

# AGGRAND®

## The Gardening Guide



**A**GGRAND products work by stimulating the biological activity in the soil to provide a continuous release of nutrients as the plants need them. AGGRAND products are useful during soil preparation, planting, transplanting and plant growth. In addition to the macronutrients Nitrogen, Phosphorus and Potassium (N-P-K), AGGRAND products contain micronutrients, plant growth hormones, chelating agents and vitamins that provide a balanced nutritional program for plants and the creatures in the soil.

This guide shows first-time AGGRAND users and veterans alike how to get the most out of the products.

AGGRAND Technical Service Department is available at 715-399-6419. Dedicated personnel work with clients to develop and fine tune their farming and gardening practices according to their specific needs.

AGGRAND recommends a soil analysis before determining a fertilization program. Soil Analysis Kits (G1374) are available from AGGRAND.





## Fertilizing Bedding Plants

For commercial applications, AGGRAND Natural Fertilizer (4-3-3) is applied to the soil at a 200:1 (water to fertilizer) ratio through a standard injection system when plants reach two to three true leaves. The ratio can be decreased to 100:1 for more demanding plant types as the growth rate increases. AGGRAND Natural Fertilizer also may be diluted in a watering can to 1 to 3 ounces per gallon of water (higher rates as growth increases relative to crop demands).

**Soil applications:** AGGRAND Natural Fertilizer should be applied at 10- to 14-day intervals (apply more frequently when soilless mixes are used). Every four weeks, leach the salts from the media by flushing the containers with fresh water. After leaching, fertilize with AGGRAND Natural Fertilizer. Additional calcium, phosphorus and potassium may be needed at planting. Mix in 2 to 3 ounces of AGGRAND Natural Liquid Bonemeal Bonemeal (NBM) and 1 to 2 ounces AGGRAND Natural Kelp and Sulfate of Potash Kelp (NKP) with the Natural Fertilizer to provide more nutrients.

**Foliar applications:** A fine mist can be applied to bedding plants for additional uptake of nutrients. Apply 1 to 2 ounces of AGGRAND fertilizer per gallon of water at 14- to 21-day intervals after the plants reach three to four true leaves.

## Fertilizing Transplants

AGGRAND Natural Fertilizer can be used for watering in small transplants. Shrubs and trees can be soaked overnight in a bucket of AGGRAND Natural Fertilizer or Natural Kelp and Sulfate of Potash before transplanting. Use a mixture of 1 ounce per gallon for soaking; 2 to 3 ounces per gallon of water for watering in transplants. Add 1 to 2 ounces of AGGRAND Natural Liquid Bonemeal and 1/2 to 1 ounce of AGGRAND Natural Kelp and Sulfate of Potash to the solution to increase phosphorus and potassium availability when watering in the transplants to aid long-term root development.

- Do not transplant during the heat of the day to avoid root desiccation (drying out).
- Cloudy weather is the best time to transplant.
- Keep soil moist until plant root systems become well-established.

## Foliar Applications

Foliar feeding is an efficient way to provide nutrients during periods of peak nutrient demands, and in situations where the soil pH level creates a nutrient deficiency.

Foliar feeding is an efficient way to provide nutrients during periods of peak nutrient demands, and in situations where the soil pH level creates a nutrient deficiency, without sacrificing performance. AGGRAND Natural Fertilizer and AGGRAND Natural Kelp and Sulfate of Potash contain concentrated kelp extract and are especially effective as foliar sprays. Kelp provides a wide array of plant nutrients, chelating agents and plant hormones. It increases resistance to extremes of drought, heat and cold in vegetables and flowers.

Growers typically use one of two methods for foliar applications.

- Calendar- based approach: Feeding begins on a certain date and continues at set intervals throughout the growing season.
- Development-based approach: Developmental stages (i.e. bud formation, first bloom, fruit set, etc.) are the cue for application.

When foliar feeding, apply enough fertilizer solution to wet the foliage.

Increase the effectiveness of foliar applications by raising the fertilizer solution pH to 7.0 to promote vegetative growth and 6.0 to promote flowering and fruit formation. After mixing the fertilizer with water, test the pH with litmus paper. Add baking soda or hydrated lime one-half teaspoon at a time to raise the pH to the specified level or add apple cider vinegar 1 teaspoon at a time to lower the pH to the specified level. Adding a surfactant (spreader-sticker) to the spray mix also increases the effectiveness of foliar applications. Add 2 to 4 tablespoons of fertilizer to each gallon of spray mix and keep well-agitated.

Do not apply AGGRAND fertilizers in direct sunlight or immediately before or after rainfall or irrigation.

## Deep Root Applications

Feeding below the root zone of the grass effectively provides nutrients to trees and shrubs. The ideal fertilizer for deep-root feeding is a liquid, low-salt product containing chelated macro- and micronutrients that releases slowly into the root zone.

Deep-root applications involve penetrating the root zone around the drip line of the tree or shrub (the feeder roots form a circle 2 feet to 4 feet wide around the drip line). Several application methods are used for deep-root feeding.

- Drill a number of holes in the ground 6 inches to 12 inches deep and pour the fertilizer into them.
- Rototill around the drip line deep enough (2 inches to 3 inches) to break up the sod but not disturb many of the tree's or shrub's roots, then use a soaker hose to apply the fertilizer.
- Apply the fertilizer without any previous tillage. A longer time must be allowed to effectively penetrate the root zone.
- Push a hollow tree spike down into the root zone and inject the fertilizer through the spike. It may be impractical to use this method in highly compacted soils; in this situation, drill holes or use tillage.

Trees and shrubs are fertilized in early spring or in the fall. When performing deep-root feeding by injection or through bored holes on trees and shrubs, use a grid pattern with points every 2 or 3 feet, starting at least a foot away from the base of the tree and extending 1 or 2 feet outside the drip line.

Apply AGGRAND Natural Fertilizer at 4 ounces to 32 ounces per tree. The ratio of water to fertilizer is 4 ounces of fertilizer to 1 gallon of water for hand watering down to one-half ounce per gallon for injection and soaker hoses. Younger trees and shrubs, and those in sandy soils, need half this rate applied both spring and fall.

AGGRAND Natural Liquid Bonemeal and Natural Kelp and Sulfate of Potash may be mixed with AGGRAND Natural Fertilizer to provide additional calcium, phosphorus and potassium. Apply 2 ounces to 16 ounces of bonemeal and 1 ounce to 8 ounces of the kelp product along with the Natural Fertilizer to supply additional nutrients.

## Soil Applications

Combining fall tillage with a fertilizer application helps break down crop residue and provides not only readily available nutrients from the fertilizer, but helps fuel decomposition of organic matter to release more nutrient-availability in the soil by the next year.

Applying fertilizer with spring tillage provides some readily available nutrients to the soil, but does not provide the benefits of decomposed organic matter. Ideally, gardens should be tilled in the spring and fall.

Regardless, fertilizer should be applied at planting for optimum results. All three of the AGGRAND liquid fertilizers can be applied in spring, fall and at planting. A soil test of the garden area helps determine the most useful fertilizer combination. For most gardens, 1 quart each of the AGGRAND products tilled into 1,000 to 2,000 square feet of garden is sufficient.

Using AGGRAND products during spring soil preparation and fall tillage is straightforward. In spring, spray broadcast AGGRAND products before the final trip over the garden and allow them to dry before tilling in the fertilizer. In the fall, the soil should be lightly tilled and the fertilizer applied before the final pass with the tiller.

AGGRAND fertilizers also are ideal for banding, or applying in a trench near the seed.

- Dig a trench slightly to one side and under where the seed will be planted (1 inch to 2 inches below and 2 inches to 4 inches to the side of the seeds).
- Dribble the fertilizer, mixed with water, into the trench and cover to form a furrow next to it for the seed.

Finally, fertilizer is applied to some crops by broadcasting it onto the seedbed before or after planting. Following are some guidelines for applying fertilizer during critical development stages on various crops.

AGGRAND products also may be applied on a calendar-based approach (i.e. every week, bi-weekly, etc.).

Rates given for soil applications are for monthly fertilizations. When fertilizing more often reduce the concentration of the mix accordingly.

## Root Crops

(i.e. carrots, beets, turnips)

- 1st application:** Broadcast 2-3 oz. 4-3-3, 2-3 oz. Bonemeal, and 1-2 oz. 0-0-8 in 1 gal. of water on 100 sq. ft. after planting.
- 2nd application:** Foliar feed 4-6 weeks after emergence with 2 oz. Natural Fertilizer in 1 gal. of water.
- 3rd application:** Repeat foliar application 3-4 weeks later.
- Soil applications:** Use 2-3 oz. Natural Fertilizer, 2-3 oz. Liquid Lime, and 1-2 oz. Kelp in 1 gal. of water on 10-20 ft. of row or 30-100 sq. ft.

## Tubers and Tuberous Root Crops

(i.e. potato, sweet potato, yam)

- 1st application:** Band 3-4 oz. Natural Fertilizer, 2-3 oz. Bonemeal, and 1-2 oz. Kelp in 1 gal. of water on 10-20 ft. of row during planting.
- 2nd application:** Foliar feed 2 weeks after emergence with 2-3 oz. Natural Fertilizer and 1-2 oz. Liquid Lime in 1 gal. of water.
- 3rd application:** Repeat 2nd application 2 weeks later (for baby red potatoes use an additional application 4 weeks later).
- 4th application:** Repeat foliar application 6 weeks after 3rd application.
- Soil application:** Use 2-3 oz. Natural Fertilizer, 2-3 oz. Liquid Lime, and 1-2 oz. Kelp in 1 gal. of water on 10-15 ft. of row.

## Leaf Crops

(i.e. lettuce, celery, spinach)

- 1st application:** Band 3-4 oz. Natural Fertilizer and 1-2 oz. Kelp in 1 gal. of water on 10-20 ft. of row or 30-60 sq. ft. during planting.
- 2nd application:** Foliar feed 2-3 weeks after transplanting with 2 oz. Natural Fertilizer in one gal. of water.
- 3rd application:** Repeat 2nd application every 3-4 weeks until harvest.
- Soil applications:** Use 2-3 oz. Natural Fertilizer and 2-3 oz. Liquid Lime in 1 gal. of water on 15-20 ft. of row or 45-60 sq. ft.

## Cole Crops

(i.e. cabbage, broccoli, cauliflower)

- 1st application:** Broadcast 3-4 oz. Natural Fertilizer, in 1 gal. of water on 100 sq. ft. before final seedbed application.
- 2nd application:** Foliar feed 2-3 weeks after transplanting with 2 oz. Natural Fertilizer in one gal. of water.
- 3rd application:** Repeat foliar feed when plants begin to head.
- Soil applications:** Use 2-3 oz. Natural Fertilizer, 2-3 oz. Liquid Lime per gal. of water on 5-10 sq. ft. of row.

## Solanaceous Crops

(i.e. tomato, pepper, eggplant)

- 1st application:** Band 3-4 oz. Natural Fertilizer, 3-4 oz. Bonemeal, and 1-2 oz. Kelp in 1 gal. of water on 10-20 ft. of row before transplanting.
- 2nd application:** Foliar feed at 1st bloom with 2 oz. Natural Fertilizer and 1-2 oz. Bonemeal in 1 gal. of water.
- 3rd application:** Repeat 2nd application at full bloom. Substitute Liquid Lime for Bonemeal.
- 4th application:** Foliar feed during fruit fill with 1-2 oz. Kelp in 1 gal. of water on 10-15 ft. of row.
- Soil application:** Use 2-3 oz. Natural Fertilizer, 2-3 oz. Liquid Lime, and 1-2 oz. Kelp in 1 gal. of water on 10-15 ft. of row.

## Legumes

(i.e. beans, peas, lima beans)

- 1st application:** Band 1-2 oz. Natural Fertilizer, 2-3 oz. Bonemeal, and 1-2 oz. Kelp in 1 gal. of water on 20-30 ft. of row during planting.
- 2nd application:** Foliar feed 1 week before 1st bloom (when terminal leaves are shiny) with 1-2 oz. Natural Fertilizer and 1-2 oz. Kelp in 1 gal. of water.
- 3rd application:** Repeat foliar feed before 2nd flush of blooms on string beans.
- Soil application:** Use 1-2 oz. Natural Fertilizer, 1-2 oz. Bonemeal, and 1-2 oz. Kelp in 1 gal. of water on 15-20 ft. of row.

## Cucurbits

(i.e. cucumber, squash, melon)

- 1st application:** Band 2-3 oz. Natural Fertilizer, 1-2 oz. Bonemeal, and 1-2 oz. Kelp in 1 gal. of water on 15-20 ft. of row or 4 hills at planting.
- 2nd application:** Foliar feed 2-3 weeks after emergence with 2-3 oz. Natural Fertilizer in 1 gal. of water.
- 3rd application:** Repeat 2nd application when plants begin to run.
- 4th application:** Repeat 2nd application when the first bloom appears.
- 5th application:** Foliar feed during fruit fill up to 2 weeks before final harvest with 1-2 oz. Kelp in 1 gal. of water.
- Soil applications:** Use 2-3 oz. Natural Fertilizer in 1 gal. of water on 10-20 ft. of row or 50-100 sq. ft.

## Sweet Corn

- 1st application:** At planting, band 7-8 oz. Natural Fertilizer, 4-5 oz. Bonemeal and 2-3 oz. Kelp into 2 gallons of water per 10 foot row.
- 2nd application:** When plants are 4-6 inches tall: Foliar feed 7-8 oz. Natural Fertilizer, 4-5 oz. Bonemeal and 2-3 oz. Kelp into 2 gallons of water per 10 foot row.
- 3rd application:** When plants are 10-12 inches tall: Foliar feed 7-8 oz. Natural Fertilizer, 4-5 oz. Bonemeal and 2-3 oz. Kelp into 2 gallons of water per 10 foot row.
- 4th application:** When corn is 18 to 24 inches tall: Foliar feed 7-8 oz. Natural Fertilizer, 4-5 oz. Bonemeal and 2-3 oz. Kelp into 2 gallons of water per 10 foot row.

## Alliums

(Onions, garlic, shallots, leek)

- 1st application:** At planting, band 3-4 oz. Natural Fertilizer, 3-4 oz. Bonemeal, and 1-2 oz. Kelp in one gallon water to 10 feet of row.
- 2nd application:** Apply 3-4 oz. Natural Fertilizer and 1-2 oz. Kelp at emergence to 10 feet of row.
- 3rd application:** Repeat 2nd application monthly until 1 month before harvest.

## Small Fruit S

### Strawberry

- 1st application:** Foliar feed in early spring after leaf formation with 2-3 oz. Natural Fertilizer in 1 gal. of water (only if leaves are light green to yellow) otherwise use 1-2 oz. Kelp.
- 2nd application:** Foliar feed in late summer with 1-2 oz. Natural Fertilizer in 1 gal. of water.
- New Planting:** Broadcast 3-4 oz. Natural Fertilizer, 3-4 oz. Bonemeal, and 1-2 oz. Kelp in 1 gal. of water on 100 sq. ft. before final seedbed preparation. Water in transplants with 2-3 oz. Natural Fertilizer or 1-2 oz. Kelp in 1 gal. of water on 10-15 ft. of row.

### Blueberry

- 1st application:** Broadcast 2-3 oz. Natural Fertilizer in 1 gal. of water on 100 sq. ft. (on mulch around plants) as buds begin to swell in spring.
- 2nd application:** Repeat 1st application only if leaves are light green or one year old stems less than 6 inches in length.
- 3rd application:** Foliar feed in late summer after harvest with 1-2 oz. Natural Fertilizer in 1 gal. of water on bushes with low vigor as explained under 2nd application above.
- New Planting:** Broadcast 1-2 oz. Natural Fertilizer in 1 gal. of water on 100 sq. ft. (on mulch around bushes) after transplanting when new growth appears.

### Raspberry

- 1st application:** Broadcast 2-3 oz. Natural Fertilizer and 1-2 oz. Kelp in 1 gal. of water on 100 sq. ft. in early spring.
- 2nd application:** Repeat 1st application in monthly intervals up to harvest.
- 3rd application:** Broadcast 2-3 oz. Natural Fertilizer, 2-3 oz. Bonemeal, 1-2 oz. Kelp on 100 sq. ft. after final harvest. Till into soil with organic matter or cover crop.
- New Planting:** Use same rates given under 3rd application.

## Grapes

- 1st application:** Broadcast 2-3 oz. Natural Fertilizer and 1-2 oz. Kelp in 1 gal. of water on 100 sq. ft. or 15 ft. row in early spring.
- 2nd application:** Foliar feed in spring after leaf formation with 2-3 oz. Natural Fertilizer and/or 1-2 oz. Kelp in 1 gal. of water (use Natural Fertilizer only if leaves are light green to yellow and vines lack vigor).
- 3rd application:** Foliar feed with 1-2 oz. Kelp in 1 gal. of water in monthly intervals up to harvest. Till into soil with organic matter or legume cover crop.
- 4th application:** Repeat 1st application in fall after harvest.
- New Planting:** Use same rates given under 1st application. Pour some Natural Fertilizer solution into the bottom of the planting hole.

## Fruit tree S

### Apple and Pear

- 1st application:** Foliar feed in spring after leaf formation with 2-3 oz. Natural Fertilizer in 1 gal. of water.
- 2nd application:** Foliar feed during fruit set with 1-2 oz. Natural Fertilizer in 1 gal. of water.
- 3rd application:** Foliar feed during fruit fill with 1-2 oz. Kelp in 1 gal. of water. Add additional 1-2 oz. of Liquid Lime where bitter pit is problematic.
- 4th application:** Broadcast 2-3 oz. Natural Fertilizer in 1 gal. of water on 100 sq. ft. after fall harvest or in early spring. Till into soil with organic matter or cover crop.
- New Planting:** Use same rates given under 4th application. Pour some Natural Fertilizer solution into the bottom of the planting hole.

### Cherry and Peach

- 1st application:** Broadcast 2-3 oz. Natural Fertilizer and 1-2 oz. Kelp in 1 gal. of water on 100 sq. ft. in fall after harvest or in early spring. Till into soil with organic matter or cover crop.
- 2nd application:** Foliar feed during fruit set with 2-3 oz. Natural Fertilizer in 1 gal. of water.
- New Planting:** Use same rates given under 1st application. Add an additional 2-3 oz. 0-12-0 to fertilizer solution. Pour some Natural Fertilizer solution into the bottom of the planting hole.

## Citrus

- 1st application:** Broadcast 3-4 oz. Natural Fertilizer in 1 gal. of water on 100 sq. ft. in spring.
- 2nd application:** Foliar feed during pre-bloom period with 2-3 oz. Natural Fertilizer in 1 gal. of water.
- 3rd application:** Repeat 2nd application after petals fall.
- 4th application:** Repeat 2nd application during fruit formation.
- 5th application:** Foliar feed during fruit fill 1-2 oz. Kelp in 1 gal. of water.
- 6th application:** Repeat 1st application in fall after harvest.
- New Planting:** Use same rates given under 1st application. Pour some of the fertilizer solution in to the bottom of the planting hole.

## Hou Seplant S

- Summer:** Saturate soil with 2-3 oz. Natural Fertilizer in 1 gal. of water every 2-4 weeks. (fertilize less often on succulents and cacti).
- Winter:** Use same rates but fertilize every 4 to 8 weeks.
- Spring and Fall:** Flush pots with plenty of fresh water and fertilize with 2-3 oz. Natural Fertilizer and 2-3 oz. Bonemeal in 1 gal. of water 2-3 days after flushing pots.
- Flowering Plants:** Add 2-3 oz. Bonemeal to the fertilizer tea at first sign of bloom or at the beginning of bloom season if known.

# AGGRAND Products are Your Complete Natural Lawn and Garden Care System



## AGGRAND Natural Fertilizer 4-3-3

*The leading natural liquid fertilizer on the market. Because of its fish/kelp base, it can be used in foliar or soil applications. Fish contains the plant nutrients nitrogen, phosphorus and potassium. Kelp is known to contain micronutrients and growth hormones, which contribute to good plant health.*



## AGGRAND Natural Kelp and Sulfate of Potash Kelp

*AGGRAND Natural Kelp and Sulfate of Potash enhances plant productivity by providing potassium, sulfur, plant hormones and amino acids.*



## AGGRAND Natural Liquid Bonemeal Bonemeal

*The perfect high-phosphorus fertilizer. Like the other AGGRAND products, it's effective and easy to use. Forget the dusty mess of dry bonemeal products and use this convenient, effective product.*



## AGGRAND Natural Liquid Lime

*A readily available source of calcium. Contains very fine calcitic lime for faster soil reaction and increased penetration to the root zone where it's needed most.*

AGGRAND products and Dealership information are available from your local AGGRAND Dealer.

Jeff Fisher

866-292-4700

[www.NaturalFertilizer.us](http://www.NaturalFertilizer.us)

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