seems there has been an increasing number of “quick-buck” artists in the state doing maintenance work that is ruining the reputation of qualified contractors. These spraymen are attempting to police themselves to lessen the chance of any more limiting legislation coming their way!

This is real dedication. University of Maryland agronomist, Dr. Elwyn Deal, tells us about one of his students who’s just completed a research project which will benefit users of Tifgreen bermudagrass. He’s Charles “Chuck” Laughlin who began playing golf with saved-off clubs at the tender age of 12. At 18 he was watering turf on golf courses and at 16 the blond, crew-cut turfker earned money on a grounds crew in his home town of Iowa. Now, at 26, he’s earned a master’s degree in turf management for his research into the amounts and kinds of nitrogen fertilizer added to Tifgreen bermudagrass to assure top-quality color, vigor, density, and texture. We could use more youngsters in this business with such dedication.

PR for sodder. A recent issue of the Cleveland Plain Dealer devoted a full-page pictorial feature to Warren’s Turf Nursery because it has recently established farm branches in the Cleveland area which will benefit more than 1,000 acres in Uniontown, Celeryville, and Mansfield. The report details many of the intracacies involved with the growing of quality turf, including the vacuum coiling of sod to keep it from perishing between harvesting and installation. This is not only a nice plug for brothers Ben and Bob Warren but for the entire commercial sod industry that is growing by such leaps and bounds across the country to meet the increasing demands for “instant grass.”

Congratulations to Don Griffiths, and the Agricultural and Technical College in Farmingdale, N.Y. Don, who’s associate professor in the Dept. of Ornamental Horticulture there, has helped set up a new two-year course in turf management which will prepare graduates with a well-rounded education. Recognizing the fact that turf management specialists are concerned with problems other than the technicalities of raising fine turf, the planning faculty and advisors have included basic courses in design, horticulture, and arboriculture, as well as basic scientific courses geared to provide a sound formal education. For more information, write the Director of Admissions, State University, Agricultural and Technical College, Farmingdale, N.Y. 11735.
Dacthal effectively kills weeds and undesirable grasses in the ground before they sprout. Won't damage ornamentals and shrubs. Best weed control yet for golf-course and fairways, parks, rights-of-way, etc. Keep your turf weed-free with Dacthal applied professionally for best results. Diamond Chemicals, Diamond Alkali Company, 300 Union Commerce Building, Cleveland, Ohio 44115.