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ABOUT THE PRODUCT GUIDE
The number following each package size is our product I.D. number. This guide is based on the most current product labeling available at time of printing. This guide does not replace reading the product label before use. Southern Agricultural Insecticides, Inc is not responsible for recommendations not made by our employees including Garden Center and State agency employees. State agencies may provide additional information on specific control information, rates, timing, applications and days to harvest limitations. Permit may be required for commercial application. When rates are given,TBS. refers to level tablespoonfuls and tsp. refers to level teaspoonfuls. Direct any questions to:
Southern Agricultural Insecticides, Inc.
P.O. Box 218, Palmetto, FL 34220
or info@southernag.com

TRADEMARK RECOGNITIONS

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Products with logo are either Reduced Risk, Organic or Eco Friendly
BAITS

MOLE CRICKET BAIT
• Same formulation used by golf courses and sports fields
• Low use rate
CONTAINS: 5% Carbaryl insecticide on an attractant feed base.
USE ON: Vegetables, flowers, fruits, lawns, and ornamentals.
CONTROLS: Cutworms, armyworms, crickets, darkling ground beetles, mole crickets grasshoppers and sowbugs.
RATE: 0.45 lb. to 0.9 lb. per 1,000 sq. ft.
APPLICATION: Apply evenly over area with fertilizer spreader.
PACKED: 8 x 3.6 lb. bag - #08353, 9 lb. bag - #08359
Also available in a 40 lb. bag.

PAYBACK FIRE ANT BAIT
• Controls Fire Ants for up to 2 months
• Contains Conserve® Insecticide
• Dead Ants in 24 hours
• No watering-in necessary
CONTAINS: 0.015% Spinosad
USE ON: Lawns, home perimeter and around ornamental plants (flowers, shrubs and trees).
CONTROLS: Fire Ants.
RATE: 4 tablespoons per mound or broadcast at .5 - .75 cup per 1,000 sq. ft. 12 oz treats up to 5,000 sq ft or 10 mounds.
APPLICATION: Sprinkle bait evenly over and around each mound in a 4 ft diameter circle. Do not disturb mounds.
OR broadcast with a hand held or ground driven rotary spreader.
PACKED: 12 x 12 oz canister - #09300, 6 x 3 lb plastic jug - #09303
9 lb. bag - #54339

SNAIL & SLUG BAIT
• Baits do not require watering in
• Low use rate
• Creates “guard line” at the edge of plantings
CONTAINS: 3.25% Metaldehyde pelletized bait.
USE AROUND: Fruit trees, berries, vegetables, ornamentals, lawns and greenhouses.
CONTROLS: Snails and slugs.
RATE: 1 lb. treats 1,100 - 1,500 square feet (30 - 40 lbs per acre)
APPLICATION: Spread evenly over area to be protected.
PACKED: 12 x 1 lb. canister #10901, 12 x 2.5 lb. bag #10910, 20 lb. bag #10919, Also available in a 40 lb. bag.

INTERESTING FACTS

Fire Ants
✓ Fire ants can have more than one queen in a nest.
✓ The flight (mating) season is usually in spring and fall, but can occur anytime after a rainfall when temperatures are above 75 degrees.

Mole Crickets
✓ There are now ten known species of mole crickets in the United States.
✓ Three of the species are native and are not considered a pest. The remaining seven species are non-native and considered a pest that damages lawns and gardens as well as commercial agriculture.
✓ Mole crickets feed on underground roots, day or night. They can also damage plants by tunneling.

Snails & Slugs
✓ Slugs are snails without a visible shell.
CAPTAN FUNGICIDE
• Controls Botrytis Rot (grey mold) on Strawberries
• Labeled for many fruits, ornamentals and lawns

CONTAINS: 50% Wettable Powder Captan.

USE ON: Fruit Crops: Almonds, apples, apricots, blueberries, cherries, grapes, nectarines, peaches, plums, and strawberries.

Ornamentals: Azaleas, begonias, camellias, carnations, gladiolus, chrysanthemums and roses. Also grasses.


RATE: Foliar spray 2 teaspoons - 4 tablespoons per gal. of water. Grasses -1 tablespoon in 1 gallon of water per 1,000 sq. ft.

APPLICATION: Foliar Spray; Mix with water and apply as a thorough cover spray.

PACKED: 12 x 8 oz. - #01600

LIQUID COPPER FUNGICIDE*
• Controls diseases caused by bacteria & fungi
• New formulation works well with hose end sprayers
• Labeled for control of moss and algae

CONTAINS: 27.15% Copper diammonia diacetate complex (8% Metallic Copper Equivalent, 0.772 lbs per gallon)

USE ON: Many fruits, vegetables, turfgrass (algae control), live oak (spanish moss control) and ornamentals

CONTROLS: Many bacterial and fungal leaf spots, rust, blights. Also controls algae in turfgrass and moss in live oaks.

RATE: For most ornamentals and vegetables use between 2 to 6 tsp. per gallon. Rates vary depending upon use. See label for specific information.

APPLICATION: Mix with water and apply as a cover spray.

PACKED: 12 x 8 oz. - #02901, 12 x Pt - #02902, 12 x Qt - #02903, 4 x Gal. - #02904

SA - 20 DISINFECTANT
• Controls Algae and Mildew
• Disinfect greenhouses, pots & tools
• Use on ornamentals including orchids
• Controls toadstools and other fungi in the lawn

CONTAINS: 10% dimethyl benzylammonium chloride and 10% dimethyl ethylbenzyl ammonium chloride

USES: Disinfecting greenhouse areas, pots, and tools Orchid Culture, Algae Control, Treat Seedlings & Bulbs and Other Ornamental Usage:

APPLICATION: Mix with water. Depending upon specific use. This product may be used as a spray, drench, soak or a dip.

PACKED: 12 x 8 oz. - #10501, 12 x Pt. - #10502

DITHANE M-45
• Labeled for many exotic ornamentals such as African Violets, Ferns & Dendrobium Orchids
• Preferred by many rose growers for Black Spot
• Commonly used in the commercial production of tomatoes, squash & melons

CONTAINS: 80% Mancozeb

USE ON: Many ornamentals, vegetables (potatoes, corn, squash, cucumber, melon, and papaya)

CONTROLS: leafspots, rust, botrytis, anthracnose, early and late blights, and downy mildew.

APPLICATION: Mix with water. Apply as a thorough cover spray.

PACKED: 12 x 6 oz. plastic bottle - #03900, 8 x 2 lb. tub - #03912

WETTABLE OR DUSTING SULFUR
• Controls rust of beans & brown rot of peaches
• Controls Powdery Mildew on many ornamentals
• Helps in the control of Rust Mite of Citrus (black fruit)

CONTAINS: 90% Sulfur

USE ON: Mangoes, peaches, strawberries, flowers, shrubs, lawns and many listed vegetables.

CONTROLS: Rust, powdery mildew, brown rot, leaf spots, mites and chiggers.

RATE: (varying) .25 - 2 lbs. per 1,000 sq. ft. or 1- 4 tablespoons per gallon APPLICATION: Dust thoroughly or mix with water and apply as a thorough cover spray.

PACKED: 10 x 5lb. bags - #12305, 10 x 5 lb. bags - #12305
THIOMYL SYSTEMIC FUNGICIDE
• Repackage of Cleary® 3336 WP
• Treats bulbs after digging for over-wintering
• Controls many stem, crown & root rots
• Controls many leaf spots such as Black Spot of Roses

CONTAINS: 50% Thiophanate Methyl Wettable Powder.
USE ON: Roses, many ornamentals, and bulbs as a bulb dip.
CONTROLS: Anthracnose, fusarium blight, black spot, botrytis and other diseases on ornamentals
RATE: Spray: 2.75 - 3 teaspoons per gal for most uses. See label for correct rate.
APPLICATION: Mix with water, apply as a full volume foliar spray.
PACKED: 6 x 2 oz. - #12900, 6 x 6 oz. - #12909

BASAGRAN® SEDGE CONTROL
• Controls nutsedge (nutgrass) & certain broadleaf weeds
• Can be used “over the top” on certain ornamentals
• Low use rate of .75 oz per 1,000 square feet
• Can be mixed with other weed killers
CONTAINS: 42% Bentazon
USE ON: Established turf, and certain ornamentals
CONTROLS: certain broadleaf weeds and sedges
RATE (for turf): 2 pints per acre or .75 oz. per 1,000 sq. ft. in 1 - 2 gallons of water.
APPLICATION: Basagran can be applied with a hose end or pump up type sprayer. Two applications may be necessary to control certain hard-to-control weeds like sedge. Use an oil concentrate like HERBI-OIL 83-17. BASAGRAN can be combined with other herbicides.
PACKED: 12 x 8oz. - #00721, 12 x Qt. - #01112, 4 x Gal. - #01114

2, 4 – D AMINE WEED KILLER
• Low, economical use rate of 1 to 4 pints per acre
• Controls many broadleaf weeds & woody plants
• Use in turf, pastures, rangeland, ditch banks, fences...
CONTAINS: 3.8 lbs. per gallon 2, 4-D acid equivalent liquid concentrate in a low volatile amine form.
USE ON: Certain grasses in lawns, parks, golf courses, and pastures; fenses, ditch banks, non-crop sites, small grains, and corn (pre and post emergent herbicide)
CONTROLS: Many broad-leaf weeds.
APPLICATION: Apply as a coarse low pressure spray, preferably with fan type nozzle.
PACKED: 12 x Pt. - #00112, 12 x Qt. - #00113, 4 x Gal. - #01114

ATRAZINE ST. AUGUSTINE WEED KILLER
• Kills many broadleaf weeds
• Also used in centipede grass
• Provides suppression of crabgrass
• Controls emerged weeds and weeds from seed
CONTAINS: 4% Atrazine
USE ON: St. Augustine and centipede lawn grasses.
CONTROLS: Many common grassy and broadleaf weeds.
RATE: 4.33 ounces per 500 sq. ft. per 1 gallon of spray
APPLICATION: Apply in 2 gallons of water to cover 1,000 sq. ft.
CAUTION: SPRAY TO ACCURATELY OBTAIN INDICATED COVERAGE WITHOUT OVERLAP. NOT RECOMMENDED FOR USE WITH HOSE-END SPRAYERS. Best results are obtained by application in early spring.
PACKED: 12 x Qt. - #00613, and 4 x Gal. - #00614

BRUSH KILLER
• Simple Directions for Use
• Kills vines and hard-to-control plants
• Prevents sprouting on stumps
• Same active ingredients as GARLON® & REMEDY®
CONTAINS: 8.8% Triclopyr®
USE ON: non-crop areas such as road right of ways, rangeland, pastures, and fence rows.
CONTROLS: Many varieties of brush (including brazilian pepper, trees, vines and stump treatments).
RATE: Foliage spray; 4-8 oz. per gallon. Stump treatment; Brush or spray undiluted product on freshly cut stump.
APPLICATION: Apply as a full volume spray to foliage, shoots, stems and bark.
PACKED: 12 x Pt. - #01112, 12 x Qt. - #01113, 4 x Gal. - #01114

COPPER SULFATE GRANULAR CRYSTALS
• Controls smelly, ugly algae in ponds & lakes
• Controls root growth in Sewer connections
CONTAINS: Copper Sulfate (Petahydrate) 99%, Copper as metallic 25.2%
USE ON: Ponds, sewer lines.
CONTROLS: Algae in ponds, plant root growth in sewer lines. RATE: Algae; 0.8 lbs. to 2.3 lbs. per acre foot of water.
Root Control; 4 treatments of .5 lbs. each.
APPLICATION: For ponds, dissolve and apply as a surface spray or place granule in cloth bag and drag behind boat until dissolved.
DO NOT simply throw granules on pond as this will not work. See label for other directions.
PACKED: 12 x 1 lb. cannister - #02921, 12 x 2.5 lb. cannister - #02922
CROSSBOW SPECIALTY HERBICIDE
- Controls most unwanted trees and brush
- Use on rangeland, grass pastures, non-crop areas

CONTAINS: 2,4-dichlorophenoxyacetic acid, butoxyethyl ester, Triclopyr BEE

APPLICATION: For spot applications use 4 to 6 fl. oz in 3 gallons of water. Spray to thoroughly wet all foliage. Application types and rates vary, consult product label for specifics.

PACKED: 12 x Qt. - #24863, 4 x Gl- #24864
2 x 2.5 Gl #24868

GRASS KILLER
- Controls annual & perennial grass
- Rapidly enters the targeted grass through its foliage and translocates throughout the plant
- Essentially all grasses are susceptible
- Controls annual & perennial grass weeds
- Spray over-the-top of ornamental plants

CONTAINS: 13% Sethoxydim

USE ON: Turf areas, most ornamentals, nonfood areas, and non-crop sites.

CONTROLS: Many perennial and annual grasses including Annual Ryegrass, Bahiagrass, Bermudagrass, Crabgrass, Goosegrass, & more.

RATE: 0.5 - 1.4 oz. per 1,000 sq. ft. or spot treat at 2 - 3 oz. per gallon of water.

APPLICATION: VANTAGE is best applied with a pump type sprayer. Avoid spray drift. VANTAGE may be used with BASAGRAN SEDGE CONTROL.

PACKED: 12 x 8 oz. - #13901, 12 x Pt. - #13902

SURFLAN A.S.
PRE-EMERGENT HERBICIDE
- Controls weed seeds
- Established warm season turf: Bahiagrass, Buffalograss, Bermudagrass, St. Augustine, Centipede, Zoysia

USE ON: Landscape ornamentals, non-cropland, non-bearing trees and vines, industrial sites, established warm season turf.

CONTROLS: A selective pre-emergence surface-applied herbicide for control of annual grasses and many broadleaf weeds.

RATE: Ornamentals; 1.5 - 3 oz. per 1,000 sq. ft. Turf; 1 - 1.5 oz. per 1000 sq. ft. (Do not reseed for 90 - 120 days following application).

APPLICATION: Safe to spray over-the-top of listed ornamentals in sufficient water to cover area. May also be tank mixed with Roundup (direct spray away from plants) or Vantage (Poast).

PACKED: 12 x 8 oz. - #12401, 12 x Qt. - #66823

WEED PRO GLYPHOSATE 41%
- Rainproof in 2 hours
- Same active ingredient as Roundup®
- Kills unwanted weeds & grasses, roots & all

CONTAINS: 41% Glyphosate

USE ON: patios, walkways, driveways and fences, in vegetable or flower gardens and around trees and shrubs and other landscaped areas, in large areas for lawn removal prior to replacing turfgrasses, and for weed control in garden plots prior to planting.

CONTROLS: Most Broadleaf and grass weeds.

RATE: Use 1.5 - 2.5 oz. (12 tablespoons) per gal. of water. To spot treat, spray evenly over 300 sq. ft.

APPLICATION: Apply with tank spray or Ortho Dial 'n Spray. Spray foliage until thoroughly wet, but not past the point of runoff.

CAUTION: Avoid allowing spray to drift onto desirable plants.

PACKED: 12 x Pt. - #05272, 12 x Qt. - #05273 4 x Gal. - #05274

LAWN WEED KILLER WITH TRIMEC
- For use on 9 turf types
- Controls a wide range of lawn weeds
- A patented combination of 3 proven weed killers
- Directions for use in conventional & hose end sprayers

CONTAINS: 5.30% Mecoprop, 3.05% 2,4-D, 1.29% Dicamba.

USE ON: Bermuda, Bahia, Blue grass, fescues, rye, Centipede, St. Augustine and Zoysiagrass.
(Note: Not for use on improved varieties in the South).

CONTROLS: Most broadleaf weeds.

RATE: 1 - 1.5 oz. per gallon to 400 sq. ft. for southern grasses. 1.5 oz. per gallon to 400 sq. ft. for Northern Grasses.

APPLICATION: Apply as a uniform spray with a fan nozzle on turf or follow the labeled directions for using a hoseend sprayer. CAUTION: Avoid spray drift on shrubs & trees. Spray to accurately obtain indicated coverage.

PACKED: 12 x Pt. - #13502, 12 x Qt. - #13503, 4 x Gal. - #13504
BORIC ACID
ROACH POWDER
• Kills Roaches, Ants & Silverfish indoors
• Packaged in a ready-to-use 12 ounce shaker container
• Use dry or in solution
CONTAINS: 100% Boric Acid
USE IN: Most indoor areas including homes, restaurants, schools, offices, warehouses, vehicles, boats, etc.
CONTROLS: Cockroaches, Ants, Silverfish.
RATE: For dry uses; apply liberally. Mop Solution; 1 cup per gallon.
APPLICATION: Apply where insects are normally found. Apply in closets, cracks and crevices, in walls, along and behind walls and in electrical switch boxes.
Packed: 12 x 12 oz. - #01000, 6 x 3 lb. - #01003

LAWNSTAR BIFENTHRIN GRANULAR INSECTICIDE
• Controls pest found above and below the lawn surface including chinch bugs and mole crickets
• Use as a spot treatment for fire ant mounds.
• Use around house foundations and flower gardens.
CONTAINS: 0.2% Bifenthrin
USES: Perimeters around homes, outdoor ornamental and flower gardens and on lawns.
CONTROLS: Many insects including ants, armyworms, centipedes, chiggers, chinch bugs, crickets, cutworms, earwigs, grasshoppers, millipedes, mole crickets, sod webworms, spiders and ticks.
RATE: 1.15 - 4.6 lbs. per 1,000 square feet or 1 tablespoon per fire ant mound
APPLICATION: Apply evenly by hand or with a spreader and water in.
Packed: 10 lb. bag - #00806, 20 lb bag - #00809, 25 lb. bag - #20687

CARBARYL 5% DUST
• Controls many insects in vegetable gardens & ornamentals
• Use in lawns for Fall armyworm & Sod webworm
CONTAINS: 5% Carbaryl Insecticide
USE ON: Most vegetables, lawns and ornamentals.
CONTROLS: Mexican bean beetles, armyworms, leafhoppers, grass hoppers, tomato fruitworms, flea beetles and corn earworms.
APPLICATION: For home gardens; dust plants thoroughly.
Packed: 12 x 1 lb. shaker canister - #10641

DIPEL® DUST
• Low toxicity to humans and animals
• Used by commercial organic growers
• Made from a bacteria that is toxic to certain pests
• Same active ingredient as Thuricide®
CONTAINS: Bacillus thuringiensis (Bt)
USE ON: Vegetable crops; broccoli, cabbage, cauliflower, celery, collards, cucumber, kale, lettuce, greens, tomatoes, turnips, tobacco and melons.
CONTROLS: Cabbage looper, imported cabbage worm, hornworms. Only controls listed insects.
RATE: 16 - 60 lbs. per acre.
APPLICATION: For home garden use, dust plants thoroughly. Can be used up until the day of harvest.
Packed: 12 x 4 lb. bag - #0374, 25 lb. bags - #0377

GRUBS AWAY SYSTEMIC INSECT CONTROL
• Controls grubs, mole crickets and listed insect larvae
• Suppresses chinch bugs
• Treats up to 6,400 sq. ft.
CONTAINS: 0.5% Imidaclopid
USE ON: Turfgrass and landscape plants
CONTROLS: Grubs, Billbugs, European Crane Fly, Annual Bluegrass Weevil and Mole Crickets. Suppresses chinch bugs if applied prior to the hatching of the first instar nymphs.
RATE: 1.4 lbs. - 1.8 lbs. per 1,000 sq. ft.
APPLICATION: Apply prior to egg hatch of the target pest, followed by sufficient irrigation or rainfall to move active ingredient through thatch.
Packed: 9 lb. bag - #05286, 30 lb. bag - #39130

GARDEN INSECT DUST
• Broad Spectrum Ready-To-Use Insecticide
• Controls many insect pests on vegetables & ornamentals
CONTAINS: 0.25% Permethrin
USE ON: Many ornamentals indoors and outdoors and home vegetable gardens.
CONTROLS: Many caterpillars, beetles and leafhoppers i.e. Japanese beetles, tent caterpillars, fall armyworms, flea beetles, and many more.
RATE: Dust lightly to cover both upper and lower leaf surfaces with a thin, even film of dust.
APPLICATION: Use a dust applicator.
Packed: 12 x 1 lb. plastic shaker canister - #05261,
**HOME PEST CONTROL SPRAY**
- Controls indoor pests for 60 days
- Labeled for use on dogs and livestock
- Controls insect pests in ornamental flower gardens

**CONTAINS:** 0.25% Permethrin

**USE ON:** Indoor surfaces, livestock, dogs, outdoors and ornamental flower gardens.

**CONTROLS:** Bed bugs, fleas, flies, lice, whitefly, aphids, lacebugs, leafminers, Japanese beetles, ants, thrips, armyworms, palmetto bugs, scorpions, millipedes, carpet beetles, centipedes, pillbugs, silverfish, spiders, crickets, weevils, rust red flour beetles, meal worms, mites and cockroaches.

**APPLICATION:** Ready to Use.

**PACKED:** 12 x 24 oz. - #05420, 4 x Gal. with applicator - #05414

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**MALATHION 50% E.C.**
- Broad Spectrum insecticide
- Controls insects on many ornamentals, fruit & vegetables
- Labeled for Mosquito Control

**CONTAINS:** 50% Malathion (4.4 lbs. per gal).

**USE ON:** Citrus, ornamentals, listed vegetables, listed fruit trees, strawberries and in outdoor areas.

**CONTROLS:** Aphids, scale, worms, Japanese beetle, horn flies, lice, ticks, fleas, bed bugs, thrip, leafminers, spider mites and mosquitos (use at 4.5 oz. per gallon in outdoor areas)

**RATE:** Foliar Sprays 1 - 4 teaspoons per gallon water. See label.

**APPLICATION:** As a full coverage foliar spray.

**PACKED:** 12 x 8 oz. - #07661, 12 x Pt. - #07662, 12 x Qt. - #07663, 1 x Gal. - #45774

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**MALATHION - OIL**

**CITRUS & ORNAMENTAL SPRAY**
- Now Formulated with Parafine Oil

**Two active ingredients**
**Use on Citrus, Avocados & certain outdoor Woody Ornamentals**
**Controls Scale, Mealybugs, Whitefly & Spider Mites**

**CONTAINS:** 5% Malathion, 75% Parafine - Mineral Oil.

**USE ON:** Citrus, avocados, woody ornamentals such as camellias, gardenias, ligustrum and ixora.

**CONTROLS:** Scale, white flies, spider mites and mealy bugs.

**RATE:** 2 to 2.5 tablespoons per gallon of water.

**APPLICATION:** As a cover spray or summer oil spray for citrus.

**PACKED:** 12 x 8 oz. - #08721, 12 x Pt. - #08722, 12 x Qt. - #07683, 4 x Gal. - #07684

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**TRIPLE ACTION NEEM OIL**

**Broad Spectrum Fungicide/ Insecticide/ Miticide**
- For use on ALL fruits, nuts, vegetables, herbs, & ornamentals
- Prevents & controls black spot on roses & powdery mildew
- Controls aphids, spider mites, scale, whiteflies & beetles
- Kills eggs, larvae & adult insects

**CONTAINS:** 70% Clarified Hydrophobic Extract of Neem Oil

**USE ON:** Indoor/Outdoor ornamental flowering plants, trees, shrubs, foliage, vegetables, fruits, nuts and landscapes

**CONTROLS:** As Fungicide - powdery mildew, black spot, downy mildew, anthracnose, rust, leaf spot, botrytis, needle rust, scab and flower, twig, tip blight, and alternaria.

As Insecticide/Miticide - aphids, spider mites, scale, whiteflies, beetles, leafrollers, and other insect pests.

**RATE:** 2 tablespoons (1 oz.) per gallon of water.

**APPLICATION:** Thoroughly mix solution and spray all plant surfaces (including undersides of leaves) until wet. Mix solution frequently as you spray.

**PACKED:** 12 x 8 oz. - #08611, 12 x Pt. - #08612

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**CONSERVE® - NATURALYTE INSECT CONTROL**

**Listed with OMRI**

**Organic Materials Review Institute**
- Controls caterpillars, thrips, leafminers, beetles & flies on many ornamentals, vegetables & fruits
- Controls caterpillars, fleas & fire ants in lawns

**CONTAINS:** 0.5% Spinosad

**USE ON:** Vegetables, ornamentals, and fruit trees.

**CONTROLS:** Fire ants, caterpillars, worms, leafminers, leafrollers, thrips, gall midges, leaf feeding beetles, fruit flies, colorodo potato beetle and corn earworms.

**APPLICATION:** Mix with water, use as a thorough cover spray.

**PACKED:** 12 x 8 oz. - #08611, 12 x Pt. - #08612

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**INSECTICIDES**
INSECTICIDES

**PERMETROL LAWN INSECTICIDE GRANULES**
- Provides contact & residual control for up to 4 weeks
- Economical, ready to use permethrin insect control
- Controls home invading pests
**CONTAINS:** 0.5% Permethrin on a granular base.
**USE ON:** Lawns and around house foundations
**CONTROLS:** Ants, armyworms, billbugs, centipedes, chinch bugs, cockroaches, crickets, cutworms, fire ants, flea beetles, fleas, grasshoppers, lawn moths, leafhoppers, scorpions, silverfish, Spiders, Sod Webworms and Ticks
**RATE:** Lawns; 2 - 3 lbs. per 1,000 sq. ft. Fire Ant Mounds; 1 cup per mound
**APPLICATION:** Spread evenly with spreader and water in.
**PACKED:** 12 x 1 lb. canister - #09431, 8 x 4 lb. bag - #09434, 10 lb. bag - #09436, 20 lb. bag - #09439

**PARAFINE HORTICULTURAL OIL**
- New formulation
- Use as a horticultural oil or a dormant oil
- Controls scale, white fly, mealy bugs & spider mites
- Use on ornamentals, apples, citrus & avocados
**CONTAINS:** 98% Mineral Oil, 2% Emulsifier
**USE ON:** Many woody ornamentals including palms, apples, citrus, avocados, mangos, roses and ivy, and on listed vegetables.
**CONTROLS:** Scales, white fly larvae, mealy bugs and spider mites.
**RATE:** Non-dormant uses; 1-3 tablespoons per gallon of water. Dormant uses; 4-8 tablespoons per gallon of water. Most other uses; 3 tablespoons per gallon of water. See label.
**APPLICATION:** Mix with water. Agitate while spraying. Apply as a thorough cover spray.
**PACKED:** 12 x Pt. - #09202, 12 x Qt. - #09203, 4 x Gal. - #09204

**NATURAL PYRETHRIN CONCENTRATE**
- Organic insecticide made from a relative of chrysanthemum
- Controls insects on vegetables, on ornamentals, indoors & on livestock
**CONTAINS:** 0.96% Pyrethrins and 9.6% Piperonyl Butoxide
**USE ON:** Many vegetables, ornamentals, livestock, pets, and in households & barns, as space spray, and to control mosquitoes outdoors
**CONTROLS:** On vegetables and ornamentals; aphids, whiteflies, beetles, and worms. Pets and livestock; fleas, mites, lice, flies, gnats, and mosquitoes. Households and other areas; ants, roaches, silverfish, spiders, and many others. Space Spray: mosquitoes, flies, wasps, and others.
**RATE:** Vegetables and ornamentals; 2/3 - 2 teaspoons per gal. See label for surface spray, space spray, mosquito control and livestock rates.
**APPLICATION:** As a thorough spray or dip.
**PACKED:** 12 x 8oz. - #10401

**PERMETROL LAWN INSECTICIDE**
- Controls many insect pests outdoors around buildings
- Use in ornamentals, fruit trees, vegetables & lawns
- Labeled for use on dogs & livestock
**CONTAINS:** 10% Permethrin
**USE ON:** Lawns, ornamentals, houseplants, ornamental trees, many vegetables, certain fruit trees (apples, peaches, pears, non-bearing citrus), outdoors surfaces, dogs and livestock.
**CONTROLS:** Ants, aphids, beetles, chinch bugs, crickets, earwigs, fleas, fungus gnats, grubs, leafrollers, mole crickets, scale, spider mites, thrips, whiteflies andworms.
**RATE:** Fruit Trees; 3 teaspoons per gallon Lawns; 3 - 7 teaspoons (.5 - 1.2 ozs) per 1,000 sq. ft. Ornamentals; 1-1/3 teaspoons per gallon or 1/3 teaspoons per quart. Outdoor surfaces (walls, screens); 6.5 oz. per gallon. Vegetables; 1 - 2 teaspoons per gallon
**APPLICATION:** Apply to full coverage.
**PACKED:** 12 x 8 oz. - #09451, 12 x Pt. - #09462, 12 x Qt. - #09453, 4 x Gal. - #09454
THURICIDE® BT CATERPILLER CONTROL
• New Formulation OMRI approved
• Low toxicity to humans and animals
• Used by Organic growers
• Made from a bacteria that is toxic to certain pests
• Same active ingredient as Dipel®
CONTAINS: Bacillus Thuringiensis in liquid form
USE ON: Vegetables, citrus, nuts, shrubs, trees, tobacco, and flowering plants.
CONTROLS: Controls lepidoptera larve: caterpillars and worms. i.e. cabbage looper, orange dog, tobacco hornworm, imported cabbageworm and rindworm.
RATE: 2 - 4 teaspoons per gallon.
APPLICATION: Mix with water, add spreader-sticker, use as a thorough cover spray.
PACKED: 12 x 8 oz. - #13021, 12 x Pt. - #13022.

CALCIUM NITRATE
• Excellent source of Calcium and nitrogen
• Prevents Calcium deficiency
CONTAINS: 15.5% Nitrogen, 19% Calcium - readily water soluble.
USE ON: Most vegetables and flowers.
FOR: Supplying nitrogen and calcium to growing crops. Particularly useful as side dressing.
RATE: One cup per 50 feet of row or one tsp. per plant
APPLICATION: Apply over root zone but not too close to stem.
PACKED: 10 x 5lb. bag - #01405

CHELATED CITRUS NUTRITIONAL SPRAY
• Corrects & prevents deficiencies that cause yellowing
• Contains 5 balanced essential nutrients including zinc
• For use of all ornamentals and fruits trees
CONTAINS: Iron 1.2%, Zinc 1.7%, Manganese 1.2%, Magnesium 1.0% and Sulfur 4.1%.
USE ON: Citrus, avocados, mangoes and other tropical fruits.
CONTROLS: Most common minor element deficiencies.
RATE: 1-2 tablespoons per gallon of spray.
APPLICATION: In Winter for normal preventative spray. Apply as a thorough cover spray to run off.
PACKED: 12 x Pt. - #01902, 4 x Gal. - #01904.
Note: See University of Florida publication #HS876 “Citrus Problems in the Home Landscape”

CHELATED GENERAL PURPOSE FLOWER & GARDEN NUTRITIONAL SPRAY
• Can be used on all plants including lawns
• Contains 6 important nutrients including iron
• Prevents & corrects deficiencies that cause yellowing
CONTAINS: Iron 2.75%, Manganese 1.00%, Zinc 0.50%, Copper 0.25%, Magnesium 0.50%, and Sulfur 3.8%.
USE ON: Flowers, shrubs, trees, vegetables and lawns
CONTROLS: Minor element deficiencies, yellowing of foliage, etc.
NOTE: Deficiency symptoms can be caused by improper soil pH.
RATE: Foliar: 1 tablespoon per gallon of water drench: 1 oz. per 100 sq. ft. Lawns: 1 pint per 1,000 sq. ft.
APPLICATION: Mix with water and apply as a drenching spray.
PACKED: 12 x Pt. - #01932, 4 x Gal. - #01934

ALUMINUM SULFATE
• Great for Hydrangeas
• Acidifies Soil (lowers pH), corrects high alkalinity
CONTAINS: Fertilizer grade Aluminum Sulfate, as Metallic 9.0%. Not for spray application.
USE ON: Acid loving shrubs like rhododendrons, hydrangeas, blueberries, dogwoods, holly, gardenias, camellias, and azaleas.
CORRECTS: Excess alkalinity in the soil.
RATE: For large shrubs use 1 lb. per 3 ft. of height. For Trees, use 1 lb. per inch of trunk diameter. For small shrubs, use 5 lbs. per 100 sq. ft.
APPLICATION: Broadcast evenly, wash off foliage and water.
PACKED: 10 x 5 lb. bag - #00155

See STOP BLOSSOM-END ROT of TOMATOES on page 12 under Miscellaneous
CHELATED LIQUID IRON
• Corrects Iron deficiency in flowers, vegetables, shrubs & trees.
• Also, use in the lawns for a deep, rich green color.
CONTAINS: Iron 5%.
USE ON: Flowers, shrubs, trees, vegetables and lawns.
CONTROLS: Iron deficiency (yellowing foliage)
RATE: Foliar; 1 tablespoon per gallon.
Soil Drench; 1 oz. per 100 sq. ft. Lawns; 1 pint per 1000 sq. ft.
APPLICATION: Mix with water. Apply as a drenching spray.
PACKED: 12 x Pt. - #01952, 4 x Gal. - #01954

CHELATED PALM NUTRITIONAL
• Contains 4 nutrients for palms, including Manganese
• Prevent deficiency that may cause yellowing, browning, curling & permanent injury in palms
CONTAINS: 2.5% Manganese, 1.5% Magnesium, and 1.0% Iron.
USE ON: Palms, and other ornamentals.
CONTROLS: Nutritional deficiencies in palms.
RATE: 1 - 2 tablespoons per gallon.
APPLICATION: Apply as a thorough cover spray to run off. Try to spray directly into heart.
PACKED: 12 x Pt. - #01972
4 x Gal. - #01974

Note:
For help on nutritional deficiencies of palms refer to: University of Florida Extension Publication (IFAS) “Care and Maintenance of Landscape Palms in South” or “Palm Nutrition Guide”

CONTROLLED - RELEASE FERTILIZER 14-14-14
• Controlled Release Fertilizer
• Continuous metering of nutrients for up to 4 months
USE ON: Potted plants, hanging baskets, flower beds and vegetable gardens.
RATE: Soil; mix .25 - .5 cups per cubic foot. Bedding plants; .75 - 1 cup per 10 sq. ft. Pot culture; 4 in. - .5 teaspoons, 5 in. - 1 teaspoon and 6 in. - 1.5 teaspoon
APPLICATION: Mix thoroughly with soil mix. Surface application; mix in soil to 1” deep.
PACKED: 12 x 1 lb. zipper pouch - #02701, 10 x 5 lb. bag - #02705, 20 lb. bag - #02709

LONG LASTING CONTROLLED RELEASE FERTILIZER 18-6-12
• Contains Scotts Osmocote® Controlled Release Fertilizer
• Continuous metering of nutrients for up to 9 months
CONTAINS: Osmocote® 18-6-12
USE ON: Potted plants, hanging baskets, flower beds and vegetable gardens.
RATE: Soil; mix 6 to 8 ounces per cubic ft. Plant beds; 1.5 - 3 cups per 10 sq. ft. Pot Culture; 4" - .75 teaspoon, 5" - 1.5 teaspoon, 6"- 2 teaspoon.
APPLICATION: Mix thoroughly with soil mix. Surface application; apply to soil around plant.
PACKED: 12 x 1 lb. Plastic Bottle - #02731, 10 x 5 lb. bag - #02735, 20 lb. bags - #02739

ESSENTIAL MINOR ELEMENTS
Granular Formulation
• Contains 7 minor elements, high in Magnesium and Iron
• Corrects minor element deficiencies
• No mixing/ No spraying - use as a dry fertilizer
CONTAINS: Magnesium 8%, Manganese 2%, Iron 5%, Sulfur 8%, Copper .25%, Zinc 0.5%, Boron .03%.
USE ON: Shrubs, trees, lawns, flowers and vegetables
FOR: The correction or prevention of minor element deficiencies.
RATE: Gardens - Preventative; .25 - .5 cup per 10 sq. ft. or 1.25 - 2.5 lbs. (2.5 - 5 cups) per 100 sq. ft. Curative; 1 cup per 10 sq. ft. or 5 lbs. (10 cups) per 100 sq. ft. Turf; 1 lb. (2 cups) per 100 sq. ft. or 10 lbs. per 1,000 sq. ft.
APPLICATION: Apply dry and water in thoroughly.
PACKED: 12 x 1 lb. bottle - #04601, 10 x 5 lb. bag - #04605, 25 lb. bag - #04607

IRON GRANULES
• No mixing/No spraying - use as a granular fertilizer
• Correct Iron deficiency in acid loving & tropical plants
• Acidifies soil, lowers pH, and corrects high alkalinity
CONTAINS: 30% Iron from Ferrous Iron Sulfate.
USE ON: Lawns, shrubs, trees and gardens.
FOR: Correction and prevention of iron deficiency and high pH. Iron deficiency appears as intense yellowing of young growth.
RATE: Dry application; .25 lbs. per 100 sq. ft. (2 lbs. per 1,000 sq. ft.) To reduce pH, .5 - 1 lbs. per 100 sq. ft.
APPLICATION: Spread over treatment area and water in.
PACKED: 10 x 5 lb. bag - #06005, 25 lb. bag - #06007
KELP GREEN
• All Natural Fertilizer
• Derived from seaweed from Ireland and Oceanic fish
• Safe to use for all lawn and garden applications
• High in all natural macro and micro nutrients, antioxidants, vitamins, amino acids, hormones and minerals.

USE ON: All plants, including annuals, roses, berries, vegetables, herbs, shrubs, trees and turf.
RATE: 6 to 16 ounces for turf, 2 to 3 ounces for all plants.
PACKED: 12 x 1 Quart - #06403

MAGNESIUM SULFATE
• No mixing/ No spraying - use as a dry fertilizer
• Corrects Magnesium deficiency in shrubs & trees
• Acidify soils with less risk of staining

CONTAINS: Fertilizer grade Magnesium Sulfate, Magnesium as Metallic 14.0%. Not for spray application.

USE ON: Citrus, palms, trees, shrubs, annuals and turf.

CONTROLS: Magnesium deficiency - yellowing between the veins of older leaves on plants. On palms, (especially date palms) this deficiency appears as yellowing of older leaflets while the center of the palm blade remains green. Eventually the tips of the older leaves will brown.

RATE: 1 - 2 lbs. per 100 sq. ft. or .5 - 1 lb. per 5 ft. of tree spread.
APPLICATION: Spread over treatment area and water-in.
PACKED: 10 x 5 lb. bag - #07405, 25lb. bag - #07407

MANGANESE SULFATE
• No mixing/ No spraying - use as a dry fertilizer
• Corrects Manganese deficiency in many plants including queen palms & sago palms

CONTAINS: Manganese as metallic 27.0%.

USE ON: Palms, trees, shrubs, vegetables and other plants.

CONTROLS: Manganese deficiency, Leaves will have dark green veins with yellow areas between veins. In palms, this deficiency will cause “frizzle top”. New growth will be small and malformed.

RATE: Soil; 1/3 - 2/3 cup per 100 sq. ft. Large Palms; 3 lbs. per tree.
APPLICATION: Broadcast evenly over area to be treated.
PACKED: 10 x 5 lb. bag - #07905, 25 lb. bag - #07907

PLANT STARTER SOLUBLE FERTILIZER 12-48-8
• High in Phosphorous for more roots & flowers
• Great for transplanting & bedding plants

CONTAINS: 12% Nitrogen, 48% Phosphorus (P₂O₅), 8% Potassium (K₂O), and a compliment of minor elements.

USE ON: Transplanted tobacco, most vegetables or any crop where high phosphate is needed.

RATE: For a transplant solution or to drench, mix at 2 tablespoons per gallon. For a spray, mix at 1.5 tablespoons per gallon.
APPLICATION: Transplant solution use .5 to 1 pint per plant or 1 pint per 4 ft. of row.
PACKED: 16 x 3 lb. - #09803
Also available in a 25 lb. bag

PLUG FAST 12-12-6
• Contains slow release nitrogen
• Use in the hole of new grass plugs
• High in Phosphorous to kick start new roots

CONTAINS: 12% Nitrogen, 12% Phosphorus (P₂O₅), 6% Potash (K₂O), Iron 1%. 5.6% Nitrogen is slow release.

USE: Formulated for planting lawns by plugging.
RATE: 1 teaspoon per plug planted.
5 lb = 20 trays
APPLICATION: Sprinkle in plug hole under plug as planted.
PACKED: 10 x 5 lb. bag - #10005

SOIL ACIDIFIER
• No dust, hard, uniform pellets

CONTAINS: 90% Sulfur

USE ON: Lawns, shrubs, trees and before planting vegetables and flowers.

FOR: The correction of high pH of soils.
RATE: Use 10 to 15 lbs. per 1,000 sq. ft. (1 to 1.5 lbs. per 100 sq. ft.) to reduce pH one unit. Do not overdose, have pH checked before making a second application.
APPLICATION: Spread evenly over area and water in thoroughly.
PACKED: 10 x 5 lb. bag - #11105
FERTILIZERS

**20-20-20 POWERPAK WATER SOLUBLE FERTILIZER**
- Very popular, high quality & cost effective formulation
- Contains chelated minor elements
CONTAINS: 20% Nitrogen, 20% Phosphorus (P₂O₅), 20% Potassium (K₂O) plus Chelated Minor Elements.
USE ON: Flowers, roses, vegetables, shrubs, trees, lawns and houseplants
RATE: Spray at 2 teaspoons or drench at 2 tablespoons per gallon. Lawns; 1 pound per 1,000 square feet in 10 gallons of water.
Packed: 12 x 1 lb. zipper pouch - #11301, 10 x 5 lb. poly bag - #11305

**SULFATE OF POTASH 0-0-50**
- Corrects Potassium deficiency in avocado, beans, corn, cherries, citrus, grapes, palms & roses
- Strengthens plants, making them less susceptible to disease & adverse conditions such as winter
CONTAINS: Granular Grade Potassium Sulfate. Not for spraying.
USE ON: Vegetables, flowers, shrubs and lawns.
FOR Use in potassium low soils. Helps plants form healthier, stronger roots, stems, and tubers.
RATE: .5 lb. per 100 sq. ft.
APPLICATION: Spread over treatment area and water in.
Packed: 10 x 5 lb. bag - #12255

**TRIPLE SUPER PHOSPHATE 0-45-0 BULB BOOSTER**
- Enhances stem strength and flower formation and set
CONTAINS: Granular grade Phosphate 45%. Not for spraying.
USE ON: Vegetables, fruit trees, bulbs, flowers and shrubs
PROVIDES: Phosphorous for increased rooting and blooming.
RATE: At planting; Use 5 lbs. per 200 sq. ft. Vegetables; 1 lb. per 50 foot of row. Roses or large shrubs; 1/4 cup per plant. Fruit Trees; 1 cup per inch of trunk diameter. Top dress; .25 - .5 cup per 20 square feet
APPLICATION: Spread over area and water in thoroughly or incorporate into planting bed.
Packed: 10 x 5 lb. bag - #12355

**ZINC SULFATE**
- Corrects blind nut disorder in Pecans
- Corrects zinc deficiency (mottleleaf) in avocado, beans, citrus, corn, peaches & nectarines
CONTAINS: Zinc as metallic 31%.
USE ON: Trees, shrubs, berry bushes, and fruit trees.
CONTROLS: Zinc deficiency, rosette on pecans.
RATE: Apply dry at 1.5 lbs. per inch of trunk diameter.
APPLICATION: Broadcast evenly over area to be treated and water
Packed: 10 x 5 lb. bag - #14955

**30-10-10 MAX ACID WATER SOLUBLE FERTILIZER**
- Great for acid loving evergreens & tropicales
- Contains chelated minor elements
- Promotes deep rich green color
CONTAINS: 30% Nitrogen, 10% Phosphorus (P₂O₅), 10% Potassium (K₂O) plus Chelated Minor Elements.
USE ON: Acid-loving evergreen shrubs, trees, tropical plants
RATE: Spray at 2 teaspoons or drench at 2 tablespoons per gallon. Lawns - 1 pound per 1,000 square feet in 10 gallons of water.
Packed: 12 x 1 lb. zipper pouch with spoon - #08101

**10-30-20 START, ROOT AND BLOOM WATER SOLUBLE FERTILIZER**
- High in Phosphorous for more roots & flowers
- Great for transplanting & bedding plants
CONTAINS: 10% Nitrogen, 30% Phosphorus (P₂O₅), 20% Potassium (K₂O) plus Chelated Minor Elements.
USE ON: Flowers, roses, houseplants, vegetables, shrubs and trees
RATE: For a transplanting solution, mix 2 tablespoons per gallon of water. Use .5 - 1 pint of solution per plant. For a foliar feeding, use 1 tablespoonful per gallon of water. Repeat every 1 - 2 weeks or as needed.
Packed: 12 x 1 lb. zipper bag w/spoon - #12111
**FERTILIZERS**

**10-10-10 ALL PURPOSE FERTILIZER**
- Uniform, homogenous granular formulation
- **CONTAINS:** 10% Nitrogen, 10% Phosphorus (P₂O₅), 10% Potassium (K₂O) plus minor elements
- **SUGGESTED USES:** Vegetable gardens & flowerbeds; 1 cup per 25 sq. ft; Roses & large shrubs; 2 - 2.5 cup per 4 ft. of height, Fruit trees; 2-4 cups per tree.
- **APPLICATION:** Broadcast evenly over area and water in.
- **PACKED:** 10 x 5 lb. poly bag - #14975

**HERBI - OIL 83-17**
- Combines a soluble herbicide oil for penetration & a surfactant for wetting
- **CONTAINS:** Paraffin-based petroleum oils and a blend of oil soluble surfactants.
- **USE ON:** Weeds with herbicide according to the label. Use with herbicides like Vantage® Herbicide and Atrazine Herbicide.
- **FOR:** Increasing effectiveness of herbicides.
- **RATE:** 1% Emulsion or 1.25 oz. per gallon, 1 pint in 12.5 gallons.
- **APPLICATION:** Apply as a foliar spray with herbicides according to their label.
- **PACKED:** 12 x Pt. - #05302

**SPREADER STICKER**
- Combines two spray adjuvants in one product
- **CONTAINS:** Modified phthalic glycerol alkyd resin, Octyl phenoxoy polyethoxy ethanol and Isopropanol
- **USE:** Can be used with almost all insecticide, fungicide, herbicide and nutritional sprays on Ornamentals and Vegetables. Aids in spreading of spray material on waxy leaved plants such as Roses and Cabbage. Helps prevent spray material from weathering due to rain and dew. Increases effectiveness of insecticide and fungicide sprays.
- **RATE:** Use 1 tablespoon per gal of spray.
- **PACKED:** 12 x 8 oz. #12101, 12 x Pt #12102, 4 x Gal. - #65724

**SURFACTANT FOR HERBICIDES**
- A wetting agent that increase coverage & penetration of any herbicide
- **CONTAINS:** 80% non-ionic Surfactant.
- **USE:** With almost all herbicide sprays including Trimec®, Atrazine, Brush Killer and 2, 4-D Amine
- **FOR:** Reducing the surface tension of water to insure more uniform coverage and penetration of weed killers.
- **RATE:** 1 - 2 teaspoons per gallon of water (1 pint per 100 gallons).
- **PACKED:** 12 x Pt. - #12202, 4 x Gal. - #66754

**BLACK SNAKE SULFUR**
- **PACKED:** 10 x 5lb. - #00825

**STUMP REMOVER**
- Increases decomposition of wood by balancing the ratio of carbon & nitrogen which increases activity from bacteria
- **CONTAINS:** Potassium Nitrate
- **FOR:** Speeding the decay of stumps
- **RATE:** .25 lb. for small stumps, 1 lb. for large stumps
- **APPLICATION:** Drill top and sides of the stump. Add Stump Remover and soak with water.
- **PACKED:** 12 x 1 lb. plastic bottle - #12160

**STOP BLOSSOM-END ROT of TOMATOES**
- Prevents tomatoes blossom-end rot due to Calcium deficiency
- **CONTAINS:** 31% or 3 lbs. Calcium Chloride per gallon.
- **CONTROLS:** Blossom-end rot/calcium deficiency
- **NOTE:** On future crops, proper liming of soil or use of Calcium Nitrate will reduce problem.
- **RATE:** 2 tablespoons (1 oz.) per gallon.
- **APPLICATION:** In water as thorough cover spray. Compatible with most insecticides and fungicides.
- **PACKED:** 12 x Pt. - #00902, 12 x Qt. - #00903

**MISCELLANEOUS**

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- Combines a soluble herbicide oil for penetration & a surfactant for wetting
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- **RATE:** Use 1 tablespoon per gal of spray.
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- **NOTE:** On future crops, proper liming of soil or use of Calcium Nitrate will reduce problem.
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**BLACK SNAKE SULFUR**
- **PACKED:** 10 x 5lb. - #00825
TABLE OF WEIGHTS, MEASURES & DILUTIONS

WEIGHTS:
28.35 Grams = 1 Ounce
16 Ounces = 1 Pound = 453.6 Grams
1 Kilogram = 1000 Grams = 2.205 Pounds
1 Gallon water = 3.38 Liters = 3.8 Kilogram
1 Cu. Ft. water = 62.4 Pounds = 28.3 Kilogram
1 Ton = 2,000 Pounds = 907 Kilograms

VOLUME AND LIQUID MEASURE
3 Teaspoons = 1 Tbsp. (Tablespoons) = 14.8 ml (Millilitres)
2 Tablespoons = 1 Fl. oz. (Fluid ounces) = 29.6 ml
8 Fluid ounces = 16 Tablespoons = 1 Cup = 236.6 ml
2 Cups = 32 Tbs. = 16 Fl. oz. = 1 Pint = 473.1 ml
2 Pints = 64 Tbs. = 32 Fl. oz. = 1 Quart = 946.2 ml
1 Litre = 1000 ml = 0.2642 Gallons = 33.81 Ounces
1 Gallon = 4 Quarts = 128 Fl. oz. = 256 Tbs. = 3785 ml

LENGTH AND LAND MEASURE
1 inch = 2.54 cm (centimeters)
100 cm = 1 Meter = 3.281 Feet
1 mile = 5,280 Feet = 1,609 Kilometers
43,560 square feet = 1 Acre
1 Acre = 0.4047 Hectare

USEFUL FORMULAS
Area of a Rect. or Square A = length x width
Area of a Circle A = 3.14 x Radius squared
Circumference of a Circle C = Diameter x 3.14
Diameter of a Circle D = Distance from side to side
Radius of a Circle R = 1/2 of Diameter
Acre Feet of a Pond AF = Length (ft.) x Width (ft.) x Avg. Depth (ft.)
(approx.) 43,560

MEDIA VOLUME EQUIVALENTS
Container Size No. Per Cubic Yd.
2 1/4 inch 8,140
3 inch 3,300
4 inch 1,210
4 1/2 inch 950
1 Gallon 225
3 Gallon 120
5 Gallon 46
15 Gallon 14

EQUIVALENT QUANTITIES OF DRY MATERIALS (WETTABLe POWDERS)
FOR VARIOUS QUANTITIES OF WATER:

<table>
<thead>
<tr>
<th>WATER</th>
<th>QUANTITY OF DRY MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 gal.</td>
<td>1 lb.</td>
</tr>
<tr>
<td>5 gal.</td>
<td>0.8 oz.</td>
</tr>
<tr>
<td>1 gal.</td>
<td>1.5 tsp.</td>
</tr>
</tbody>
</table>

NOTE: Wettable pesticide materials vary considerably in density. Therefore the teaspoonful (tsp.) and tablespoonful (tbsp.) measurements in this table are not exact dosage by weight but are within the bounds of safety and efficiency for mixing small amount of spray.

EQUIVALENT QUANTITIES OF LIQUID MATERIALS (EMULSION, CONCENTRATES, ETC.) FOR VARIOUS QUANTITIES OF WATER:

<table>
<thead>
<tr>
<th>WATER</th>
<th>QUANTITY OF LIQUID MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 gal.</td>
<td>1/2 pt.</td>
</tr>
<tr>
<td>5 gal.</td>
<td>1 tbs.</td>
</tr>
<tr>
<td>1 gal.</td>
<td>1/2 tsp.</td>
</tr>
</tbody>
</table>

NOTE: These are approximate equivalents.