Lawns 101

" As I see it "

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Purdue Master Gardener Program™

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"Helping others grow"

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Lawns 101

- What is a perfect lawn? *(According to Terry)*
- Lawn Types *(Know your Turfgrass)*
- Soil and PH *(Why won't my grass grow?)*
- Lawn Care
- Lawn Maintenance *(When, why and how much)*
- Go **Green**, Plant Natives?
- Landscaping *(What the heck is Vastu Shastra)*
- Alternatives Solutions to Some Major Issues

The Perfect Lawn

('According to Terry')

- "*A perfect looking lawn does not have to be perfect*".

  (Perfection comes at a cost. Compromise and be tolerant of some imperfections.)

- *"Not all weeds must go, keep them under control"*

  (Weed cost money, time and labor. Keeping your grass tall will do more to stop weed growth)

- *"Moles must go!, kill them all"*

  (I say again, 'According to Terry')

- *"A perfect lawn is the space that ties the gardens together providing the social space to roam and gather"*

- *"Listen to your lawn, mow when it tells you to"*

  (Yes people will think your crazy but the grass '*talks-to-you'*)

Turf Types *(Know your Grass)*

Type	Perennial Ryegrass	Annual Ryegrass	Kentucky Bluegrass	Part Kentucky Bluegrass	Newport Kentucky Bluegrass	Marion Kentucky Bluegrass
Days to Germinate	10-14	10-14	14-28	10-28	10-28	14-28
# Seeds / pound	230,000	230,000	2.2 mil	2.2 mil	2.2 mil	2.2 mil
Seeding Rate / 1000 sq ft						
New Lawn	10	10	4	4	4	4
Estab. Lawn	6	6	2	2	2	2
Usual Life	3 yrs	1 yr	Permanent	Permanent	Permanent	Permanent
Blade Texture	Coarse	Coarse	Fine	Fine	Fine	Fine
General Utility	Poor	Poor	Excellent	Excellent	Excellent	Excellent
For Shade Area	Poor	Poor	Poor	Poor	Good	Poor
For Play Areas	Good	Good	Good	Good	Good	Good
For Golf Fairways	Fair	Fair	Good	Excellent	Good	Excellent
For Quick Cover	Excellent	Excellent	Poor	Good	Fair	Poor
For Slopes / Terraces	Good	Fair	Good	Good	Good	Good
General Desirability	Quick Cover / Nurse Grass	Quick Cover	Sunny Lawns	Fast Germination	Shade Tolerant	Sunny Lawns

Turf Types *(Know your Grass)*

Type	Creeping Red Fescue	Tall Fescue	Meadow Fescue	Red Top	Bent Grass
Days to Germinate	10-21	10-14	10-14	9-14	7-14
# Seeds / pound	550,000	230,000	230,000	4.99 mil	5.5 mil
Seeding Rate / 1000 sq ft					
New Lawn	6	10	10	3	2
Estab. Lawn	3	6	6	2	1
Usual Life	Permanent	Permanent	Permanent	3 yrs	Permanent
Blade Texture	Fine	Coarse	Coarse	Fine	Fine
General Utility	Good	Poor	Poor	Fair	Fair
For Shade Area	Good	Fair	Poor	Poor	Fair
For Play Areas	Excellent	Excellent	Excellent	Good	Fair
For Golf Fairways	Excellent	Fair	Poor	Good	Good
For Quick Cover	Fair	Good	Good	Excellent	Fair
For Slopes / Terraces	Good	Excellent	Fair	Good	Good
General Desirability	Shade Tolerant	Hard Use	Poor	Fine Nurse Grass	Putting Greens

Turf Types *(Know your Grass)*

- **Perennial Ryegrass**
  - Fine textured and deep green in color, ryegrass is a fast-growing seed, frequently used by itself or in mixtures. Rye-grass is available as an annual or perennial. Small quantities may be included in seed mixtures. Good to cover slopes because of quick germination. It is a cool climate grass that works well in the northwest and coastal west. Does not do well in extreme cold or drought conditions.

- **Annual Ryegrass**
  - Fast-growing seed, frequently used by itself or in mixtures. Rye-grass is available as an annual or perennial. The annual is quick to germinate for temporary lawns, but can only be planted for one season. Small quantities may be included in seed mixtures. Good to cover slopes because of quick germination.

- **Kentucky Bluegrass**
  - Known by its blue-green color, it is one of the most common grasses used in the cool season areas of the U.S. (as it weathers well in cold winters). Forms a good sod when grown alone and thrives when included in a mixture. Slow to germinate and become established. Won't tolerate dense shade or drought. Responds to adequate fertilization and high mowing (more than an inch and a half).

- **Part Kentucky Bluegrass**
  - Forms a good sod when grown alone and thrives when included in a mixture. Slow to germinate and become established. Won't tolerate dense shade. Responds to adequate fertilization and high mowing (more than an inch and a half)

Turf Types *(Know your Grass)*

- **Newport Kentucky Bluegrass**
  - Forms a good sod when grown alone and thrives when included in a mixture. Slow to germinate and become established. Won't tolerate dense shade. Responds to adequate fertilization and high mowing (more than an inch and a half).

- **Marion Kentucky Bluegrass**
  - Seeds are very small which means greater coverage per pound. Resistant to leaf spot. Can be mowed closer and fertilized more. Retains green look longer. Best to plant in early fall or very early spring because seedlings grow slowly. Subject to rust and powdery mildew in fall if soil lacks nitrogen.

- **Creeping Red Fescue**
  - Well adapted to drought soils in shady or sunny area. Generally included in bluegrass mixtures. Creeping fescue is another common strain. Some strains are subject to leaf spot and become open and pitted in the summer. Fall planting preferred.

- **Tall Fescue**
  - Rather coarse, but good for areas that need a tough stand of grass.

Turf Types *(Know your Grass)*

- **Meadow Fescue**
  - Similar to Tall Fescue with long and slender leaves. A hardy perennial bunchgrass it works well in cool climates and is usually found in pastures or fields.
- **Red Top**
  - Like its name suggests, this grass sports red seed heads throughout the summer. It works well in wet places such as around water gardens.
- **Bent Grass**
  - Used mainly on golf putting greens. Dense patches of creeping bentgrass generally are unwanted. Where bent is desired, it must be given good care, cut very close, fertilized regularly, watered repeatedly and thinned several times a year.
- **Other Grasses**
- **Bermuda Grass**
  - Spreads by fast-growing surface runners during warm periods, but goes brown and dormant from first frost till late spring. Not recommended in northern areas, but has high heat and drought tolerance for Southern regions.
- **Zoysia**
  - Medium to dark green in appearance it is planted by plugs. Adapted to sunny areas in warmer parts of the Midwest and South. Surface runners make a dense mat, which reduces weeds and crabgrass. It turns brown slowly in mid-fall; remains dormant until mid-spring. Although it has a high tolerance to heat, it is slow growing.

Turf Types *(Know your Grass)*

- **Centipede**
  - Good in moderate shade and infertile soil; has few insect or disease problems. It is yellowish-green in color and is mostly used in the southeast. Although it is a slow growing grass, it doesn't require a lot of maintenance.

- **Carpetgrass**
  - Recommended for infertile and sandy soils. Does not like shade and must be mowed frequently. Similar in color to centipede grass and most often found in Florida and areas along the Gulf Coast as it likes wet and warm climates.

- **Bahia Grass**
  - Grows well in partial sun or shade in warm climates. Requires little maintenance. Keep trimmed to 1/2 inch. Can be green or light green in color and is known for staying green during the fall and winter.

- **St. Augustine**
  - Recommended for Florida and Gulf Coast areas. A course, tough grass that requires a power mower, but little other maintenance. Can be dark green or even blue-green in appearance. Do not use in areas that go below the freezing level

- **Victa**
  - Dark, deep blue-green bluegrass with a medium-fine texture and low growth habit. Good leaf spot resistance and above-average shade tolerance.

- **Baron**
  - Dark bluish-green, low- growing, disease resistant and relatively problem free.

Soil and PH

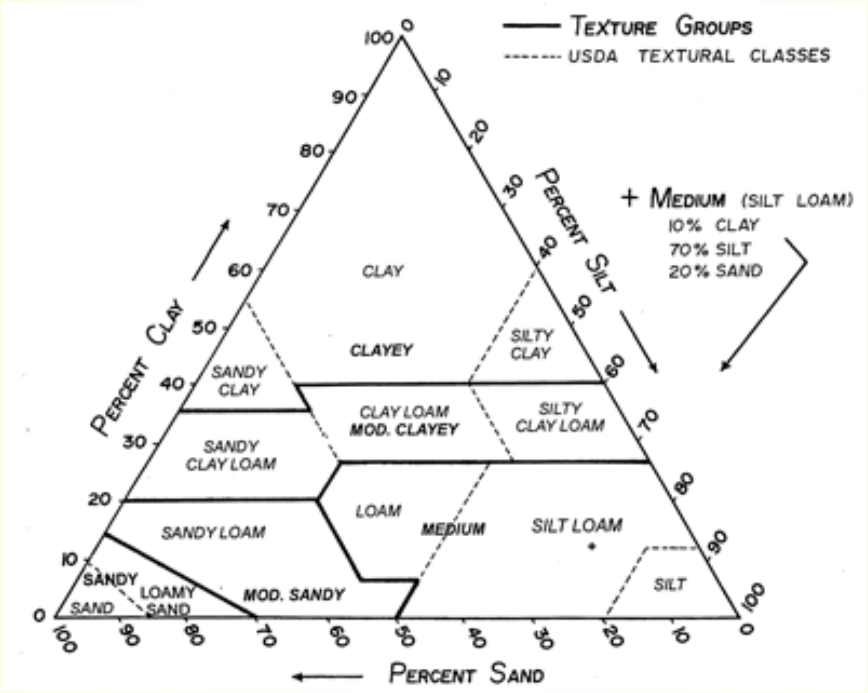
(Why won't my grass grow?)

- There are three basic different types of soils. The three soil types are clay soils, loamy soils and sandy soils. Loamy soils are the ideal; the other two soil types present challenges for irrigation. But how do you find out which type of soil you have? Although there are more sophisticated ways to find out your soil type, I present the simplest way below. It literally involves taking matters into your own hands:
  - **Pick up a marble-sized hunk of moist soil and roll it between your thumb, forefinger and middle finger, as if trying to shape it into a little ball.**
  - **With a clay soil, your rolling will be successful: you'll end up with a ball the size of a marble.**
  - **With a sandy soil, your attempt at forming a ball will be completely unsuccessful: it will fall apart.**
  - **With a loamy soil, your attempt will show some promise, but ultimately fail: the ball will fall apart once you leave off applying pressure**

From David Beaulieu,
Your Guide to Landscaping.
http://landscaping.about.com/cs/cheaplandscaping1/f/three_soils.htm

Soil and PH

(Why won't my grass grow?)



Soil evaluation texture groups contain the following standard texture classes:

1. **Sandy**—sands and loamy sands.
2. **Moderately sandy**—sandy loams.
3. **Medium**—loam, silt loam, and silt.
4. **Moderately clayey**—sandy clay loam, clay loam, and silty clay loam.
5. **Clayey**—sandy clay, clay, and silty clay.

For *surface texture*, determine the dominant texture in the plow layer or the upper 8 inches of soil. Determine *subsoil texture* in the finest layer (the depth that contains the most clay) exposed below the surface horizon.

Note: Official judges may designate on the site card depths at which to judge surface or subsoil texture, or put samples in a container outside the soil pit.

Soil and PH

(Why won't my grass grow?)

Soil pH (a measure of acidity or alkalinity) affects the availability of most nutrients for uptake by plants. Nutrients are most readily available to plants at a pH of 6.5. Most garden plants will grow satisfactorily within a wide range of soil pH. However, most horticultural plants grow best at a soil pH of 6.0 – 6.8 (slightly acid). To make soil more alkaline, lime is added, while to make it more acid, sulphur is used. Some gardening books will advise a general application of lime to garden plants. Yet most Indiana gardens have a soil pH that is already near neutral, if not slightly alkaline. So applying lime will not help and may hurt nutrient availability in these soils. Accurate lime or sulfur applications can only be made on the basis of this soil analysis. Generally, a soil test will measure phosphorous, potassium, soil pH and organic matter. A nitrogen test is not usually done because nitrogen is not retained by soil and must be replenished every year. Tests for other nutrients may be available at additional cost. To get an accurate soil test, soil samples need to be carefully collected and prepared.

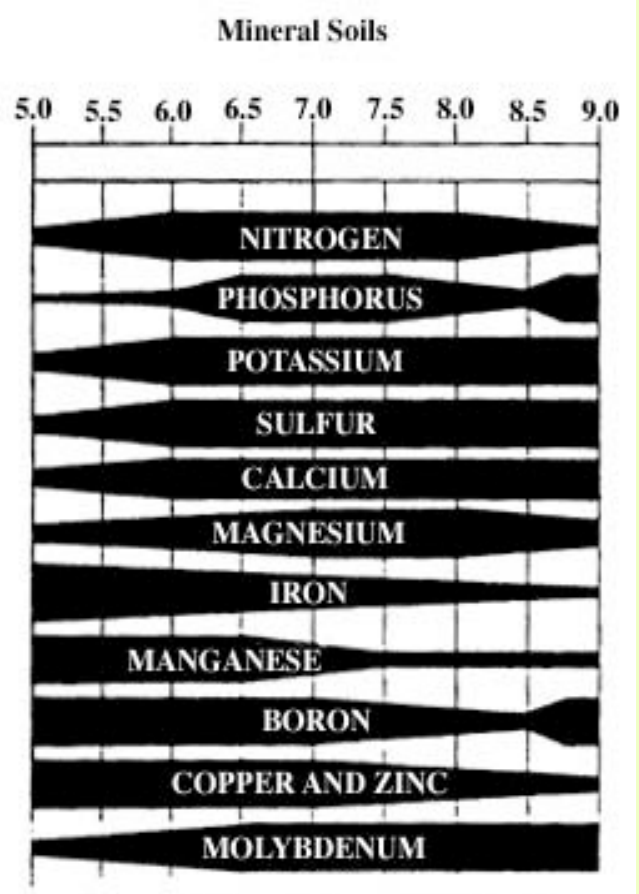


Figure 1. The relative availability of elements essential to plant growth at different pH levels for mineral soils.

Lawn Maintenance

- Keep your mower blades sharp
- Fertilize in the Fall
- Control Dandelions and Crabgrass
- Irrigate
  (Be responsible and minimize watering)

For more information see:
Purdue Publication AY-32

7 Simple Steps to a Better Homelawn
www.agry.purdue.edu/turf/pubs/ay-32.htm

Lawn Maintenance

Month	Maintenance Level: High	Med	Low	Practice	Notes
March	X			Watch for snow mold damage as snow recedes	Snow mold is possible under snow or matted leaves, rake infected area to help dry out
April	X	X	X	Mow at 2.5-3.5"	Begin mowing as soon as lawn greens-up and begins growing
	X	X		Apply a pre-emergence herbicide if crabgrass has been a problem in the past	Use a product containing little or no nitrogen Any N in the product should be a slow-release form such as sulfur- or polymer-coated urea, urea formaldehyde, or a natural organic Avoid applying more than 0.75 lbs N/1000 ft^2
May	X	X	X	Continue mowing at 2.5-3.5"	Frequent mowing is needed during this time to avoid removing more than 1/3 of the leaf blade during a single mowing
	X			Aerification and/or power raking if needed	Aerification will help alleviate compaction and thatch while power raking will help alleviate only thatch
	X			Apply 0.75-1.0 lbs N/1000 ft^2	Use a product containing mostly slow release N, but do not fertilize now if fertilizer was applied with a pre-emergence herbicide in April
	X	X		Dandelions can be spot sprayed with a broadleaf herbicide	Wait until flowering to apply herbicide in spring, safer and more efficient dandelion control is achieved with broadleaf herbicide applications in October
	X	X		Watch for red thread in slow-growing lawns	Red thread can be minimized with fertilizer application
June	X	X	X	Continue mowing at 2.5-3.5"	Irrigate thoroughly, and then do not water again until the first signs of drought stress are seen
	X			Irrigate as needed	If disease outbreak is severe, consider applying 0.5-0.75 lbs N/1000 ft^2
	X	X		Watch for red thread, dollar spot in slow-growing lawns	Follow label directions carefully, and do not apply when temperatures are over 80^{o}F or to drought-stressed turf
	X			Apply postemergence herbicide if undesirable amount of crabgrass develops	
July	X	X	X	Continue mowing at 2.5-3.5"	Fertilize only on irrigated lawns or during summers with above average rainfall and use a product containing slow release N
	X			Irrigate as needed	
	X	X		Apply 0.75 lbs N/1000 ft2	If lawn has a history of white grub damage, consider applying insecticide containing Merit in early July
	X			Start scouting for white grubs	

Lawn Maintenance

Month	Maintenance Level: High	Med	Low	Practice	Notes
August	X	X		Irrigate as needed	Optimum seeding window is Aug 15 to Sept 15 in central IN
	X	X		Reseed thin or bare areas starting in the middle of August	Irrigate to encourage growth and if disease outbreak is severe, consider applying 0.5-0.75 lbs N/1000 ft^2
	X	X		Watch for rust in slow growing lawns	
	X			Continue scouting for white grubs	If grubs are found, or lawn has a history of white grub damage, consider applying insecticide other than Merit in early August
September	X	X	X	Apply 1 lb N/1000 ft^2	Should be done only when grass is growing vigorously
	X			Aerification and/or power raking if needed	Irrigate to encourage growth and the application of fertilizer should help minimize damage
	X	X		Watch for rust in slow-growing lawns	If grub damage is found, increase irrigation and consider application of the insecticide Dylox
	X	X		Watch for white grub damage	
October	X	X	X	Control dandelions and other broadleaf weeds now	Spot sprays or blanket applications of broadleaf herbicides containing 2,4-D, dicamba, and MCPP are most effective
	X	X	X	Continue mowing at 2.5-3.5"	Continue as long as grass is growing and to mulch tree leaves into turf
	X	X		Watch for rust in slow-growing lawns	Irrigate to encourage growth and if disease outbreak is severe, consider applying 0.75-1.0 lbs N/1000 ft^2
November	X	X	X	Apply 1.5 lbs N/1000 ft^2	Use a fast release N product such as urea and apply after the final mowing but while the grass is still green
	X	X	X	Continue mowing at 2.5-3.5"	DO NOT reduce the mowing height for the last few mowings; continue mulching tree leaves into the turf

Lawn Care

A healthy Lawn is like this healthy tree…

Lawn Care

Don’t cut it too Short!

(if you want to keep it Healthy)

- **Mow at 3.0 inches or more**
(Never mow below 3”)

- **Mow frequently**
(Mow as often as needed to never remove more than 1/3 of the leaf blade in a single mowing.)

- **Return the clippings**
(Leaving clippings returns valuable nutrients)

Go **Green**, Plant Natives?

"*A thing is right only when it tends to preserve the integrity, stability and beauty of the community; and the community includes the soil, water, fauna and flora, as well as the people*."

- **Aldo Leopold**, *A Sand County Almanac*, 1949

Vastu Shastra
("Site Instruction")

Basics of Vastu: The five elements

- Vaastu is the science of direction and architecture that combines all the five elements of nature and balances them with the man and the material. Vaastu Shastra is creating a congenial settings or a place to live or work, in most scientific way taking advantages of the benefits bestowed by the five elements called "Paancha Maha Bhootas" of the nature thereby paving the way for enhanced health, wealth, prosperity and happiness in an enlightened environment.

- The world comprises five basic elements, also known as the Paanchbhootas. They are **Earth, Water, Air, Fire** and **Space**. Out of the nine planets, our planet has life because of the presence of these five elements.

- **EARTH (Bhumi):-** Earth, the third planet in order from the sun, is a big magnet with North and South poles as centers of attractions. Its magnetic field and gravitational force has considerable effects on everything on the Earth, living and non-living.

- **WATER (Jala) :-** This is represented by rain ,river ,sea and is in the form of liquid , solid (ice) and gas (steam , cloud) . It forms part of every plant and animal. Our blood is nothing but water with hemoglobin and oxygen.

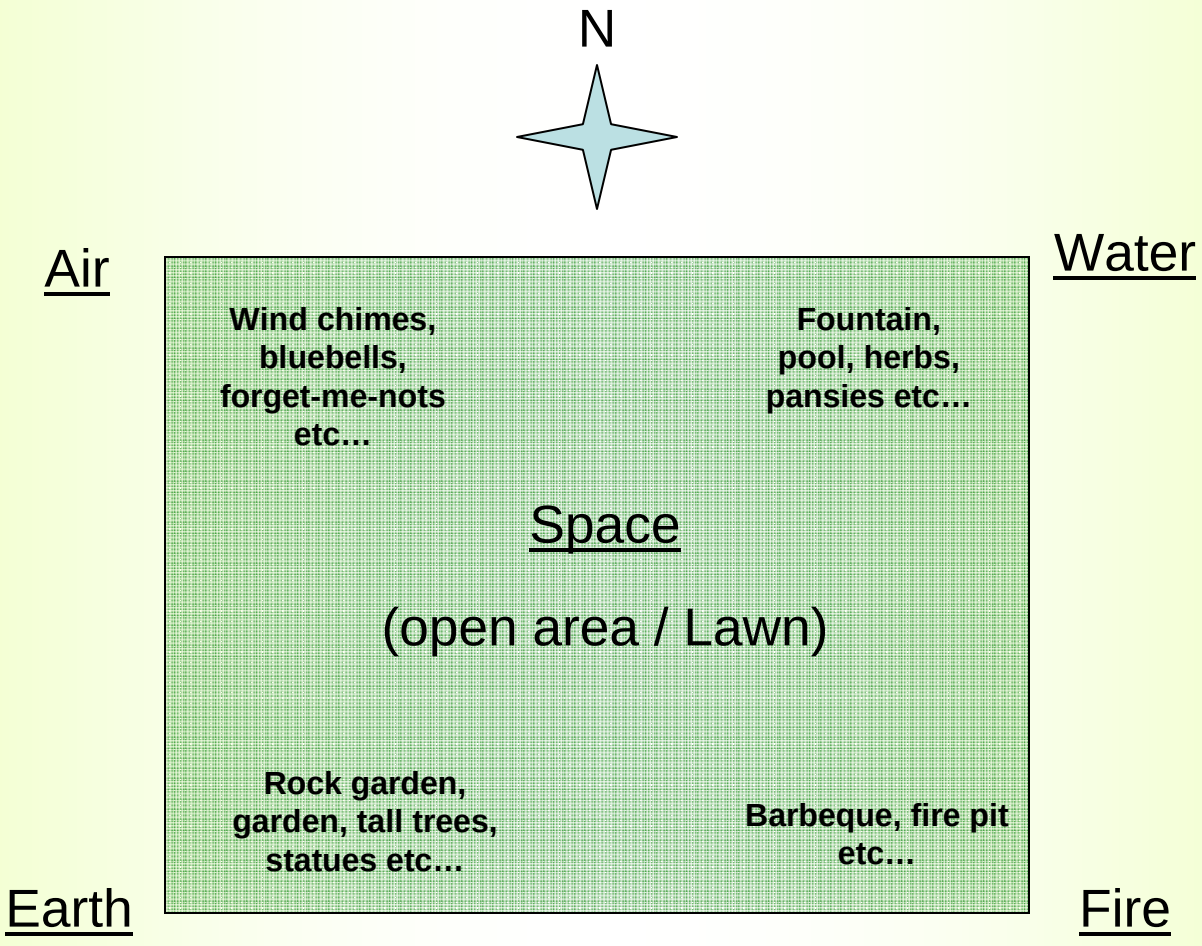
- **AIR (Vayu):-** As a life supporting element, air is very powerful life source. Human physical comfort values are directly and sensitively dependent on correct humidity, air flow, temperature of air, air pressure, air composition and its content.

- **FIRE (Agni):-** It represents light and heat without which the life will extinct. All the days and nights, seasons, energy, enthusiasm, passion, vigor is because of light and heat only.

- **SPACE (Aakasha):-** It is the shelter provider to all the above elements.

- There is an invisible and constant relation between all the five elements. Thus, the man can improve his conditions by properly designing his buildings by understanding the effectiveness of these five natural forces.

Vastu Shastra
("Site Instruction")



Alternatives Solutions to Some Major Issues

- Compost
  - Leaves, clippings, vegetable scraps, etc…
- Recycle
  - Saves trees and lowers environmental impact at landfills
- Water
  - Collect rain water for lawn, garden and flowers
  - Consider *'Gray Water'* for non-food plants

    (Gray Water is non-industrial waste water generated from domestic processes such as dish washing, laundry and bathing.)

Summary

- Keep the grass tall and your blades sharp **never mow below 3**”
- Don’t mow more than 1/3 of the grass height in a single mowing
- Apply fertilizer and weed control in the fall
- Compost, recycle clippings
- Water only when absolutely necessary and explore alternative water sources
- Being Green not only means being responsible to the environment but also to your community
- If you follow the Purdue guidelines then it’s not working in your yard or garden but playing in it.

Acknowledgements
(That I know of…)

- Purdue
  (*www.agry.purdue.edu/turf/pubs/ay-32.htm*)
  (www.agry.purdue.edu/soils_judging/review/texture.html)
  (www.hort.purdue.edu/ext/HO-71.pdf)
- Plant Nutrition by B. Rosie Lerner

  (www.hort.purdue.edu/mg/pubs/plantnutrienthandout2007.pdf)
- Ace Hardware (*www.acehardware.com*)
- Aldo Leopold, *A Sand County Almanac*, 1949
- Some Hindu stuff from *(www.wikipedia.org)*

The End