AGGRAND®

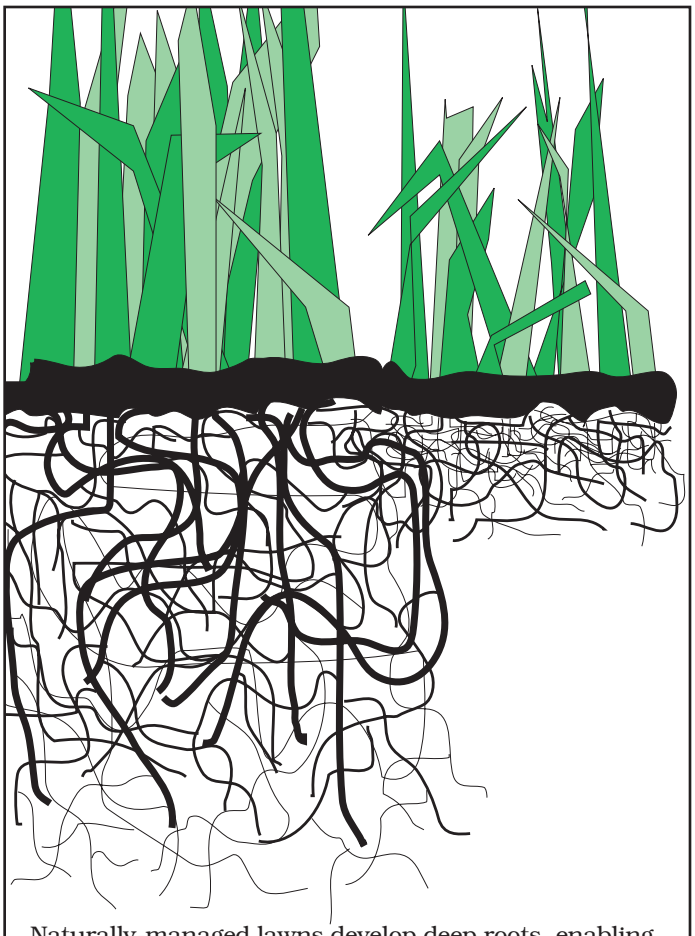
Easy Steps to Natural Lawn Care

Natural lawn care offers lawn care professionals an environmentally compatible, easy-to-use alternative to high-input care. Natural care improves the beauty and vigor of your clients' lawns – and reduces your cost of doing business. Converting your business to natural methods is easy with AGGRAND products.

AGGRAND Natural Fertilizer

The foundation of the AGGRAND natural lawn care program, AGGRAND Natural Fertilizer will improve your whole operation, from the quality of the lawns you produce to your profitability.

- Prevailing lawn care practices depend on high rates of nitrogen input, which promotes an excessive leaf development to root reserve ratio. Such over-abundant top growth is easy prey for disease-causing organisms and insects, while the shallow root system can't store the reserves to cope with drought stress. Heavy, excessive top growth also leads to an excessive amount of clippings, which outstrip the ability of soil organisms to break down dead materials, leading to thatch build-up, increased disease risk and unsightly appearance. Finally, all that top growth needs frequent mowing!



Naturally-managed lawns develop deep roots, enabling them to tap soil water reserves and resist drought damage. Chemically-managed lawns develop shallow roots and can be susceptible to drought stress.

Excessive nitrogen	AGGRAND
Rapid leaf growth	Balanced leaf and root development
Poor root development	
Frequent mowing	Reduced mowing frequency
Poor stress tolerance	Good stress resistance
Rapid thatch build-up	No thatch build-up
Poor nutrient cycling	Cycles nutrients efficiently
Depletes plant reserves	Increases plant reserves
Favors weed growth	Favors grass growth
Leaches out of soil	Stable in soil
Pollutes nearby waters	No leaching, no pollution
Increases soil salt content	No salt increase

Excessive salt	AGGRAND
Reduces nutrient cycling	Efficient nutrient cycling
Decreases organic matter	Increases organic matter
Promotes soil compaction	Increases soil aeration
Damages soil structure	Improves soil structure

Excessive nitrogen and salt	AGGRAND
Harm earthworms	Allows soils to return to more natural pH, salinity and overall chemical and physical balance, encouraging the return of earthworms and microbes
Harm soil microbes	
Burn foliage	

AGGRAND Natural Fertilizer 4-3-3 helps lawns develop deep root systems with proportional top growth by supplying nitrogen as part of a balance of nutrients. Due to its balanced growth, the natural lawn resists disease, insects and drought much more successfully than high-input lawns do. Naturally-managed lawns cycle nutrients efficiently, preventing thatch build-up. In fact, recycling thatch actually gives the lawn an extra two pounds of nitrogen per 1,000 square feet over the growing season – a nice little boost. Finally, natural lawns require less mowing than high-nitrogen lawns.

- Conventional lawn care practices may cause micronutrient deficiencies and inefficient nitrogen usage. Plants take up nitrogen and micronutrients in a fixed proportion, so when nitrogen is highly abundant, micronutrients should be, too. Most commercial fertilizers don't supply micronutrients, so lawns may suffer micronutrient deficiencies and often fail to use all the supplied nitrogen.
- Natural lawns depend on fixation and release of nutrients by soil microbes to regulate soil fertility. Nutrients that are not directly taken up by the grass are stored and released slowly in proportions that promote healthy growth.

AGGRAND Natural Fertilizer 4-3-3 contains kelp and fish, potent macro and micronutrient sources. Many of the nutrients are in chelated form which holds them in reserve until needed. Plants get the nutrients they need when they need them.

- Conventional fertilizers supply nitrogen as a salt. Salts dissolve quickly in soil, releasing nitrogen which encourages weed growth. In fact, a late-season nitrogen spike specifically favors crabgrass.

  Lawn grasses respond to a nitrogen spike by producing excessive top growth in lieu of storing carbohydrates. Lawns with poor carbohydrate reserves go dormant during drought or other stressful times.

  Rapid fertilizer release also allows nitrogen to leach through the soil which pollutes ground and surface waters.

AGGRAND Natural Fertilizer 4-3-3 supplies many of its nutrients as organic compounds, such as carbohydrates and proteins. These water insoluble compounds are held in the soil until microbes and other organisms digest them, "time-releasing" plant nutrients, with no leaching, no pollution.

- Salt-based fertilizers toxify the soil which reduces soil microbe and earthworm populations, and consequently reduces nutrient cycling, decreases soil organic matter content, increases soil compaction and damages soil structure.

AGGRAND Natural Fertilizer 4-3-3 helps restore soils to their natural nutrient balance, encouraging soil microbes and earthworms to repopulate the soil which increases nutrient cycling and loosens soil structure.

- *Sprayable liquid is available in quarts, 5-gallon twin packs or 55-gallon drums. Guaranteed analysis: 4-3-3. One quart treats 3,000 to 8,000 square feet.*

AGGRAND Natural Liquid Bonemeal 0-12-0

AGGRAND Natural Liquid Bonemeal provides an immediately-available source of natural phosphorus to your lawn. Phosphorus makes an important contribution to root development which is essential to the establishment and long-term vigor of the lawn.

- *Sprayable liquid, available in quarts, 5-gallon twin packs or 55-gallon drums. Guaranteed analysis: 0-12-0. One quart treats 1,000 to 2,000 square feet.*

AGGRAND Natural Liquid Lime

AGGRAND Natural Liquid Lime contains high-quality (99.6% pure) dolomitic limestone in suspension specifically formulated for faster penetration around the roots. AGGRAND Natural Liquid Lime features lime particles two times finer than those of conventional, bagged lime. As a result, it penetrates the soil profile more rapidly, providing immediate availability.

- *Sprayable liquid, available in quarts, 5-gallon twin packs or 55-gallon drums. One quart treats 1,000 to 5,000 square feet.*

Aggrand Natural Kelp and Sulfate of Potash 0-0-8

AGGRAND Natural Kelp and Sulfate of Potash enhances plant health by providing potassium, micronutrients, sulfur, hormones and amino acids. AGGRAND Natural Kelp with 2% Sulfur increases heat, cold and drought tolerance while decreasing the susceptibility to insect attack and infection by disease-causing organisms.

- *Sprayable liquid, available in quarts, 5-gallon twin packs or 55-gallon drums. Guaranteed analysis: 0-0-8. One quart treats 5,000 to 10,000 square feet.*

Aggrand Rates and Timings

Application rates and timing vary according to grass species, soil type and lawn condition. Normally, four to six applications of AGGRAND 4-3-3 per year are sufficient. The first application is made as soon as the grass shows signs of growth (green color) in early spring. The second application follows in three to four weeks (shorter interval for sandy soil). On lawns in good condition (mostly turf grass, with few weeds and a small amount of thatch) a third application can be made before the grass goes into summer dormancy. Resume fertilization in late summer when the grass starts to grow again. Fertilize two or three more times before the end of the season at the same interval as the spring fertilizations.

The addition of 1 pint/5,000 sq. ft. of AGGRAND 0-0-8 to the spray mix once in early spring, before summer heat and/or drought, and in early fall provides increased beneficial effects to plant health. Addition of 1 quart/2,000 sq. ft. of AGGRAND 0-12-0 once in early spring or later fall provides further enhancement of root development.

AGGRAND 4-3-3 rates for specific grass species:

1 quart per 5,000 to 8,000 sq. ft.
- Buffalo grass
- Fine fescue
- Tall fescue

1 quart per 3,000 to 5,000 sq. ft.
- Bermuda grass
- Carpet grass
- Kentucky bluegrass
- Perennial rye grass
- Zoysia grass

1 quart per 2,000 to 4,000 sq. ft.
- Bahia grass
- Bent grass
- Centipede grass
- St. Augustine grass

Lawns that exhibit slow growth, yellow color and a large number of weeds may have other problems that need to be addressed. If weeds are problematic, then they need to be removed either by hand weeding or the application of an herbicide. Herbicide applications should be made when the weeds are just beginning to grow. As a general rule grassy weeds begin to grow in early spring when the soil temperature reaches 50°F, whereas broad leaves take off later in spring when the soil temperature reaches 60°F. It makes matters worse to "weed-n-feed" the lawn because resistant weeds will grow that much faster. A workable plan involves these steps:

- Note weed types and areas in lawn where they are growing the first year.
- After speaking with an authorized weed control specialist, implement a weed control plan the second year.
- In early fall, after weeds are controlled, over-seed the lawn with turf species mixed with compost or well-composted manure (if the lawn is very uneven, one-third sand can be used in the mixture to help level the lawn).
- Fertilize the lawn with AGGRAND 4-3-3 as you would normally once the new grass has been mowed two or three times.

If the lawn is full of plantain, dandelions and/or quackgrass this condition could be caused by compacted soil. Check to see if the soil is compacted by trying to push a blunt object into it in a number of different spots. If the soil is difficult to penetrate, then the lawn needs to be renovated (killed, desodded, tilled, reseeded) or dethatched, aerated and overseeded. Check with some lawn care professionals before taking the renovation route, although it may be the only workable solution on very weedy and/or compacted lawns. If renovation is necessary be sure to add compost/manure, adjust soil pH, and apply one quart each of AGGRAND Natural Fertilizer 4-3-3 and AGGRAND Liquid Bonemeal 0-12-0 and one pint of AGGRAND Natural Kelp and Sulfate of Potash 0-0-8 per 1,000 sq. ft. before the final trip over the ground with the rototiller.

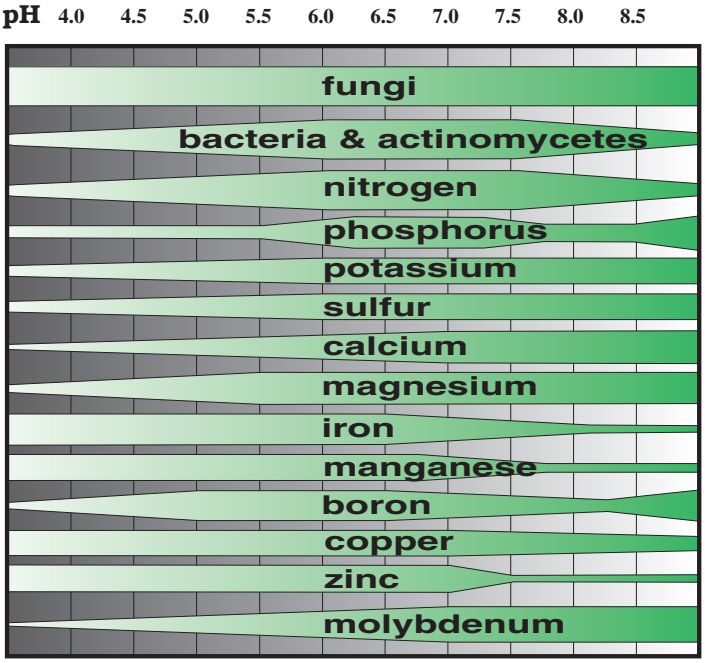
Slow growth and yellowish grass may be the result of compacted soil because oxygen is unable to penetrate into the root zone where the roots use it for respiration (the release of energy from stored carbohydrates). The other cause of yellowish grass is low pH. Another sign of low pH is the growth of moss in the lawn. If the soil pH is below 6.0 then the pH surrounding the roots needs to be raised by applying AGGRAND Liquid Lime. Apply one quart per 1,000 sq. ft. every 3-4 weeks during spring and fall (along with fertilizer applications).

How Does the Lawn Look?

Someday, after a soaking rain, cut a sod sample three to four inches deep. You should see:

- *Moisture throughout the sample. Dry areas may indicate thatch build-up or soil compaction.*
- *Roots throughout the sample. Roots shorter than four inches may indicate soil compaction, mowing too short or nutrient deficiencies.*
- *Less than ¼" thatch. Deeper thatch encourages diseases.*

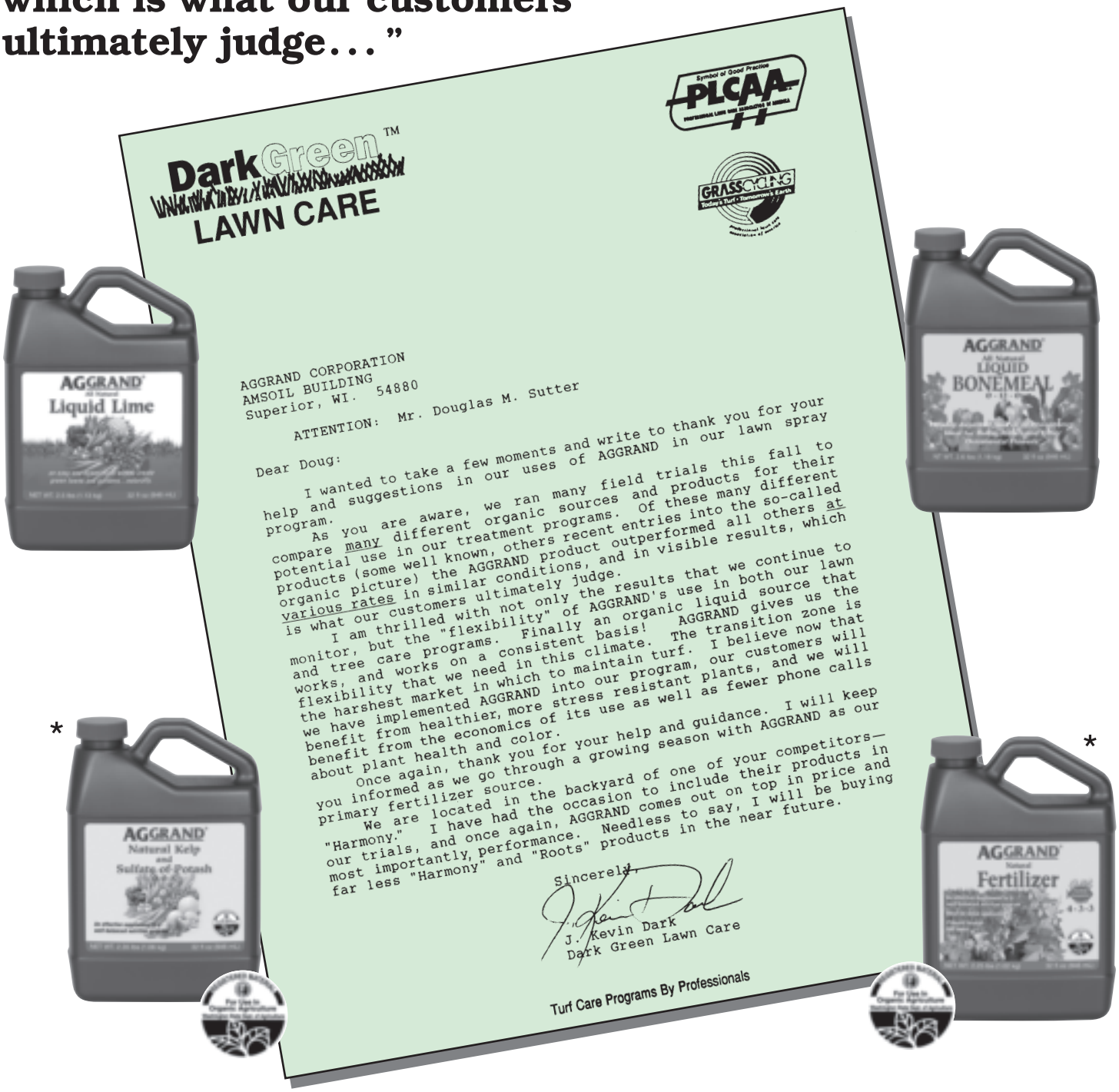
NUTRIENT AVAILABILITY IN RELATION TO pH



Illinois Agronomy Handbook, 1979-80

An ongoing AGGRAND natural lawn care program helps keep pH in the optimal zone, for greatest nutrient availability and superior lawn health and beauty.

“AGGRAND outperformed all others... in visible results, which is what our customers ultimately judge...”



* Meets Canada Organic Regime (CAN/CGSB-32-311-2006)

AGGRAND®

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