DOGGETT

The Tree Fertilizer Company

Product Catalog

The Doggett Corporation www.doggettcorp.com (800) 448-1862 30 Cherry Street, Lebanon, NJ 08833

DOGGETT

The Tree Fertilizer Company

OUR FIRST INTRODUCTION TO THE TREE CARE INDUSTRY CAME AT A TIME WHEN THE INDUSTRY WAS VERY YOUNG.

We recognized early on that supplying trees with the essential elements was necessary to promote good tree health, and that tree fertilization was an integral part of the professional tree care industry. Through the years between 1940 and the present, we have manufactured the leading brands of fertilizers and kept ourselves current on tree nutrition and fertilization research. Not only do we strive for the optimum in formulating the finest product for the tree, but also to make the most suitable product for the tree care professional.

Our most recent line of professional tree fertilizers has set the standard for the industry. The leading tree care companies and horticultural institutions in the country turn to DOGGETT when they are looking for the best in tree fertilizers.

To those of you who know us and use our products, we thank you. To those of you who are just learning about us for the first time, we welcome you and know that you will find that these tree fertilizers are the finest made.

DOGGETT: A SOURCE OF INFORMATION

WE MAY BE CONTACTED BY WRITING TO
DOGGETT CORPORATION, 30 CHERRY STREET, LEBANON, NJ 08833
OR BY CALLING

1-800-448-1862

FAX: (908) 236-7716 | WWW.DOGGETTCORP.COM

INGREDIENTS: DOGGETT PROFESSIONAL TREE FERTILIZERS are manufactured from the finest materials. Chloride and Sulfate free. Low salt formulations meeting ANSI standards.

TRACER DYE AND PENETRANTS: DOGGETT PROFESSIONAL TREE FERTILIZERS contain a tracer dye for convenience and visibility of application. Special penetrants are incorporated to improve distribution and absorption by foliage and roots.

Doggett Corporation has manufactured horticultural products since 1940. We pioneered the use of water soluble fertilizers and foliar feeding prior to WWII and have manufactured the leading consumer brands of water soluble fertilizers for other suppliers since that time. Our fertilizers are sold with a guarantee of satisfaction based on years of experience.

The information contained in this catalog is meant to serve as a guide in fertilization and general nutrition of trees and shrubs. The Doggett Corporation has firmly established itself as the leading producer of nutrition products for trees.

We design and sell tree and shrub fertilizers for soil injection and foliar applications, with most of our formulations containing a controlled release nitrogen source. This catalog will go into detail concerning these products, and other matters we concern ourselves with in the tree industry.

TABLE OF CONTENTS

4 32-7-7 DOGGETT'S PROFESSIONAL SLOW RELEASE TREE FERTILIZER
5 12-24-24 DOGGETT'S PROFESSIONAL FALL TREE FERTILIZER
6 30-7-10 DOGGETT'S PROFESSIONAL EVERGREEN SPECIAL
7 15-15-20 DROUGHT SPECIAL
8 20-7-10 BASIC BALANCE
9 10-0-5 DOGGETT'S ORGANIC NATURAL RESOURCE PLUS
10 TREE ROOTER 10-22-22
11 XL 30-10-10 SPRAY-FOL™
12 XL 20-20-20
13 XL 20-14-10 TREE FERTILIZER
13 XL 30-5-10 SOLUBLE TREE FERTILIZER
14 DOGGETT'S PLANTING & TRANSPLANT TABLETS
14 DOGGETT'S PALM & SOUTHERN ORNAMENTAL LANDSCAPE SPECIAL

LIQUID

15 20-0-6 ARBOR LIQUID FERTILIZER
15 6-12-12 FALL ARBOR LIQUID FERTILIZER

GRANULAR

16 8-0-6 DRY GRANULAR ORGANIC FERTILIZER
16 DOGGETT'S SLOW-RELEASE PROFESSIONAL GRANULAR 20-5-10

MINORS & SOIL AMENDMENTS

18 FERRO-LATE XL IRON CHELATE
18 NUTRI-SUL 90
19 DOGGETT'S NATURAL RESOURCE
20 BIOCHAR SUSTAINABLE BENEFITS
21 MINORS, SECONDARY ELEMENTS & SOIL CONDITIONERS
22 ADDITIONAL INFORMATION
23 TREE FERTILIZATION COST ESTIMATING FORM

32-7-7 DOGGETT'S PROFESSIONAL SLOW RELEASE TREE FERTILIZER

GUARANTEED ANALYSIS

Total Nitrogen (N)* 32.00%

14.59% Urea Nitrogen
4.91% Slowly Available Water Soluble Nitrogen
*12.5% Water Insoluble Nitrogen**

Available Phosphate (P_2O_5)..... 7.00%

Soluble Potash (K_2O) ... 7.00%

Secondary Elements

Copper (Cu)..... 0.05%

Iron (Fe) 0.10%

.10% Cheleated Iron (Fe)

Manganese (Mn) 0.05%

.05% Water Soluble Manganese (Mn)

Zinc (Zn) 0.05%

NUTRIENTS DERIVED FROM: Ureaform, Urea, Monopotassium Phosphate, Sulfate of Potash, Iron EDTA, Copper Sulfate, Manganese Sulfate, Zinc Sulfate

NON PLANT FOOD INGREDIENTS:
1% Humates
99% Total Other Ingredients

***THIS PRODUCT CONTAINS 12.5% Water Insoluble Nitrogen from Ureaform.**

Information regarding the contents and levels of metals in this product is available on the internet at http://aapfco.org/metals.htm

NET WT. 30 LB.

32-7-7 TREE FERTILIZER is formulated for the professional arborist. Because of its high Ureaform content it does not dissolve completely, but with strong agitation remains in suspension. THE DOGGETT CORPORATION has suspending agents for rigs with poor agitation. Over half of the Nitrogen in DOGGETT TREE FERTILIZER is derived from Ureaform. This unique Ureaform fertilizer releases its available Nitrogen over the entire growing season. Any not released during the first season will carry over to the following year. Bacteria converts the more soluble fraction of the Nitrogen so that 1/3 is released in the first six weeks, the next 1/3 in six weeks to 3 months and the final 1/3 in 12 months.

LOW SALT INDEX

The lower the salt index per unit of plant nutrient in each ingredient of the fertilizer, the less risk of crop injury in periods of drought or with localized placement of concentrated fertilizer. DOGGETT TREE FERTILIZER has a low salt index.

DOGGETT TREE FERTILIZER is a combination of Ureaform and other selected raw materials to produce the highest analysis, best performing, slow release, low salt, injectable tree fertilizer available.

AUTUMN FEEDING

When we do not wish to promote soft growth late in the season, but wish to feed the tree for a good wintering and a strong start in the spring, we suggest that you use our DOGGETT TREE FERTILIZER FALL FORMULATION 12-24-24, with available phosphate and potassium.

Dilution Table

32-7-7 FERTILIZER	*Water*
15 lbs.	**100 gallons**
30 lbs.	**200 gallons**
75 lbs.	**500 gallons**

APPLICATION

90% of feeder roots are in the top 12 inches of soil with the majority in the first 6 inches. They start well out from the trunk and extend well beyond the dripline in most cases. This is the area to be injected with DOGGETT TREE FERTILIZER. Soil injection should be 4 to 6 inches deep using an injector probe at 150 to 200 PSI.

Injection should begin out from the trunk and be spaced 2 ½ ft. apart, injecting on a grid extending beyond the dripline. Apply 150 gallons to each 2,000 sq. ft. Following the grid method outlined, you should inject approximately 1/ 2 gallon of fertilizer solution at each point. Based on the 2 ½ ft. spacing, this will apply 150 gallons of solution over 2000 feet which contains 7.2 pounds of N or 3.6 pounds N per 1000 square feet.

TO CALIBRATE your particular rig and its operator, we suggest you find out how long it takes to inject 1/2 gallon of solution into a bucket. This will probably take 2 to 4 seconds. Count off the seconds and use this same count and cadence while injecting the probe at each point in the soil.

TRUNK RATE OF APPLICATION

Use dilution rate as shown in table (15 lbs. in 100 gallons of water). Apply the solution at the rate of 5 gallons per inch of trunk diameter

CROWN SPREAD TECHNIQUE

(concentric circles)

Inject 150 gallons over 2,000 square feet. Space injection points at 2 ½ sq. ft. intervals, starting well out from the trunk and extending well beyond the dripline in unencumbered soils.

FIVE GALLONS OF FERTILIZER SOLUTION PER INCH OF TRUNK DIAMETER
Example: Tree Trunk 12" times 5gallons = 60 gallons of solution.

12-24-24 DOGGETT'S PROFESSIONAL FALL TREE FERTILIZER

GUARANTEED ANALYSIS

Total Nitrogen (N)* 12.0%

5.04% Urea Nitrogen
1.96% Slowly Available Water Soluble Nitrogen
*5.0% Water Insoluble Nitrogen**

Available Phosphate (P_2O_5)..... 24.0%

Soluble Potash (K_2O) ... 24.0%

Secondary Elements

Copper (Cu)..... 0.05%

Iron (Fe) 0.10%

10% Cheleated Iron (Fe)

Manganese (Mn) 0.05%

.05% Water Soluble Manganese (Mn)

Zinc (Zn) 0.05%

NUTRIENTS DERIVED FROM: Ureaform, Urea, Monopotassium Phosphate, Sulfate of Potash, Iron Chelate EDTA, Copper Sulfate, Manganese Sulfate, Zinc Sulfate.

NON PLANT FOOD INGREDIENTS: 1% Humates, 99% Total Other Ingredients

***THIS PRODUCT CONTAINS 5% Water Insoluble Nitrogen from Ureaform.**

Information regarding the contents and levels of metals in this product is available on the internet at http://aapfco.org/metals.htm

NET WT. 30 LB.

12-24-24 FALL TREE FERTILIZER

is formulated for the professional arborist. Because of its high Ureaform content it does not dissolve completely, but with strong agitation remains in suspension. THE DOGGETT CORPORATION has suspending agents for rigs with poor agitation. Over half of the Nitrogen is derived from Ureaform. This unique Ureaform fertilizer releases its available Nitrogen over the entire growing season. Any not released during the first season will carry over to the following year. Ureaform is non-leaching. Bacteria converts the more soluble fraction of the Nitrogen so that 1/3 is released in the first three to five weeks, the balance over 6 to 12 months.

LATE SUMMER AND FALL FEEDING

Early spring and summer are the ideal times to fertilize trees as they have the entire growing season to develop. However, this is also the busy s praying time so that it is not always possible to feed then. Late summer and fall are an excellent time to feed. We know that root growth is most vigorous into late fall and early winter and fertilizer applied during this period is very beneficial to the tree. Any fertilizer not used at this time will be available when growth begins in the spring. Since we do not wish to stimulate soft growth late in the season, but wish to feed the tree for a good wintering and a strong start in the spring, low nitrogen formulas are recommended. FALL TREE FERTILIZER 12-24-24 is formulated specifically for late summer and fall use.

LOW SALT INDEX

The lower the salt index per unit of plant nutrient in each ingredient of the fertilizer, the less risk of crop injury in periods of drought or with localized placement of concentrated fertilizer. DOGGETT TREE FERTILIZER has a low salt index.

Dilution Table

FALL FERTILIZER	*Water*
15 lbs.	**100 gallons**
30 lbs.	**200 gallons**
75 lbs.	**500 gallons**

APPLICATION

90% of feeder roots are in the top 12 inches of soil with the majority in the first 6 inches. They start well out from the trunk and extend well beyond the dripline in most cases. This is the area to be injected with DOGGETT TREE FERTILIZER. Soil injection should be 4 to 6 inches deep using an injector probe at 150 to 200 PSI.

We recommend that you apply 2 to 3 pounds of actual Phosphate (P205) and Potash (K20) per 1,000 sq. ft. injected into this area.

Injection should begin out from the trunk and be spaced 2½ feet apart, injecting on a grid extending beyond the dripline. Apply 150 gallons to each 2,000 square feet. Following the grid method outlined, you should inject approximately 1/2 gallon of fertilizer solution at each point. Based on the 2 ½ ft. spacing, this will apply 150 gallons of solution over 2,000 square feet which provides 1.35 lbs. of Nitrogen, 2.7 lbs. of Phosphate and 2.7 lbs. of Potash per 1,000 square feet

.

TO CALIBRATE your particular rig and its operator, we suggest you find out how long it takes to inject 1/2 gallon of solution into a bucket. This will probably take 2 to 4 seconds. Count off the seconds and use this same count and cadence while injecting the probe at each point in the soil.

TRUNK RATE OF APPLICATION

Use dilution rate as shown in table (15 lbs. in 100 gallons of water). Apply the solution at the rate of 5 gallons per inch of trunk diameter

CROWN SPREAD TECHNIQUE

(concentric circles)

Inject 150 gallons over 2,000 square feet. Space injection points at 2 ½ sq. ft. intervals, starting well out from the trunk and extending well beyond the dripline in unencumbered soils.

FIVE GALLONS OF FERTILIZER SOLUTION PER INCH OF TRUNK DIAMETER

Example: Tree Trunk 12" times 5gallons = 60 gallons of solution.

30-7-10 DOGGETT'S PROFESSIONAL EVERGREEN SPECIAL

GUARANTEED ANALYSIS

Total Nitrogen (N)* 30.0%

19.55% Urea Nitrogen
2.95% Slowly Available Water Soluble Nitrogen
*7.5% Water Insoluble Nitrogen**

Available Phosphate (P_2O_5)..... 7.0%
Soluble Potash (K_2O) ... 10.0%
Sulfur (S)
Combined Sulfur..... 1.97%

Secondary Elements
Copper (Cu)..... 0.05%
Iron (Fe) 0.18%
.18% Cheleated Iron (Fe)
Manganese (Mn) 0.05%
.05% Water Soluble Manganese (Mn)
Zinc (Zn) 0.05%

NUTRIENTS DERIVED FROM:
Ureaform, Urea, Monopotassium Phosphate, Potassium Sulfate, Iron EDTA, Copper Sulfate, Manganese Sulfate, Zinc Sulfate

NON PLANT FOOD INGREDIENTS:
1.0% Humates
.25% Citric Acid
98.75% Total Other Ingredients

***THIS PRODUCT CONTAINS 7.5% Water Insoluble Nitrogen from Ureaform.**

Information regarding the contents and levels of metals in this product is available on the internet at http://aapfco.org/metals.htm

NET WT. 30 LB.

EVERGREEN SPECIAL 30-7-10 is formulated for the professional arborist. Because of its high Ureaform content it does not dissolve completely, but stays in suspension with good agitation. THE DOGGETT CORPORATION has suspending agents for rigs with poor agitation. Over 1/3 of the nitrogen in EVERGREEN 30-7-10 is derived from UREAFORM. This unique Ureaform fertilizer releases its nitrogen over the entire growing season. Bacteria converts the more soluble fraction in the first six weeks with 2/3 of the balance over six to twelve months.

EVERGREEN SPECIAL 30-7-10 is formulated for shrubs & trees that require high acid soil and extra quantities of iron. It can be injected around individual trees and shrubs or throughout a foundation bed planting.

LOW SALT INDEX

The lower the salt index per unit of plant nutrient in each ingredient of the fertilizer, the less the risk of plant injury in periods of drought or with localized placement of concentrated fertilizer. EVERGREEN SPECIAL has a salt index of 35.

Dilution Table

EVERGREEN SPECIAL	*Water*
15 lbs.	**100 gallons**
30 lbs.	**200 gallons**
75 lbs.	**500 gallons**

APPLICATION

90% of feeder roots are in the top 12 inches of soil with the majority in the first 6 inches. They start well out from the trunk and extend well beyond the dripline in most cases. This is the area to be injected with DOGGETT TREE FERTILIZER. Soil injection should be 4 to 6 inches deep using an injector probe at 150 to 200 PSI.

Injection should begin out from the trunk and be spaced 2 ½ ft. apart, injecting on a grid extending beyond the dripline. Apply 150 gallons to each 2,000 sq. ft. Following the grid method outlined, you should inject approximately 1/ 2 gallon of fertilizer solution at each point. Based on the 2 ½ ft. spacing, this will apply 150 gallons of solution over 2000 feet which provides 3.4 lbs. Nitrogen per 1,000 square feet.

TO CALIBRATE your particular rig and its operator, we suggest you find out how long it takes to inject 1/2 gallon of solution into a bucket. This will probably take 2 to 4 seconds. Count off the seconds and use this same count and cadence while injecting the probe at each point in the soil.

TRUNK RATE OF APPLICATION

Use dilution rate as shown in table (15 lbs. in 100 gallons of water). Apply the solution at the rate of 5 gallons per inch of trunk diameter

CROWN SPREAD TECHNIQUE

(concentric circles)

Inject 150 gallons over 2,000 square feet. Space injection points at 2 ½ sq. ft. intervals, starting well out from the trunk and extending well beyond the dripline in unencumbered soils.

FIVE GALLONS OF FERTILIZER SOLUTION PER INCH OF TRUNK DIAMETER
Example: Tree Trunk 12" times 5 gallons = 60 gallons of solution.

15-15-20
DROUGHT SPECIAL

FOR SOIL INJECTION INTO ROOT AREAS OF PLANTS, SHRUBS AND TREES WITH HUMIC ACID

A prescription-type formula specifically designed to regenerate root during and after drought conditions.
Extremely low in salt, all slow-release nitrogen, very high percentage of humate.
Guaranteed to enhance the recovery of drought-stricken trees and shrubs.

SLOW RELEASE - LOW SALT - CHLORIDE FREE - SUSPENSION TYPE FORMULA CONTAINS PRIMARY NUTRIENTS AND WETTING AGENTS FOR IMPROVED ABSORPTION AND SUSPENSION.

GUARANTEED ANALYSIS

Total Nitrogen (N) 15.0%
10% Water Insoluble Nitrogen
Available Phosphate (P_2O_5)..... 15.0%
Soluble Potash (K_2O) ... 20.0%

Secondary Plant Foods
Copper (Cu)..... 0.05%
Iron (Fe) 0.10%
Manganese (Mn) 0.05%
Sulfur (S) 3.61%
Zinc (Zn) 0.05%

NUTRIENTS DERIVED FROM: Ureaform, Potassium Sulfate, Monopotassium Phosphate, Chelate Complex

NET WT. 30 LB.

DROUGHT SPECIAL 15-15-20 is formulated for the professional arborist. Because of its high U.F. content it does not dissolve completely, but with strong agitation remains in suspension. Therefore, it should only be used with power spraying equipment with good agitation.

100% of the nitrogen in DROUGHT SPECIAL is derived from Ureaform. This unique Ureaform fertilizer releases its available nitrogen over the entire growing season. Any not released during the first season will carry over to the following year. Ureaform is non leaching. Bacteria converts the more soluble fraction of the nitrogen so that 1/3 is released in the first 3 to 5 weeks, the balance over 6 to 12 months.

Low Salt Index: The lower salt index per unit of plant nutrient in each ingredient of a fertilizer, the less risk of crop injury in periods of drought or with localized placement of concentrated fertilizer. DROUGHT SPECIAL has a low salt index of 15. The ANSI maximum standard is 50.

APPLICATION: SHRUBS, ROSES, SMALL BEDDING PLANTS

Injection holes should be 4 to 6 inches deep. Injection should begin 6 inches out from the main trunk or stem, spaced 1 ½ ft. apart, injection on a grid extending at least 6 inches beyond the drip line. Apply 150 gals. to each 2000 sq. ft.

Dilution Table

Lbs. of Drought Special	*per gals. of water*
15	100
30	200
75	500

To Calibrate: We suggest that you calibrate your tree feeding needle by finding out how long it takes to inject 16 oz. of solution into a bucket. This will probably take 1 to 2 seconds, count off the seconds and use this same count and cadence while injecting the probe at each point in the soil.

FOR LARGE SHRUBS AND TREES

Injection should begin 2 ft. out from the trunk and be spaced 2-1/2 feet apart, injecting on a grid extending beyond the drip line. Apply 150 gals. to each 2000 sq. ft. following the grid method outlined, you should inject approximately 1/2 gal. of fertilizer solution at each point. Based on the 2-1/2 ft. spacing, this will apply 150 gals. of solution. Calibrate as above for 1/2 gal. of solution in bucket.

Trunk Diameter Rate of Application: Use same dilution rates as shown in table. Apply the solution at the rate of 5 gals. per in. of trunk diameter. Using crown spread technique (concentric circles) inject the 150 gals. over 2,000 sq.ft.

Space injection points at 2-1/2 ft. intervals, starting 2 ft. from trunk and extending 2 ft. from trunk and extending 2 ft. beyond drip line.

Five gallons of fertilizer solution per inch of trunk diameter. Example: tree trunk 12" x 5 gals = 60 gals of solution.

20-7-10 BASIC BALANCE

FOR CORRECTING HIGH PH SOILS IN COMBINATION WITH FERTILIZER. A GOOD GENERAL PURPOSE FORMULATION FOR AREAS WITH ALKALINE SOILS.

Contains slow release N. Elemental sulfur to reduce pH and condition the soil. A high percentage of both FEDTA and FEDDHA iron to correct iron chlorosis. Recommended for soils with pH 7 and higher.

SLOW RELEASE - LOW SALT - CHLORIDE FREE - SUSPENSION TYPE FORMULA

GUARANTEED ANALYSIS

Total Nitrogen (N) 20.0%
10.0% W.I.N.
10.0% Urea N
Available Phosphate (P_2O_5)..... 7.0%
Soluble Potash (K_2O) ... 10.0%

Secondary Elements
Iron (Fe) 0.4%
.3% EDTA Chelated Iron (Fe)
.1% EDDHA Chelated Iron (Fe)
Magnesium (Mg) 3.0%
Sulfur (S) 12.0%

Nutrients derived from: Ureaform, Urea, Sulfate of Potash, Iron EDTA, Iron EDDHA, Magnesium Oxide.

NON PLANT FOOD INGREDIENTS: Humic acid 2% per total wt., Citric acid .5% per total wt.

NET WT. 30 LB.

DOGGETT'S BASIC BALANCE is formulated for the professional. Because of it's slow release N content, and the elemental sulfur, it does not dissolve completely, but with a strong agitation remains in suspension. Therefore it should be used with power spraying equipment with good agitation.

APPLICATION

Injection holes should be 4 to 6 inches deep starting out from the main trunk or stem, and then spaced approximately 3 ft. apart on a grid or in concentric circles. A site judgement should be made to determine what the entire root area (injection area) should be, however, a rule of thumb would be 150 gals over 2000 sq. ft.

Dilution Table

Lbs. of Basic Balance	*per gals. of water*
15	100
30	200
75	500

Following the grid method outlined you should inject 16 oz. of fertilizer solution at each point.

To Calibrate: We suggest that you discharge your tree feeding needle into a measured vessel noting the time it takes to discharge 16 ozs. This will probably take approx. 3 seconds. Use the same count and cadence when injecting into the soil.

Trunk Diameter Rate of Application: Use same dilution rates shown in table. Apply the dilute solution at the rate of 5 Gals. per inch trunk diameter (DBH). Using the grid or concentric circle technique, inject 75 gals. per 1000 sq. ft.

10-0-5 DOGGETT'S ORGANIC NATURAL RESOURCE PLUS

AN ORGANIC BASED FERTILIZER FOR TREES AND SHRUBS

An organic based fertilizer and soil supplement for trees, shrubs, and other landscape plantings. The very finest in necessary ingredients for optimal results. Humates, Microorganisms and Mycorrhizae. No phosphorous, extremely low salt index of (7). DOGGETT'S NATURAL RESOURCE PLUS is safe in every way.

GUARANTEED ANALYSIS

Total Nitrogen (N) 10.0%
Soluble Potash (K_2O) 5.0%

Secondary Elements
Iron (Edta)..... 0.7%
Manganese (Mn) 0.05%
Magnesium (Mg) 0.3%
Zinc (Zn) 0.05%

Nutrients Derived from: Blood Meal Potassium Sulfate, Iron Chelate, Magnesium Sulfate, Manganese Sulfate, Zinc Sulfate

NON PLANT FOOD INGREDIENTS: 2% Humates, 98% Total Other Ingredients

Soil Supplement Ingredients:
49 million cfu/lb. bacillus pumilus
49 million cfu/lb. bacillus amyloliquefaciens
49 million cfu/lb. bacillus megaterium
49 million cfu/lb. bacillus subtilis
49 million cfu/lb. bacillus licheniformis

Mychorrizae: ENDO;
Glomus intraradices, glomas mosseae, glomus aggregatum, glomus etunicatum 5,000 propagules per pound

ECTO:
Rhizopogon villosullus, rhizopogon luteolus, rhizopogon amylopogon, rhizopogon fulvigleba 5,500,000 propagules per pound

NET WT. 25 LB.

MIXING AND USE INSTRUCTIONS

Mix 25 lbs of Doggett's Natural Resource Plus into 100 Gallons of Water.

Good tank agitation is advised. Pre-hydration may make mixing easier. A wetting agent may improve the mix blend.

APPLICATION

Apply only as directed, or according to individual recommendations in your approved nutrient management plan.

Soil inject ½ gallon per injection site on a grid of 3 ft X 3 ft spacing, or in concentric circles with the same spacing.

Site conditions will vary, so a judgement should be made accordingly as to the location of the majority of feeder roots. As a guide, start a little out from the visible root flare, extending to just outside the dripline.

Soil conditions will also vary from site to site, so vary the depth of your injection accordingly. As a guide, most of the fine feeder roots of trees, shrubs and landscape plantings are within the top 6" of soil. Generally, you should not need to inject more than 12" to get a good saturation of the feeder root area.

For mulch beds and soil areas without competing ground cover, it is possible to do a soil drench. Please note that because of the live microorganisms and mycorrhizae it is optimal to get this product incorporated into the soil profile.

TREE ROOTER 10-22-22

A PROFESSIONAL PLANTING AND TRANSPLANT FORMULATION

ALL THE ESSENTIAL ELEMENTS TO REDUCE SHOCK AND PROMOTE ROOT GROWTH AND ESTABLISHMENT

GUARANTEED ANALYSIS

Total Nitrogen (N) 10.00%

25% Water Insoluble Nitrogen (WIN)

Available Phosphate (P_2O_5)..... 22.00%

Soluble Potash (K_2O)... 22.00%

Secondary Plant Nutrients

Copper (Cu)..... 10.00%

Iron (Fe) 0.05%

Manganese (Mn) 0.05%

Zinc (Zn) 0.05%

Nutrients derived from: Ureaform, Monopotassium Phosphate, Potassium Sulfate, Steamed Bone Meal, Chelated Iron,Copper, Manganese, Zinc and Humic Acid. Extremely low in salt.

NET WT. 25 LB.

- A sensible blend of organic and inorganic elements
- Slow release nitrogen for a steady supply of the most needed nutrients
- Phosphorous and potassium, the essential elements for root growth in their most available form
- Organic humic acid which improves nutrient uptake and buffers the plant
- Organic bone meal which is a good source of root promoting phosphorous and improves soil texture
- Iron, copper, manganese, and zinc essential for energy transfer

TREE ROOTER MIXING AND APPLICATION

TREE ROOTER is a unique formulation designed for direct application to the root ball or bare root of new plantings or transplantings to reduce shock and promote a good healthy start. The combination of organic and synthetic components of TREE ROOTER is blended specifically for maximum results in a safe localized application.

MIXING INSTRUCTIONS

TREE ROOTER should be pre-mixed into a concentrated solution and applied prior to filling in the planting hole. The solution should be applied at a rate of three to four pounds of actual phosphorous and actual potassium. To achieve this, TREE ROOTER should be mixed at 1 lb. in 5 gallons of water. Please stir or agitate the solution for three to five minutes to insure total hydration and mixing of ingredients. It is ideal to apply the solution as you are stirring, as this enables the insoluble particles to spread uniformly over the area of application.

Balled and Burlap: At the rate of 1 lb. per 5 gallons, soak the balled tree root area while in the planting hole. Apply the solution slowly for maximum absorption and allow to flood around the base. The area should be well soaked and watered in after backfill.

Bare-Root: Place the tree or shrub firmly into a large planting hole, combing the roots gently with your fingers toward the outside of the hole. Begin back-filling with a fine mulch or peat moss, covering the majority of the root area. Apply TREE ROOTER solution at the 1 lb. in 5 gallons rate, saturating the root area and planting hole. Complete backfill and water in well.

Follow same directions for spade dug trees. Please keep new plantings well watered.

XL 30-10-10 SPRAY-FOL™
FOLIAR TREE FERTILIZER

FEED AND SPRAY AT SAME TIME

COMPATIBLE WITH MOST FUNGICIDES AND INSECTICIDES
CONTAINS CHELATE COMPLEX AND WETTING AGENTS AND PENETRANTS FOR IMPROVED ABSORPTION AND DISPERSION.

GUARANTEED ANALYSIS

Total Nitrogen (N) 30.0%
3.0% Nitrate Nitrogen
2.2% Ammoniacal Nitrogen
24.8% Water Soluble Urea Nitrogen
Available Phosphate (P_2O_5)..... 10.0%
Soluble Potash (K_2O) ... 10.0%

Nutrients derived from Potassium Nitrate, Monoammonium Phosphate, and Urea.

Potential acidity equivalent to 400 lbs. calcium carbonate per ton.

NET WT. 40 LB.

XL SPRAY-FOL™ 30-10-10 is formulated for the professional arborist to use as a foliar feeding spray. It can be used by itself or in conjunction with regular applications of insecticides or fungicides.

COMPATIBILITY

XL SPRAY-FOL™ 30-10-10 is 100% water soluble and is compatible with all the common insecticides and fungicides used by the professional arborist today. It is not recommended for use with Bordeaux, Dinitro compounds, spray lime, or other highly alkaline materials.

APPLICATION

XL SPRAY-FOL™ should be applied with every spray application during the growing season. XL SPRAY-FOL™will improve the health and appearance of trees and shrubs by supplying plant foods that can be absorbed through the foliage when it is applied alone or in conjunction with your regular spray.

Dilution Table

Lbs. of XL SPRAY-FOL	*per gals. of water*
1/2	25
2	100
4	200
12	600

When using XL SPRAY-FOL™ in combination with insecticides and fungicides always prepare the solution or suspension of the chemicals first and then add the XL SPRAY FOL™ as the last ingredient. Make application when good drying conditions prevail.

FOLIAR FEEDING SHADE AND FRUIT TREES, SHRUBS AND EVERGREENS

Foliar feeding during the growing season is a proven method for increasing the quality of fruit, stimulating growth, and improving the appearance of the tree or shrub. Two pounds of XL SPRAY-FOL™ 30-10-10 per100 gals. of water or insecticide or fungicide solution gives fast and noticeable improvement. Apply as you do a normal spray covering all bark and foliage.

Foliar feeding cannot supply all the ingredients necessary over an entire growing season. We consider it as a supplement to your regular Injecto Feed program.

STRESS AND DAMAGED TREES

XL SPRAY-FOL™ is particularly effective when combined with spray applications on elm trees. It should be applied when the new leaves are partially out and when they are fully developed. Application in conjunction with gypsy moth sprays will stimulate new growth to replace insect damage.

SHRUBS AND EVERGREEN BEDS

Apply 2 lbs.of XL SPRAY-FOL™ per 100 gals. of water to 1000 sq. ft. of bed area. Apply every 2 or 3 weeks, or as soil test or plants indicate need. Discontinue applications during late summer to allow new growth to harden before the onset of cold weather.

ROOT FEEDING SHADE TREES AND LARGE EVERGREENS

Inject with a tree feeding needle into soil under branch area and extending two feet beyond, 5 gals. of solution per inch of trunk diameter. Use 2 to 3 lbs. of XL SPRAY-FOL™ 30-10-10 per 100 gallons of water. Space injection points at 2-1/2 ft. intervals, starting 2 ft. from trunk and extending 2 ft. beyond drip line.

XL 20-20-20
SOLUBLE FERTILIZER CONCENTRATE

CHLORIDE-FREE GENERAL PURPOSE FORMULA

CONTAINS: CHELATE COMPLEX AND WETTING AGENTS FOR IMPROVED ABSORPTION

GUARANTEED ANALYSIS

Total Nitrogen (N) 20.0%

5.85% Nitrate Nitrogen
5.85% Ammoniacal Nitrogen
8.35% Water Soluble Urea Nitrogen

Available Phosphate (P_2O_5)..... 20.0%

Soluble Potash (K_2O) ... 20.0%

Nutrients derived from Potassium Nitrate, Urea, Ammonium Phosphates and Potassium Phosphate.

NET WT. 25 LB.

XL 320 is a soluble fertilizer concentrate formulated to be dissolved in water and applied as a nutrient solution. XL 320 nutrient solution is immediately available to the roots and leaves of plants and thus provides simple and positive growth control.

METHOD OF USE

Conventional Method: Applying XL 320 nutrient solution to the root area at regular intervals during the growing season. The number of gallons applied each time is equivalent to a normal watering rate.

Constant Feeding: A refinement of the conventional method which has become increasingly popular because it avoids fluctuations in available plant food levels in the soil and produces more regular development and earlier harvests. With this method small quantities of XL 320 are fed with each watering in place of periodic feedings at conventional rate.

Foliar Feeding: Appling XL 320 nutrient solution in a fine spray to the foliage either alone or in conjunction with insecticides or fungicides. Foliar feeding is particularly valuable for supplementing other types of fertilization or for promoting growth during adverse soil, moisture or temperature conditions when other means would be ineffective or uneconomical.

APPLICATION

Conventional Method

Standard Dilution Table

XL 320	*Gallons of Water*	*Area Treated*
1 level tbs.	1	4 sq. ft.
5 level tbs.	5	20 sq. ft.
8 oz.	25	100 sq. ft.
2 lbs.	100	400 sq. ft.

GREENHOUSE USE

For roses, carnations, antirrhinum, chrysanthemums and foliage plant material, apply XL 320 at the standard dilution rate every 2—3 weeks during the growing season or as plants or soil tests indicate need. For tender plants such as begonias and Saintpaulias, use half strength nutrient solutions every 2 weeks or as plants or soil tests indicate.

BULBS

Saturate soil or sand with XL 320 standard nutrient solution when planting and continue at monthly intervals or as needed.

TRANSPLANT USE

Drench soil around newly moved plants or shrubs with XL 320 standard nutrient solution to reduce shock.

VEGETABLE AND FLOWER GARDENS

Apply at the standard dilution rate every 2 weeks during the growing season or as needed. It is preferable to make application when the soil is moist to assure maximum penetration to the roots.

SHADE AND FRUIT TREES

Inject with a tree feeding needle into the soil under the branch area, 5 gals. of XL 320 nutrient solution per inch of trunk diameter. Use 2-1/2 to 5 lbs. of XL 320 per 100 gals. of water depending on need and weather conditions.

Constant Feeding Method: When XL 320 is applied at every watering the dosage requirements will vary between 100 and 200 parts per million of NPK depending on soil requirements and plant growth desired. Normally 1/2 gal. of nutrient solution per sq. ft. is considered the correct coverage.

Constant Feeding Table: *Inject amount of XL 320 per 10 gallons of concentrate*

Ratio	100 ppm	150 ppm	200 ppm
1:50	2 lbs.	3 lbs.	4 lbs.
1:100	4 lbs.	6 lbs.	8 lbs.
1:150	6 lbs.	9 lbs.	12 lbs.
1:200	8 lbs.	12 lbs.	16 lbs.

Foliar Feeding Method: XL 320 is compatible with most common insecticides and fungicides including DDT, Lindane, Ferbam, Malathoin, Parathion, Methoxychlor, Sevin, Rotenone, Zineb and Maneb. It is not recommended for use with Arsenate of Lead, Bordeaux, Dinitro Compounds, Spray Lime or other highly alkaline materials. Because local Conditions, crops and available chemical differ so widely, a small scale test should always be made before undertaking large scale operations. Check with state or local agricultural authorities for assistance. When using XL 320 in combination with insecticides or fungicides always prepare first the solution or suspension of the chemicals and then add the XL 320 as the last ingredient. Apply immediately and use up the entire tankful at one time as prolonged standing could cause a chemical reaction. Foliar Feeding Dilution rate: 2 to 5 lbs. per 100 gallons of water. Make application when good drying conditions prevail and when soil moisture is adequate.

XL 20-14-10 TREE FERTILZER

ORGANIC-BASED TREE FERTILIZER 100% WATER SOLUBLE

With 20-14-10 Organic Tree Fertilizer, we bring you the finest sources of responsible plant nutrient ingredient. The combination of high quality nutrient in 20-14-10 was specially picked for the best performance within the soil and tree system and additionally for the health and safety of the user and the environment.

GUARANTEED ANALYSIS

Total Nitrogen (N) 20.0%
8% Ammoniacal Nitrogen
12% Urea Nitrogen
Available Phosphate (P_2O_5)..... 14.0%
Soluble Potash (K_2O) ... 10.0%
Iron (Fe) 0.10%

Nutrients derived from: Urea, Monopotassium Phosphate. Also contains: Humates Kelp, Yeast Protein, Iron Chelate, Yucca, Sugar

NET WT. 30 LB.

20-14-10 ORGANIC TREE FERTILIZER is 100% soluble, which means that it will dissolve completely within the spray tank. Because it is 100% soluble it does not have the slow release properties of most of our standard tree fertilizers. Multiple seasonal applications of this product would be necessary to duplicate the slow release activity of most of our standard formulations. The benefit and effect of 20-14-10 might last for a month, ambient conditions dependent.

APPLICATION

90% of feeder roots are in the top 12 inches of soil with the majority in the first 6 inches. They start out from the trunk and, in some cases, extend well beyond the drip line. This is the area to be injected with 20 -14-10 ORGANIC. The 20-14-10 comes as a powdered concentrate to be mixed in the spray tank.

Dilution Table

Lbs.of 20-14-10	*per gals. of water*
3	100
9	200
30	1000

Please contact The Doggett Corporation for any further clarification on mixing and application rate at 1-800-448-1862.

Injection should begin out from the trunk and be spaced 2-1/ 2 ft. apart, injecting on a grid extending beyond the drip line. Apply 150 gals. to each 2000 sq.ft. Following the grid method outlined, you should inject approximately 1/ 2 gallon of fertilizer solution at each point. Based on the 2-1/2 ft. spacing, this will apply 150 gals. of solution.

To calibrate your rig and the operator, we suggest you find out how long it takes to inject 1/2 gal. of material into bucket or measuring device. This will probably take 3 to 5 seconds. Count off the seconds and use the same count and cadence while injecting the probe at each point in the soil.

XL 30-5-10 SOLUBLE TREE FERTILIZER

A HIGH QUALITY, SPECIALLY FORMULATED FERTILIZER FOR SOIL INJECTION INTO THE ROOT AREA OF TREES AND SHRUBS

LOW SALT, CHLORIDE FREE. CONTAINS HUMATES AND SLOW RELEASE NITROGEN.

GUARANTEED ANALYSIS

Total Nitrogen (N) 30.0%
1% W.I.N.
Available Phosphate (P_2O_5)..... 5.0%
Soluble Potash (K_2O) ... 10.0%

Secondary Elements
Iron (Fe) 0.10%
Manganese (Mn) 0.05%
Zinc (Zn) 0.05%

10 x 4 LB. CASE PACK

Nutrients derived from: Urea, Ureaform, Monopotassium Phosphate, and Sulfate of Potash, Chelated Iron, Manganese and Zinc Sulfate, Humates.

This TREE FERTILIZER is totally soluble and designed for sprayers having poor agitation. It will supply all the necessary nutrients for good tree health and vigor throughout the growing season.

APPLICATION

90% of feeder roots are in the top 12 inches of soil with the majority in the first 6 inches. They start well out from the trunk and extend well beyond the drip line in established trees in unencumbered soil. This is the area to be fertilized with DOGGETT TREE FERTILIZER.

Injections should be 4 to 6 inches deep using a soil probe at 100 to 200 PSI. Injections should be spaced 2 ½ feet apart on a grid into the root area. Following the grid method, you should inject approximately 1/2 gallon of fertilizer solution at each point. This will apply 150 gallons over 2,000 square feet.

Dilution
1/2 package (2 lbs.) in 100 gallons of water
1 package (4 lbs.) in 200 gallons of water

DOGGETT'S PLANTING & TRANSPLANT TABLETS

A 16-4-8 slow release formulation with all the key ingredients for proper tree & shrub nutrition. The macro elements of Nitrogen, Phosphorous & Potassium, plus Iron, Magnesium, Manganese & Zinc, with a large percentage Humates to enhance uptake and to feed the soil.

GUARANTEED ANALYSIS

Total Nitrogen (N) 16.0%
10.5% Water Insoluble Nitrogen
Available Phosphate (P_2O_5)..... 4.0%
Water Soluble Potash (K_2O)..... 8.0%

Secondary Elements
Iron (Fe) 2.5%
Magnesium (Mg) 2.25%
Manganese (Mn) 2.0%
Zinc (Zn) 1.8%

Non plant food ingredients: Humates at 10.0% per total weight

Nutrients derived from: Ureaform, Monoammonium Phosphate, Sulfate of Potash, Iron Sucrate, Magnesium Sucrate, Manganese Sucrate, Zinc Sulfate

Please refer to the planting guide from the International Society of Arboriculture for proper care and handling of your new planting or transplant.

APPLICATION RATES

New Plantings

Fill the planting hole about half way up the ball. The tablets should be placed evenly about two feet apart, and about an inch from exterior root.

For bare root, the same basic application applies but would vary with root location.

Tree / Shrub Container Size

	1 Gal	2 Gal	3 Gal	5 Gal	7 Gal	15 Gal	2-4" B&B
INSTALLATION	1	1 to 2	2 to 3	2 to 3	3 to 5	7 to 10	15 to 24

Existing Tree & Shrub in the landscape

Auger holes approximately 4" to 6" deep and on 2 ft centers in the root area. The holes should be on a grid starting well out from the base root flare and extending to the dripline, and beyond in unencumbered soils.

Maintenance Rates for Existing Plantings (Plant Height or Spread)

	18" or less	18-36"	36-54"	4.5 - 6 ft	6 - 7.5 ft	7.5 - 9 ft	Each Add'l 18"
MAINTENANCE	2	2 to 4	4 to 6	6 to 8	8 to 10	10 to 12	Add 2

(500 x 21 GRAM TABLETS PER CASE) NET WT. 25 LB.

DOGGETT'S PALM & SOUTHERN ORNAMENTAL LANDSCAPE SPECIAL

8-2-15-12S-3MG

WITH NON-LEACHING, SLOW RELEASE NITROGEN & HUMATES

GUARANTEED ANALYSIS

Total Nitrogen (N) 8.0%
5.00% W.I.N. (Water Insoluble Nitrogen)
Available Phosphorous (P_2O_5)..... 2.0%
Soluble Potassium (K_2O)..... 15.0%

HUMIC ACID AT 1% TOTAL WEIGHT

Secondary Elements
Iron (Edta)..... 1.0%
Sulfur (S) 12.0%
Copper (Cu)..... 0.05%
Boron (B)..... 1.0%
Magnesium (Mg) 3.0%
Manganese (Mn) 1.0%
Zinc (Zn) 0.15%
Molybdenum (Mo)..... 0.0005%

Nutrients derived from: Ureaform, Monopotassium Phosphate, Potassium Phosphate, Potassium Sulfate, Iron Edta, Copper Sulfate, Magnesium Sulfate, Manganese Sulfate, Zinc Sulfate, Boric Acid, Sodium Molybdate.

Dilution Rate: 15 lbs per 100 gallons of water

NET WT. 30 LB.

20-0-6 ARBOR LIQUID FERTILIZER

SLOW RELEASE

WITH HUMATES AND MINOR ELEMENTS

GUARANTEED ANALYSIS

Total Nitrogen (N) 20.0%
10% Slowly Available Water Soluble Nitrogen
10% Urea Nitrogen
Soluble Potash (K_2O) 6.0%

Secondary Elements
Iron (Fe) 0.10%
Manganese (Mn) 0.05%
(Water Soluble Mn)
Zinc (Zn) 0.05%

Humates at 1% per total weight

(2 x 2.5 GAL JUG/CASE)
NET WT. 52.5 LB.
KEEP FROM FREEZING

Nutrients derived from: Methylene Urea, Urea, Potassium Carbonate, FeEdta, Manganese Edta, Zinc Edta.

A specialty fertilizer blended specifically for application on trees and ornamentals in the practice of professional arboriculture.

A true concentrated liquid for easy mixing & application. For root injection, soil drench, or foliar spray application. This solution has a low salt index and is compatible with fungicides & pesticides.

MIXING RATES

1.25 gallons (1/2 jug) 100 gallons
2.5 gallons (1 jug) 200 gallons
5 gallons (2 jugs) 400 gallons

APPLICATION RATES

90% of feeder roots are in the top 12 inches of soil with the majority in the first 6 inches. Start your application approximately 2 to 4 feet from the root flare and extend to beyond the drip line. The soil should be inoculated with a root probe going 4 to 6 inches deep from a power rig set at approximately 150 to 200 PSI, depending upon the porosity or density of the soil. The root area of the tree should be injected in a grid or in concentric circles spacing 3 feet apart. Inject approximately ½ gallon of solution per injection site. Based on the 3 feet spacing this should put around 150 gallons. Site and soil conditions vary, so adjust your application accordingly. Shake before using.

6-12-12 FALL ARBOR LIQUID FERTILIZER

SLOW RELEASE

WITH HUMATES AND MINOR ELEMENTS

GUARANTEED ANALYSIS

Total Nitrogen (N) 6.0%
1.50% Slowly Available Water Soluble Nitrogen
3.00% Urea Nitrogen
1.50% Ammoniacal Nitrogen
Available Phosphate (P_2O_5)..... 12.0%
Soluble Potash (K_2O) ... 12.0%

Secondary Elements
Iron (Fe) 0.10%
Manganese (Mn) 0.05%
(Water Soluble Mn)
Zinc (Zn) 0.05%

Humates at 1% per total weight

(2 x 2.5 GAL JUG/CASE)
NET WT. 52.5 LB.
KEEP FROM FREEZING

Nutrients derived from: Methylene Urea, Urea, Ammonia, FeEdta, Manganese Edta, Zinc Edta, Phosphoric Acid and Potassium Hydroxide.

A specialty fertilizer blended specifically for application on trees and ornamentals in the practice of professional arboriculture.

A true concentrated liquid for easy mixing & application. For root injection, soil drench, or foliar spray application. This solution has a low salt index and is compatible with fungicides & pesticides.

MIXING RATES

1.25 gallons (1/2 jug) 100 gallons
2.5 gallons (1 jug) 200 gallons
5 gallons (2 jugs) 400 gallons

APPLICATION RATES

90% of feeder roots are in the top 12 inches of soil with the majority in the first 6 inches. Start your application approximately 2 to 4 feet from the root flare and extend to beyond the drip line. The soil should be inoculated with a root probe going 4 to 6 inches deep from a power rig set at approximately 150 to 200 PSI, depending upon the porosity or density of the soil. The root area of the tree should be injected in a grid or in concentric circles spacing 3 feet apart. Inject approximately ½ gallon of solution per injection site. Based on the 3 feet spacing this should put around 150 gallons. Site and soil conditions vary, so adjust your application accordingly. Shake before using.

8-0-6 DRY GRANULAR ORGANIC FERTILIZER

FOR SOIL SURFACE APPLICATION

AN ORGANIC FERTILIZER FOR LANDSCAPE TREES AND SHRUBS
SLOW RELEASE NITROGEN - PHOSPHORUS AND CHLORIDE FREE
VERY LOW SALT INDEX - ALL COMPONENTS OMRI LISTED

GUARANTEED ANALYSIS

Total Nitrogen (N) 8.0%
0.3% Water Soluble Organic Nitrogen
7.7% Water Insoluble Nitrogen
Phosphate (available P_2O_5)..... 0%
Potassium (soluble potash K_2O)..... 6.0%

Nutrients derived from; Protein Hydrolysate, Feather Meal, Sulfate of Potash

NET WT. 50 LB.

APPLICATION INSTRUCTIONS

Apply at a rate of 37.5 pounds per 1000 square feet (18 kg/100 m2) from near the trunk to near the dripline of nutrient deficient trees and shrubs. One bag treats 1333 square feet (124 m2).

Water in after application to reduce animal attraction and feeding.

DOGGETT'S SLOW-RELEASE PROFESSIONAL GRANULAR 20-5-10

A TRUE SLOW-RELEASE NITROGEN FORMULATION, EXTREMELY EFFECTIVE, SAFE, VERY LOW IN SOLUBLE SALTS.

GUARANTEED ANALYSIS

Total Nitrogen (N) 20.0%
13.5% W.I.N.
5.5% Water Soluble Nitrogen
1.1% Ammoniacal Nitrogen
Available Phosphate (P_2O_5)..... 5.0%
Soluble Potash (K_2O) ... 10.0%

Secondary Elements
Iron (Fe) 0.36%
Magnesium (Mg) 0.15%
Zinc (Zn) 0.14%
Boron (B)..... 0.06%
Copper (Cu)..... 0.06%
Molybdenum (Mo)..... 0.002%

Nutrients derived from: Ureaform, Monopotassium Phosphate, Potassium Sulfate, Iron, Copper Sulfate, Magnesium Sulfate, Zinc Sulfate, Boric Acid, Sodium Molybdate.

NET WT. 50 LB.

DOGGETT GROWER SPECIAL is composed of slow-release nitrogen particles and other essential plant nutrients, providing sustained nitrogen feeding for up to nine months. This is a non-burning, non-leaching nitrogen ingredient. Growing media/soil temperature along with naturally occurring microbes are the primary factors that affect product release. Microbes naturally available in growing media, along with optimum growing temperatures between 55°F and 95°F, provide the ideal conditions for nitrogen release and plant growth. Temperatures generally above 95°F reduces microbial activity. This is a built-in safety net. It is important to note that this unique formula will not dump nutrient during periods of high temperature and moisture.

LONGEVITY

It has been determined through years of field trials that media temperatures less than 70°F/20°C increase product longevity, and that media temperatures greater than 70°F/20°C decrease longevity. Since growing media temperatures fluctuate with geography and time, a grower should consider crop types and production goals when selecting the appropriate product.

CULTURAL PRACTICES

The ultimate factor in determining product selection and application rate should be based on individual grower practices. The table below lists general cultural factors that can influence product rate.

Use a higher rate if your plants are:
- Heavy feeders, salt tolerant
- Fast-growing
- Receiving frequent overhead irrigation or high rainfall
- Grown in coarse and airy media

Use a lower rate if your plants are:
- Slow growing or salt sensitive
- Under a drip irrigation regime or in an area of low rainfall
- Grown with a combination liquid and slow-release nutrients
- Grown in a tight/fine media with low leaching capabilities
- Grown in Media that has been composted

DOGGETT'S SLOW-RELEASE PROFESSIONAL GRANULAR 20-5-10

CONTAINER SIZE / TOP DRESS RATES IN GRAMS

	No. containers per cubic yard	Low	Medium	High
1 gallon	275	12	15	18
2 gallon	140	20	29	40
3 gallon	85	30	48	67
5 gallon	55	48	74	103
7 gallon	35	60	97	134
	Surface area per sq. ft.	**Low**	**Medium**	**High**
10 gallon	1.4	87	141	196
15 gallon	1.6	100	151	210

APPLICATION RATES

Soil mix / Incorporation rates	**Low**	**Medium**	**High**
Lbs. per cubic yard	9.0	12.0	15.0
Lbs. per cubic foot	0.33	0.44	0.56
Lbs. N. per cubic yard	1.8	2.4	3.0

For rates not listed, application should equal 1.5 to 3 lbs. actual nitrogen

1. Reduce rate by 50% if media contains native soil.
2. When liquid fee program is employed, reduce liquid feed amount by 50% and use the next lowest recommended rate.
3. Irrigate after application of product.
4. Do not use this product for unrooted cuttings.
5. Use low rate on heavy or clay soils, or soils with high peat content. Use high rate on light or sandy soils.

LANDSCAPE APPLICATION RATES

5 lbs. per 1,000 sq. ft. = 1 lb. of Nitrogen
15 lbs. per 1,000 sq. ft. = 3 lbs. of Nitrogen

APPROXIMATE VOLUME MEASURES

Conventional Measures
Bulk Density= 59.13 lbs./cubic ft.

1 teaspoon = 7.5 grams
1 tablespoon = 15 grams
1/4 cup = 60 grams
1/3 cup = 80 grams
1/2 cup = 120 grams
1cup = 240 grams
1 oz. = 28 grams
1 lb. = 454 grams

Late Summer through Winter application: Irrigation may be necessary for crops under protective cover to prevent soluble salt build-up. Growers must use caution whenever applying fertilizer to crops with infrequent irrigation, and they should monitor soluble salt levels regularly on these crops and irrigate as needed. Should irrigation be unavailable in these Winter crops, avoid application of fertilizer. Immediately after uncovering plants in the Spring, irrigate as necessary to provide thorough leaching of any accumulated soluble salt.

Storage of Mixes: Slow-release fertilizers release nutrients upon incorporation into growing medias. We recommend you use media with incorporated fertilizer immediately if possible to avoid unnecessary release of nutrients.

Irrigation Management: Adjust irrigation volume and frequency to maintain adequate soluble salt levels within the growing media for optimum product performance and crop growth. When it is hot, increase irrigation volume/frequency. When it is cooler, decrease irrigation volume/frequency.

DIRECTIONS FOR USE

Application Rates: The application rates listed are intended as a guideline in developing a fertilization program. These rates may or may not apply to your area of growing conditions. It is the grower's responsibility to determine the appropriate rate. Your rate may be higher or lower than suggested, based on your growing conditions.

Product Trials: Always conduct a trial before starting a new fertilizer program. Use several rates and plant types to be grown to determine appropriate rates. Major changes in standard cultural practices should also coincide with a fertilizer rate trial.

Product Storage: Store in a clean, cool, dry place. Reseal opened bag by folding top down and securing.

FOR PROFESSIONAL USE ONLY!

Caution: Do not ingest or inhale. Keep away from children or pets. Follow label instructions and use care when handling all fertilizer products.

Important Notice: This product has been researched to provide necessary data to support its use on ornamentals. However, it is understood that tests may not have been carried out on all varieties and under all growing conditions. The user should always follow label directions and exercise judgment and caution when using this product on a given variety until familiar with the results under growing conditions.

The manufacturer disclaims all responsibility for damage to plants and equipment through the use of this product whether used in accordance with directions or not.

FERRO-LATE XL IRON CHELATE

SOLUBLE CHELATED IRON 13.2%

TO BE SPRAYED ON FOLIAGE OR INJECTED INTO THE SOIL FOR CORRECTION OF CHLOROSIS DUE TO IRON DEFICIENCY. IRON EXPRESSED AS ELEMENTAL 13.2% DERIVED FROM IRON ETHYLENEDIAMONE TETRA ACETATE (IRON EDTA).

NET WT. 8 x 3 LB. CASE
or 50 LB. BULK

Iron is an essential micronutrient for good plant, tree and shrub health. It is widely distributed in soils and fertilizers and application of iron should only be necessary when deficiency symptoms occur. It especially needs to be applied in areas where alkaline soils occur.

Deficiency symptoms would be chlorosis of young leaves or needles especially in a wet or cool year.

For example: In oaks, young leaves may be yellow on emergence, develop interveinal necrotic spots and light color. Mid-rib and veins remain green while interveinal areas become yellow or green and white. Youngest leaves are most severely affected. Spraying with XL IRON CHELATE results in quick recovery if symptoms are not too severe. One of the causes of iron deficiency is that the iron may be locked-up in the soil due to imbalance Ph. We recommend soil and tissue sample to best determine corrective measures.

APPLICATION RATES

XL IRON CHELATE should be dissolved in water or fertilizer solutions, at the rate of one pound in 100 gallons of water. The best results for foliar application have been achieved from this rate. The addition of a wetting agent will improve distribution and absorption and is strongly recommended.

APPLICATIONS

Trees including Citrus, Other Fruit and Ornamentals (trunk diameter over 6 inches): *Soil application* - apply 1 to 5 pounds per tree depending on age, size of tree and extent of chlorosis. *Foliar application* - thoroughly wet the leaves using 1 pound per 100 gallons of solution. Do not apply during bloom.

Field Crops including Corn, Sorghum, Beans and Cotton: *Soil application* - apply 3 to 10 pounds per acre in starter fertilizer, bulk blend or liquid. Rate will depend on soil conditions and extent of deficiency. *Foliar application* - apply 1 pound per 100 gallons of solution 4 to 6 weeks after planting. Do not apply during bloom.

Lawns and Turf: Apply 1 pound per 10,000 square feet. Mix thoroughly with water and apply evenly. Application should be followed with a thorough watering in.

Garden flowers: *Soil application* - use 4 ounces per 100 feet of row. For individual plants (in garden) use 2/3 ounce. *Foliar application* - thoroughly wet leaves using 1 pound per 100 gallons solution. Do not apply during bloom.

NUTRI-SUL 90

ELEMENTAL SULFUR 90%

WETTABLE SULFUR TO LOWER PH OF ALKALINE SOILS

GUARANTEED ANALYSIS

Sulfur (S) 90.0%

***Attention:* Sulfur dust in air may explode. Do not air convey.**

Explosive Limits in Air:
Upper 35 Gr. per Cu. M.
Lower 1400 Gr. Per Cu. M.

Sulfur ignites easily - eliminate all sources of ignition.

NET WT. 50 LB.

When this sulfur is applied to soils it is attacked by soil microorganisms to form sulfuric acid. This sulfuric acid in turn supplies the sulfate ion which is taken up by the plant. The acidifying effect of sulfur oxidation in the soil lowers the soil pH and allows uptake of soil nutrients and particularly iron.

We recommend injection of this material directly into the soil as the speed of oxidation to sulfuric acid depends mainly on the extent of contact between sulfur and the soil. Injection on a grid allows for fine division and wide dispersion into the soil.

Mixing Recommendations

(per 100 gallons)

Soil pH	*Sandy Soil*	*Clay Soil*
7.5	5 lb.	8 lb.
8	7 lb.	10 lb.
8.5	12 lb.	15 lb.

Research has shown that unobstructed tree feeder roots tend to be in the top 6” of soil. Therefore, we recommend that the probe or hydraulic needle be inserted no deeper.

Injections should be every 2-1/2 feet square on a grid starting approximately five feet from the trunk and extending beyond the drip line. A site judgment and/or a core sample can be made to determine extent of roots.

DOGGETT'S NATURAL RESOURCE

DOGGETT'S NATURAL RESOURCE FOR TREES

AN ORGANIC BASED COMPOUND TO IMPROVE THE SOIL AND STIMULATE ROOT GROWTH THROUGH ENHANCED NUTRIENT UPTAKE

Doggett's Natural Resource is formulated for professional application into the root area of trees and shrubs. 90% of tree feeder roots are in the top 12 inches of soil, and the majority of them within 6 inches. This is the area to be treated with the recommended method of subsoil hydro-injection.

GUARANTEED ANALYSIS

Humate	71.40%
Kelp Extracts	20.50%
Soluble Fish Meal	5.00%
Wetting Agent (Yucca)	1.00%
Iron 13% (Fe)	2.00%
Manganese (Mn)	0.05%
Zinc (Zn)	0.05%

10.9 % of Potassium derived from Humate and Kelp extracts. 1.3% Nitrogen derived from Fishmeal.

NET WT. 5 LB.
(20 PACKETS x 1/4 LB. EACH)

Dilution Table

Standard Rate	**1/4 lb. per 100 gals.**
Plus Rate	**1/2 lb. per 100 gals.**
Super Rate	**1 lb. per 100 gals.**

METHODS AND RATES

DOGGETT'S NATURAL RESOURCE is an organic based soil conditioner and fertilizer enhancer. It is designed for the professional applicator, for use with professional equipment. The main ingredient of this formulation is humic acid, which has proven to assist nutrients in transferring from the soil to the plant. It also helps break up compacted soil, enhances water retention, and stimulates development of micro-flora populations in the soil. Humic acid is not a fertilizer, but instead a compliment to a good fertilizer program. The other ingredients in order of percentage in the formulation are: cold water kelp, which is a natural plant hormone (cytokinins) and has many naturally occurring trace nutrients within the extract. Fish meal, which is an organic source of nutrients and soil mulch. Chelated iron, manganese and zinc function primarily as parts of enzyme systems for various energy transfers, assimilation and growth processes within the plant. Wetting agent (yucca), an all-natural dispersant which reduces the tension in the soil and enables the product to move easily through the soil structure.

DOGGETT'S NATURAL RESOURCE was intended to be applied by the injection into the root/soil area under hydraulic pressure. 90% of the trees absorbing roots are in the top 12" of soil, with the majority within 6". In mature trees and shrubs, these fine roots start a good distance out from the trunk and in unencumbered soil extend well beyond the drip line. This is the area for application of soil enhancements and fertilizer. Soil injection should be 4 to 6 inches deep using a soil/ root fertilization probe from a power sprayer. Pressure of 150 to 200 lbs. should be more than adequate in good soils.

Higher pressures may be used with care in more compacted soils. The standard rate of 1/4 lb. per 100 gallons is recommended for soils that are basically pretty good; meaning that there is some organic matter and they are not overly compacted and fairly well-drained. The plus rate of ½ lb. per 100 gallons is for a substandard soil with low organic matter, high compaction and little or no nutrient analysis. It is important to remember that soils in the landscape have no nutrient recycling and therefore must be supplemented.

Injection of the soil should begin at a point out from the trunk where good site judgment deems finer roots to be. Injections should be spaced 2 -1/ 2 to 3 ft. apart and extend well beyond the drip line. The quantity of solution should be ¼ to ½ gallons per injection site. Water is a critical ingredient for good plant health and should not be spared. This application should progress on a grid, within multiple plantings or when in shrub beds. For individual plantings injections can follow a concentric circle type pattern. DOGGETT'S NATURAL RESOURCE dilutes into a complete solution. When used in conjunction with a fertilizer, as is recommended, remember to reduce rates by 1/4. For further information concerning this product or any of the other Doggett professional tree fertilizers and soil amendments. Please don't hesitate to call our toll-free number.

BIOCHAR SUSTAINABLE BENEFITS

Research confirms biochar-enriched soils grow larger, healthier plants with greater yields, particularly in degraded or highly-weathered soils. In fact, biochar users typically report their costs of biochar are paid off during the first year by increased yield revenues.

While the Brazilian tradition provides long-term evidence of biochar's positive impact on soils, recent research continues to support the concept. Examples include naturally-occurring biochar found in fire-prone North American grassland soils. Sharing the same basic properties with biochar generated from wood and grass feedstock, these grassland soils prove to be some of the most fertile in the world. But why?

Increases in soil fertility are attributable to biochar's unique properties of adsorption and stability. Compared to other organic soil amendments, biochar is much more effective at retaining nutrients and keeping them available to plants. It maintains a porous structure, which attracts beneficial microbes, holds onto nutrients, retains moisture – qualities that increase fertilizer efficiency and enhance crop yield, while reducing the need to irrigate. And history confirms biochar is much more stable in the environment than any other form of organic matter. By storing organic carbon, biochar provides for an exceptionally long life – thousands of years in fact.

SUPPORTING SUSTAINABLE ARBORICULTURE

Research shows biochar has several effects in soil including:

- Increased water infiltration and water holding capacity
- Improved soil structure, tilth and stability
- Increased cation exchange capacity (CEC)
- Increased adsorption of ammonium, nitrate, phosphate, and calcium ions
- Increased nutrient retention over ordinary organic matter
- Improved soil pH buffering and stability
- Increased soil biology and diversity
- Enhanced, denser root development
- Reduced fertilizer runoff, especially nitrogen and phosphorus
- Reduced total fertilizer requirements
- Decreased emissions of nitrous oxide by 50-80%

All in all, this powerful soil amendment can be a significant tool to increase food security and crop diversity, particularly in areas with depleted soils, limited organic resources, and scarce water. The increased soil fertility from the use of biochar may also decrease the need for further deforestation for agricultural purposes.

Minor & Secondary Elements

Iron (Fe)

Iron has a critical role in metabolic processes such as respiration and photosynthesis. Iron is essential for the formation of chlorophyll and the maintenance of chloroplast.

Iron Chelates EDTA: for soils with a pH below 7.5

Iron Chelates EDDHA: for soils with a pH above 7.5

Manganese (Mn)

Manganese is essential in plants for several physiological processes, particularly photosynthesis, but also respiration and Nitrogen assimilation.

Magnesium (Mg)

Magnesium's most important role is as the central atom in the chlorophyll molecule. Chlorophyll is the green pigment in leaves and is responsible for the process of photosynthesis.

Zinc (Zn)

Zinc plays an important role in many biochemical reactions within plants. Zinc activates enzymes that synthesize certain proteins. It is used in the formation of chlorophyll and carbohydrates, as well as the conversion of starches to sugars. Zinc is also necessary for the formation of Auxins, which regulates plant growth.

Sulfur (S)

Many soils in North America are alkaline or high pH. When the pH is high, many nutrients get tied up in the soil and are unavailable to the plant. We can acidify the soil with elemental sulfur to decrease the pH and improve Phosphate and micronutrient availability.

Soil Conditioners

Humates

Humic Acids are an important soil conditioner that helps increase the cation exchange capacity in the soil, which aids in nutrient uptake. Humic acids are good chelators that solubilize nutrients, making them available for plant uptake. They also act as a buffering agent in higher pH soils.

Mycorrhizal Fungi

Mycorrhizae increase the surface absorbing area of roots, which greatly improves a plant's ability to access soil resources. Mycorrhizae also release enzymes that make tightly bound nutrients more available. This improves a plants performance and survival.

Beneficial Bacteria

Microbes are essential for healthy plant nutrition and plant growth. Soil structure is also improved with healthy microbe populations. Urban landscapes can be deficient in microbial populations compared to natural forest soils. It is important to have a diverse spectrum of beneficial microorganisms in the soil.

Kelp Meal

Kelp and Seaweed have great organic matter and soil conditioning properties that help maintain productivity of microbes. This aids in root and plant development as well as stress resistance.

Biochar

Biochar is a very stable form of organic matter. It is very effective at retaining nutrients and keeping them available as well as adsorbing and filtering toxins in the soil. See a detailed description on page 20.

Why fertilize landscape and urban trees & shrubs?

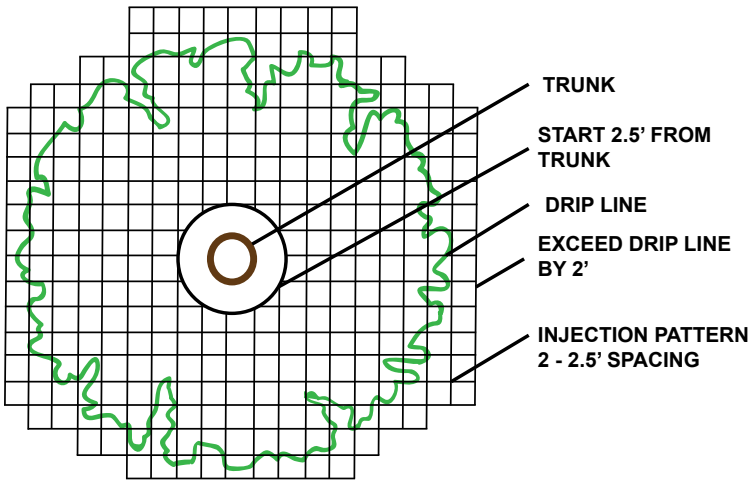
Trees in their natural setting, the forest floor, get their nutrients from rotting leaves, twigs, and general green litter, which recycles nutrients back into the soil. In a landscape setting this litter is removed, therefore eliminating all sources of the essential Nitrogen, Phosphorous, Potassium and any other necessary minor elements needed for good growth & vigor. It is well known, and documented in soil tests that urban soils are deficient in essential elements, leaving trees in a weakened state, lacking good color and vigor. This hampers the tree's internal processes and creates susceptibility to diseases and other external factors.

We have designed this line of professional tree fertilizers to mimic what occurs in a healthy forest floor. They have been made with the finest of responsible ingredients low in mineral salts and a slow release. The mixing and application rates were designed to be at a level as not to push growth, but to achieve good health, color, and vigor. Maintaining good vigor in landscape trees not only keeps them vibrant and healthy, but also helps with resistance to pests and other diseases, keeps the system strong to resist storm damage and other external impacts, and helps with longevity.

How do we accomplish fertilizing landscape and urban trees & shrubs?

There are several methods generally used to get this done. We strongly recommend that you refer to the ANSI A300 Standard for tree & shrub fertilization and it's companion publication Best Management Practices.

TREE FERTILIZATION INJECTION PATTERN



Methods for application and particular applications will vary according to range, climate, soil conditions, and other external site variables. It is important to assess your site conditions for these factors. But for our purposes here, general application methods will be discussed. To begin with, the diagram at left shows you the basic coverage area.

The most efficient way, we believe, is with a soil injector under hydraulic pressure from a spray rig. You are accomplishing 3 things; watering, fertilization, and fracturing of the soil. This method also gets you down into the soil profile where the feeder roots are.

A second method is application of granular fertilizer using the drill hole method. 3" holes are drilled on the same grid and the granular material is physically put into the holes. It is important to note that with some of the trials we did with this method did not give good coverage because the material did not move from the application point.

A third method is broadcast application on the surface, but this is only applicable if there is NO groundcover. And you are also not assured that the material will make it's way down to the feeder roots which is essential for effectiveness.

Note: This is a broad and general explanation. Full methodology is detailed on the individual labels within this label catalogue.

Please contact us with any questions or additional information 800-448-1862 doggettcorp.com

TREE FERTILIZATION COST ESTIMATING FORM

PROPERTY ______________________________ **DATE** ______________

______________________________ **JOB NO.** ______________

____

TREE SPECIES	DBH	GAL/ INCH	TOTAL GALLONS	LBS. FERT. PER GALLON	TOTAL LBS.	COST PER LB.	TOTAL FERT. COST
						TOTAL ▸	

LABOR COST: DBH x 5 Gals. x 2 x Seconds to inject 1/2 gal. x
Time between holes divided by 3600 x Employees hourly rate = Total Labor

_________ x 5 x 2 x __________ x _________ divided by 3600 x __________ = _________

Set up time ______________________________

Factor for down time ______________________________

Total miles x cost per mile ______________________________

DOGGETT
The Tree Fertilizer Company

KEEPING TREES AND TREE CARE PROFESSIONALS LOOKING GOOD TO THE CUSTOMER YEAR AFTER YEAR

DOGGETT

The Tree Fertilizer Company

THE STANDARD SINCE 1940.

The **Number 1** fertilizer/soil conditioner choice of tree care professionals.

The Doggett Corporation

www.doggettcorp.com

(800) 448-1862

30 Cherry Street
Lebanon, NJ 08833