

Survey of Fertilizer Products in Lee County, Florida

In recent years, many municipalities in Florida have taken steps to reduce surface water runoff and leaching of fertilizers containing nitrogen and phosphorus from residential neighborhoods and commercial centers. The assertion is that improper landscaping and excess fertilization practices have the potential to impair fresh water bodies, estuaries, and bays. Municipalities have enacted ordinances that prohibit the application of fertilizers containing nitrogen and phosphorus during the rainy season, usually from June 1 through September 30. Some of the ordinances require that the nitrogen component of the fertilizer contain no less than 50% slow-release nitrogen (SRN). In almost all cases, the ordinances do not restrict the nitrogen or phosphorus contents or formulations of fertilizers being sold at any time of the year.

The purpose of this survey was to determine the types of fertilizers being sold in Lee County, Florida. The survey examined the nitrogen and phosphorus contents of fertilizers and the percentage of SRN in the analysis. This survey was conducted in July and August of 2012 at the garden sections of three home improvement stores and three independent garden centers. The three home improvement stores represented three separate national chain stores.

Survey Results: Fertilizers of 199 different types were sold in six stores representing three national chains and three independent stores (Table 1). In order of decreasing numbers, the following types of fertilizers for several plant categories were on sale in Lee County; turfs/lawns 45 (22.61 %); palms 13 (6.5 %); flowering plants 14 (7.03%); bloom pushers 12 (6.03%); fruit trees including citrus and avocados 11 (5.52%); vegetables including tomatoes 8 (4.02%) and roses 6 (3.02%) (Figure 1, Table 2). Fertilizers for other but smaller plant categories were also on sales including those for orchids and cacti.

Five fertilizers (2.51%) were sold as products to raise pH (lime) and four (2.01%) were sold to lower pH (acidifier) (Table 1). Forty fertilizers (20.10%) included the word “organic,” “natural” or labeled having animal and plant byproducts such as fish emulsion, blood meal, cottonseed meal and seaweed. In descending order, the following plant nutrients were highlighted on the labels, Iron 11 (5.52%); micronutrients 6 (3.01%), Magnesium as Magnesium Sulfate 5 (2.51%); Manganese as Manganese Sulfate 4 (2.01%); potassium 3 (1.51%); phosphorus 2 (1.01%) and caltrate 1 (0.50, %). Forty-four (22.11%) excluded phosphorus while including nitrogen and 10 (5.02 %) excluded nitrogen while including phosphorus.

Many local ordinances prohibited the applications of nitrogen and phosphorus containing fertilizers during the rainy season, mainly from June through September. The term “Summer Blend” has no legal standing but is generally regarded as a fertilizer containing no nitrogen and phosphorus and is specifically labeled as such. It is formulated for applications during the rainy season when nitrogen and phosphorus applications are mainly prohibited. Only 2 (%) analyses surveyed were labeled as summer safe (Table 1). Other fertilizers, containing no nitrogen and phosphorus, and not labeled as summer blend, can be used during the summer without contradicting the letter of the ordinance. These include Manganese sulfate (0-0-0-32Mn), magnesium sulfate (0-0-0-16Mg), soil acidifiers (0-0-0-90S) and murate of potash (0-0-60).

Many ordinances state that fertilizers applied to turf and/or landscape plants shall contain no less than fifty percent (50%) slow release nitrogen per guaranteed analysis label. The survey found the majority of analysis, contained less than 50% SRN 79 (39.70%). Fifty-eight (29.14%) contained 50 percent or more SRN; Thirty-seven (18.60%) contained no nitrogen and 25 (12.56%) did not indicate SRN content. Although not indicated in this survey, many of the fertilizers sold having 50% or more SRN were small specialized packs not meant for general applications to turf or landscapes. Thus, for bulk applications of fertilizers, the consumer has few choices for ordinance compliance using SRN fertilizers.

This survey does not claim to have included all of the fertilizer products sold to homeowners in Lee County. Not all products were sold in all stores and some products were only available at a single location. Products listed were available as of August 2012 and are expected to change over time. The University of Florida and Lee County Extension do not endorse any of the brand/trade names listed nor is there any intention of discriminating against any products not mentioned.

Table 1. One hundred and ninety-nine fertilizers sold in Lee County Florida and their Nitrogen contents

PRODUCT NAME	LABEL ANALYSIS	% Actual SRN (stated on label)	% N as SRN
Ace Green Turf Lawn Insect Control	30-3-4	6	20
Ace Green Turf Starter Fertilizer	20-27-5	5.2	26
Ace Green Turf Weed & Feed	29-0-3	8.5	29
Ace Green Turf Weed & Feed	20-0-10	8.5	42
Alaska Fish Fertilizer	5-1-1	0.75	15
Alaska Morbloom (Fish Source)	0-10-10	N/A	N/A
Algoflash Cactus	3-7-5	Not stated	N/A
Better Grow Orchid Plus	20-14-13	Not stated	N/A
Better Naturally Complete Lawn Food	6-3-2	3.43	57
Better-Gro Orchid Bloom Booster	11-35-15	0	0
BGI Bougain	6-8-10	2.4	40
BGI Hibiscus	12-6-8	7.29	61
Bonide Liquid Iron	0-0-0-5Fe	N/A	N/A
Citrus Nutritional Spray	0-0-0 Several Micronutrients	N/A	N/A
Dr. Earth All Purpose Fertilizer	5-5-5	5	100
Dr. Earth Fruit Tree Fertilizer	7-4-2	7	100
Dr. Earth Fruit Tree Fertilizer Organic 9	7-4-2	7	100
Dr. Earth Liquid Solution All Purpose Fertilizer	3-3-3	Not stated	N/A
Dr. Earth Tomato, Vegetable & Herb Fertilizer	5-7-3	5	100
Dynamic All Purpose Indoor/Outdoor	15-5-9	15	100
Dynamite	8-5-5	6.8	85
Dynamite Flowers & Vegetables	13-13-13	13	100

PRODUCT NAME	LABEL ANALYSIS	% Actual SRN (stated on label)	% N as SRN
Dynamite Orchids & Bromeliads	10-10-17	10	100
Dynamite Organic All-Purpose	10-2-8	9	90
Dynamite Palm & Citrus Plus all Avocado Varieties	13-5-11	13	100
Earth Safe Bat Guano	10-3-1	7	70
Espoma Garden Lime Raises Soil pH	0-0-0-21Ca-10Mg	N/A	N/A
Espoma Lawn Food	18-0-3	6.3	35
Espoma Lawn Food Phosphate Free	18-0-3	4.5	25
Espoma Organic Traditions Garden Gypsum	0-0-0-20Ca-16S	N/A	N/A
Espoma Organic Bio-Tone Starter-Plus	4-3-3	3.4	75
Espoma Organic Citrus Tone	5-2-6	3	60
Espoma Organic Flower-Tone Blossom Booster	3-4-5	2.2	73
Espoma Organic Garden Lime	0-0-0-21Ca	N/A	N/A
Espoma Organic Garden-Tone	3-4-4	2.2	73
Espoma Organic Iron-Tone	2-1-3	1	50
Espoma Organic Palm-Tone All Palms, Hibiscus and Tropical Plants	4-1-5	2.5	62.5
Espoma Organic Plant-Tone	5-3-3	3	60
Espoma Organic Rose-Tone	4-3-2	2.6	65
Espoma Organic Soil Acidifier	0-0-0-30S	N/A	N/A
Espoma Organic Tomato-Tone	3-4-6	2.1	70
Espoma Organic Traditions Cottonseed Meal	6-2-1	5.8	97
Espoma Organic Traditions Dried Blood	12-0-0	12	100
Espoma Organic Traditions Natural Potash	0-0-0.1	N/A	N/A
Espoma Organic Tree-Tone Fruit & Shade Tree Food	6-3-2	3.6	60

PRODUCT NAME	LABEL ANALYSIS	% Actual SRN (stated on label)	% N as SRN
Espoma Quick Solution Triple Phosphate	0-45-0	N/A	N/A
Extreme Green <u>Summer Safe</u> Lawn & Landscape	0-0-16-7.5Mg	N/A	N/A
Ferti-Lome	19-6-12	10.24	54
Ferti-Lome Blooming & Rooting Soluble Plant Food	9-59-8	0	0
Ferti-Lome Blooming & Rooting Soluble Plant Food	9-59-8	0	0
Ferti-Lome Chelated Liquid Iron & other micronutrients	0-0-0	N/A	N/A
Fertilome Classic Lawn Food	16-0-8	4.8	30
Ferti-Lome Fish Emulsion Fertilizer	5-1-1	Not stated	N/A
Ferti-Lome Soil Acidifier plus Iron	0-0-0	N/A	N/A
Ferti-Lome St Augustine Weed + Feed	15-0-4	4.5	30
Ferti-Lome Tomato & Vegetable Food	7-22-8	Not stated	N/A
Ferti-Lome Weed-Out Plus Lawn Fertilizer	25-0-4	7.5	30
Fish Fertilizer	5-1-1	0.75	15
Florikan Palm Special	8-2-12	Not stated	N/A
Florikan <u>Summer Safe</u>	0-0-16	N/A	N/A
Green Edge Slow Release	6-2-0	4.75	79
Green Light Superbloom	12-55-6	Not stated	N/A
Green View	13-13-13	0	0
Green View	8-8-8	0	0
Green View	10-10-10	0	0
Hi-Yield Hydrated Lime	0-0-0	N/A	N/A
Hi-Yield Aluminum Sulfate Acid Soil Condition	0-0-0-14.4S	N/A	N/A

PRODUCT NAME	LABEL ANALYSIS	% Actual SRN (stated on label)	% N as SRN
Hi-Yield Blood Meal Roses, Flowers, and Shrubs	12-0-0	12	100
Hi-Yield Bone Meal Roses, Flowers, Shrubs, Blubs, Vegetables	0-10-0	N/A	N/A
Hi-Yield Hydrated Lime Corrects Soil Acidity	0-0-0-51Ca	N/A	N/A
Hi-Yield Iron + Soil Acidifier	11-0-0-13S-16Fe	Not stated	N/A
Hi-Yield Murate or Potash	0-0-60	N/A	N/A
Hi-Yield Soil Sulfur Acid Soil Conditions	0-0-0-90S	N/A	N/A
Hi-Yield Triple Super Phosphate	0-45-0	N/A	N/A
Home & Garden Magnesium Sulfate	0-0-0-16Mg	N/A	N/A
Hyponex, All Purpose Garden	10-10-10	Not stated	N/A
Ironite	1-0-1-4Fe	Not stated	N/A
Ironite Liquid	6-2-1-1Fe	Not stated	N/A
Jack's Blossom Booster	10-30-20	0	0
Jack's Classic All Purpose Water Soluble Plant Food	20-20-20	0	0
Jack's Classic Orchid Special	30-10-0	0	0
Job's Organic Knock Out Rose Food	3-4-3	1.9	63
Jobe's Fertilizer Spikes	9-12-12	3.2	35
Jobe's Crystals	12-13-9	Not stated	N/A
Jobe's Organic Heirloom Tomato	2-5-3	1.5	75
KeyPlex Citrus Micronutrients + Nitrogen	4-0-0	Not stated	N/A
Lesco Palm & Tropical	13-13-13	3.25	25
Lesco Pro Landscape & Ornamental	12-12-12	6.6	55
Lesco Pro Turf Fertilizer	16-4-8	2	12
Lesco Pro Turf Fertilizer	26-2-11	6.5	25

PRODUCT NAME	LABEL ANALYSIS	% Actual SRN (stated on label)	% N as SRN
Lesco St Augustine Weed & Feed: w/ Penoxulam	17-0-7	2.63	15
Lilly Miller Ultra Green, Citrus + Avocado	10-6-4	2	20
Lutz Palm Tree Maintenance Spikes	6-0-6	Not stated	N/A
Man Power Manganese Sulfate	0-0-0-31.8Mn	N/A	N/A
Medina Growing Green Pasteurized Chicken Manure	4-2-3	2	50
Milorganite	5-2-0-5Fe	4.5	90
Miracle Grow	36-0-6	0	0
Miracle Grow All Purpose Organic Plant Food	7-1-2	4.2	60
Miracle Grow Blood Meal	12-0-0	12	100
Miracle Grow Watering Can Singles	24-8-16	Not stated	N/A
Miracle-Gro Nursery Select	30-10-10	0	0
Miracle-Gro All Purpose Plant Food	24-8-16	0	0
Miracle-Gro All Purpose Plant Food	20-20-20	Not stated	N/A
Miracle-Gro Bloom Booster	10-52-10	0	0
Miracle-Gro Liquid Feed All Purpose Plant Food	12-4-8	Not stated	N/A
Miracle-Gro Liquid Feed Bloom Buster Flower Food	12-9-6	Not stated	N/A
Miracle-Gro Orchid Food	30-10-10	0	0
Miracle-Gro Shade 'n Feed Palm Plant Food	8-8-8	5.5	69
Miracle-Gro Shake 'n Feed	10-10-10	7	70
Miracle-Gro Shake 'n Feed Citrus, Avocado, Mango	13-7-13	10	77
Miracle-Gro Water Soluble Miracid	30-10-10	0	0
Organic Neptune Seaweed Plant Food	0-0-1	N/A	N/A
Osmocote	19-6-12	16	84
Osmocote Flower + Vegetable	14-14-14	12	86
Osmocote Outdoor + Indoor	19-6-12	16	84

PRODUCT NAME	LABEL ANALYSIS	% Actual SRN (stated on label)	% N as SRN
Osmocote Plus Multi-Purpose Plant Food	15-9-12	12.7	85
Peggy Green Flower Minerals Natural & Organic Plant Food	0-0-0	N/A	N/A
Peggy Green Garden Minerals Natural & Organic Plant Food	0-0-0	N/A	N/A
Pennington	12-5-7	9.7	80
Pennington Lawn Fertilizer	18-24-6	3.8	21
Pennington Mulch+ Seed+ Fertilizer	1-0-0	0	0
ProSource One	8-2-10	4	50
ProSource One Magic Carpet	16-0-8	0.4	2.5
ProSource One ProForma Professional Fertilizer	8-2-10	2.3	28
ProSource One ProForma	6-4-16	0.34	6
Rite Green Magnesium Sulfate	0-0-0-16 Mg	N/A	N/A
Rite Green Manganese Sulfate	0-0-0-27 Mg	N/A	N/A
Rite Green Vegetable Garden	10-10-10	5	50
Rite Green Weed & Feed	17-0-6	Not stated	N/A
Schultz Plant Food	10-15-10	0	0
Scotts Bonus Max Southern Weed & Feed	30-2-9	9	30
Scotts Bonus S	29-1-10	8.7	30
Scotts Bonus S Weed & Feed	29-1-10	8.7	30
Scotts Bonus-S Southern Weed & Feed	29-1-10	1	3
Scotts EZ seed mulch+seed+ fertilizer	1-0-0	0.55	55
Scotts Green Max	26-0-2	Not stated	N/A
Scotts Green Max Southern Lawn + Iron	26-0-2-5.17Fe	5.9	23
Scotts Green Max Southern Lawn Fertilizer + Iron	22-2-2-5.75Fe	4.4	20
Scotts LawnPro Weed & Feed	26-0-3	0.7	17
Scotts Liquid Turf Builder	29-2-3	17.4	60

PRODUCT NAME	LABEL ANALYSIS	% Actual SRN (stated on label)	% N as SRN
Scotts Mow Less	19-0-2	4.2	22
Scotts Natural Lawn Food	11-2-2	10	91
Scotts Peters Professional	20-20-20	0	0
Scotts Snap Pac	26-0-4	4.6	18
Scotts Snap Pac	26-4-2-2Fe	4.6	18
Scotts Snap Pac Weed & Feed	32-0-4	9.6	30
Scotts Southern Turf Builder	26-2-13-2Fe	0.9	3
Scotts St. Augustine Weed & Feed	15-0-4	Not stated	N/A
Scotts Turf Builder	32-0-10	10	31
Scotts Turf Builder + Insecticide	20-0-8	3	15
Scotts Turf Builder Lawn Food	32-0-10-2Fe	10.5	33
Scotts Turf Builder Starter	24-25-4	6.2	2
Southern Ag Calcium Nitrate Vegetables & Annual Flowers	15-0-0-19Ca	Not stated	N/A
Southern Ag Chelated Liquid Iron	0-0-0-5	N/A	N/A
Southern Ag Citrus Nutritional Spray And other tropical fruits	0-0-0-5Fe	N/A	N/A
Southern Ag Essential Minor Elements	0-0-0	N/A	N/A
Southern Ag Magnesium Sulfate	0-0-0-16Mg	N/A	N/A
Southern Ag Manganese Sulfate	0-0-0-29Mn	N/A	N/A
Southern Ag Palm Nutrition Spray	0-0-0	N/A	N/A
Southern Ag Plant Starter w/ micronutrients	12-48-8	Not stated	N/A
Southern Ag Sulfate of Potash	0-0-50	N/A	N/A
Sta Green	29-0-5	6.8	23
Sta Green Lawn Fertilizer	29-0-5-2Fe	6.8	23
Sta Green Phosphorous Free Southern Weed & Feed	20-0-5-5S	Not Stated	N/A
Start-N-Grow	25-0-4	7.5	30
Sunniland Rite Green Magnesium Sulfate	0-0-0-16Mg	N/A	N/A

PRODUCT NAME	LABEL ANALYSIS	% Actual SRN (stated on label)	% N as SRN
Sunniland	20-0-6	10	50
Sunniland Azalea Camelia & Gardenia	8-4-8	0.9	11
Sunniland Bloom Special Fertilizer	2-10-10	0.7	35
Sunniland Citrus Avocado Mango	6-4-6	3	50
Sunniland Citrus, Avocado & Mango	6-4-6	0.9	15
Sunniland Lawn + Garden Lime	0-0-0	N/A	N/A
Sunniland Nitrogen Lawn Fertilizer	16-0-8	8	50
Sunniland Organic Fertilizer	6-6-6	2	33
Sunniland Palm Fertilizer	6-1-8	0	0
Sunniland Palm Fertilizer	8-6-6	Not Stated	N/A
Sunniland Rite Green Manganese Sulfate	0-0-0-27 Mg	N/A	N/A
Sunniland Turf Gro	16-0-8	2.5	16
Sunniland Turf Gro Pro Weed & Feed	16-0-8	8	50
Sunniland Turf Gro Tree, Shrub & Ornamental	8-0-10	4	50
Sunniland Turf Pro Turf Fertilizer	24-0-11	12	50
Sunniland, Turf Gro Pro w/ insect control	15-0-15	7.5	50
Sure-Gro Annuals & Bedding Plants Special	14-12-14	0	0
Sure-Gro Bougainvillea & Bloom Special	6-8-10	2.4	40
Sure-Gro Bougainvillea & Bloom Special	12-4-12	1.39	11
Sure-Gro Nursery Polyon	8-2-12	7.11	89
Sure-Gro Palm Fertilizer	8-2-12	0	0
Sure-Gro Palms, Trees & Shrubs Special	12-4-12	2.13	18
Sure-Gro Rose Special	10-6-8	3.29	33
Sur-Gro more recent Palm Fertilizer	8-2-12	6	75
Vigoro Bold Blooms	15-30-15	3.2	21
Vigoro Lawn Fertilizer	29-0-4	5.9	20

PRODUCT NAME	LABEL ANALYSIS	% Actual SRN (stated on label)	% N as SRN
Vigoro Palm, Ixora & Ornamental Food	8-4-8	1.2	15
Vigoro Rose Plant Food	12-6-10	4.1	34
Vigoro Starter	20-27-5	4.1	20
Vigoro Supergreen Lawn Fertilizer	35-0-5-5Fe	12	37
Vigoro Tree, Shrub & Evergreen	16-4-8	14.3	89
Vigoro Ultra Turf for Bahia + Mixed Lawns	28-0-3	4.5	16
Vigoro Ultra Turf Southern Weed & Feed	29-0-4	7.2	25

Figure 1. Plant and organic categories of fertilizers as sold in Lee County, Florida

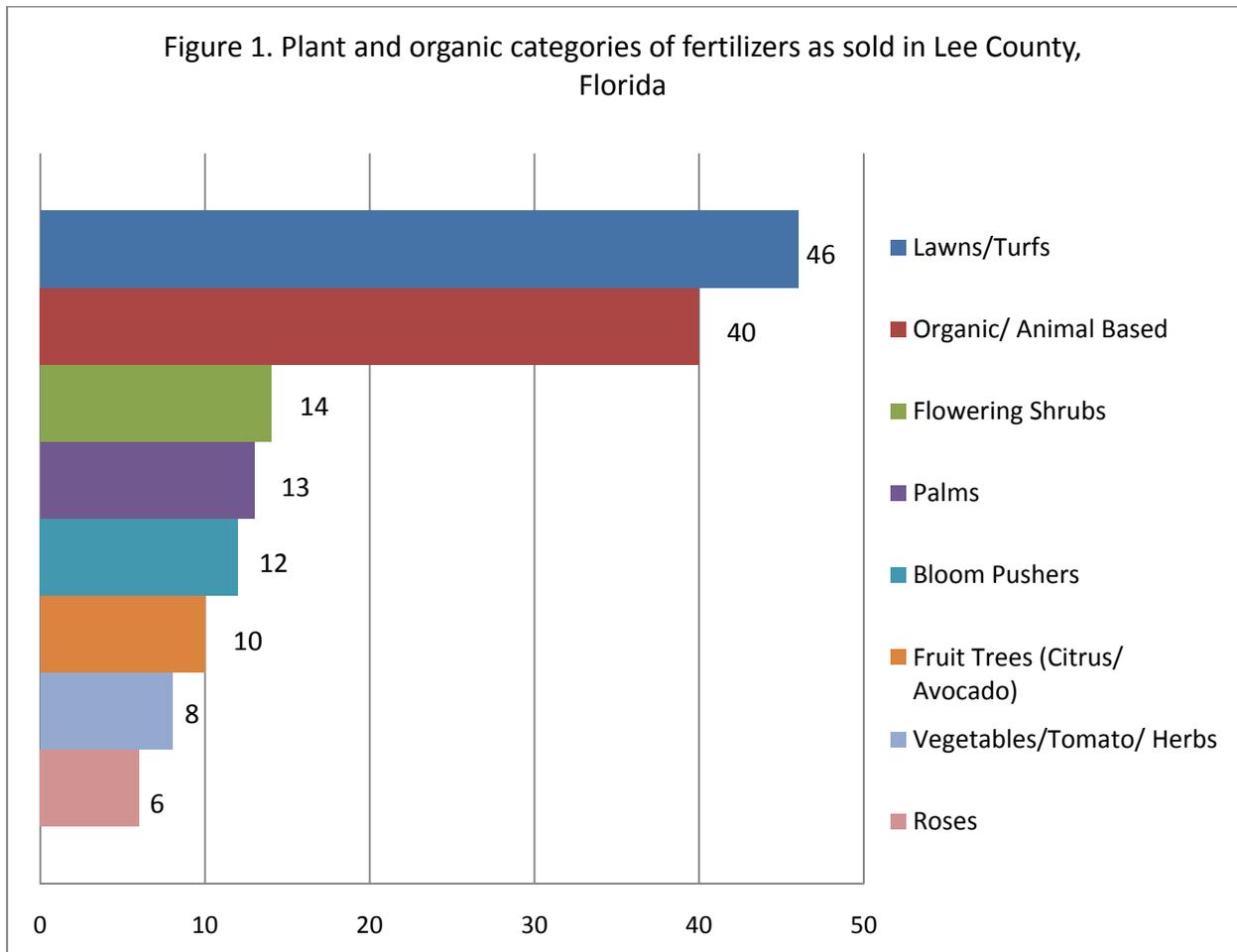


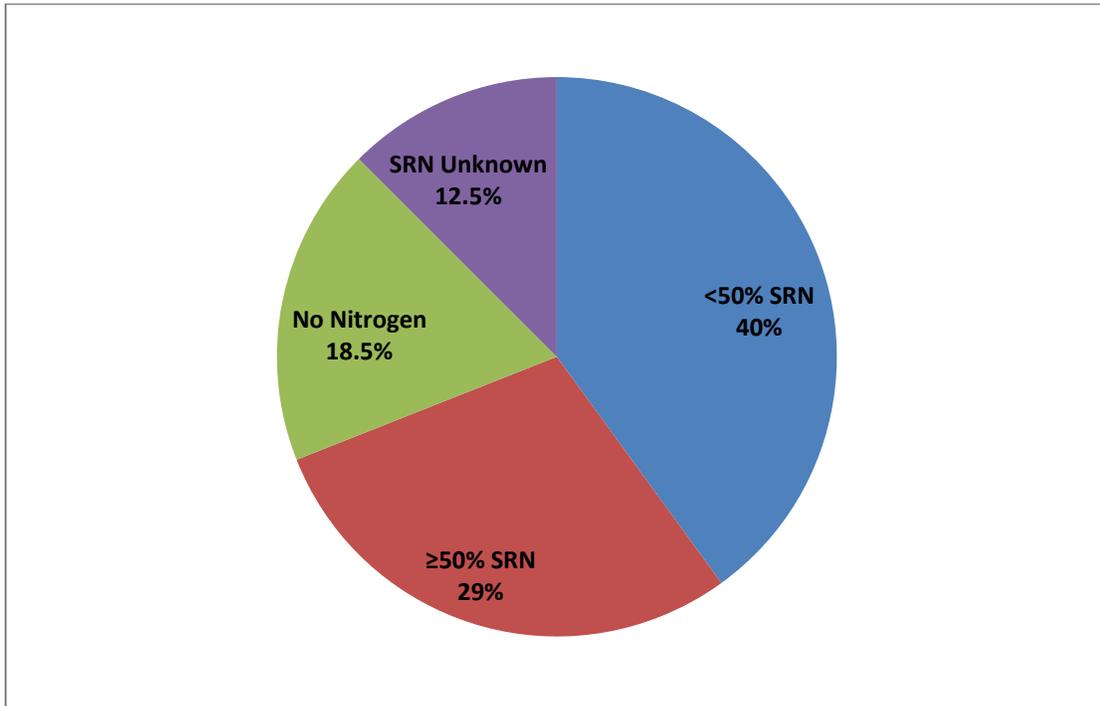
Table 2. Analysis of fertilizers for particular plant types sorted according to highest Nitrogen content.

Turfs/Lawns	Flowering Shrubs	Palms	Bloom Pushers	Fruit Trees (Citrus, Avocado)
35-0-5	15-0-0	13-13-13	15-30-15	13-7-13
32-0-4	14-14-14	13-5-11	12-55-6	13-5-11
32-0-10 (x2)	14-12-14	12-4-12	12-10-10	10-6-4
32-0-10	13-13-13	8-8-8	12-9-6	7-4-2 (x2)
30-3-4	12-9-6	8-6-6	12-4-12	6-4-6 (x2)
30-2-9	12-6-8	8-4-8	11-35-15	6-3-2
29-2-3	12-4-12	8-2-12 (x3)	10-52-10	5-2-6
29-1-10 (x2)	12-0-0	6-1-8	10-30-20	0-0-0
29-0-5	8-4-8	6-0-6	9-59-8 (x2)	
29-0-4 (x2)	6-8-10	4-1-5	6-8-10	
29-0-3 (x2)	4-1-5	0-0-0	3-4-5	
26-2-13	3-4-5			
26-2-11	0-10-0			
26-0-3	0-0-0			
26-0-2				
25-0-4				
24-25-4				
24-0-11				
22-2-2				
20-27-5				
20-0-8				
20-0-5				
20-0-10				
19-0-2				
18-24-6				
18-0-3 (x2)				
17-0-7				
17-0-6				
16-4-8				
16-0-8 (x3)				
16-0-8				
15-0-4 (x2)				
15-0-15				
11-2-2				
8-0-10				
6-3-2				
0-0-16				
0-0-0				

Table 3. Types of fertilizers sold in Lee County and their nitrogen contents

Types of Fertilizers	Numbers of Analysis/Brands	Percentage
<50% SRN	79	40%
≥50% SRN	58	29%
No nitrogen	37	18.5%
SRN Unknown	25	12.5%
Total	199	100%

Figure 2. Types of fertilizers sold in Lee County and their nitrogen contents



Conclusions: The results of the survey indicate that as a category fertilizers sold in Lee County are largely for the purpose of turf/lawn applications. Most do not meet the requirements of Ordinance 08-08 for 50% or more SRN. Thus, there is room for growth of SRN products in Lee County. The high occurrence of nitrogen and phosphorus analysis fertilizers (94.5%) being sold in the rainy season implies that retailers are either unaware of the ordinance or find insufficient reasons to sell “summer blends” during the summer

Useful References

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[Lee County Fertilizer Ordinance webpage](http://www.lee-county.com/gov/dept/NaturalResources/WaterQuality/Pages/FertilizeSmart.aspx) <http://www.lee-county.com/gov/dept/NaturalResources/WaterQuality/Pages/FertilizeSmart.aspx>

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