**GENERIC**
† 0/1 Indicator Variables

**ID-** Unique, random 4 digit ID number assigned to each participant

**lawn-** Have lawn responsible for maintaining
   1 "Yes" 0 "No"

**fertilized-** Whether or not fertilized lawn last year and did it themselves of hired contractor
   1 "DIY" 2 "Contractor" 0 "Not Fertilized"

**fertilized2†-** Lawn was fertilized last year

**selffert†-** Lawn was fertilized- homeowner did it their self

**contfert†-** Lawn was fertilized- homeowner hired a contractor

**attractive-** Likert for how important an attractive lawn is
   1 "Very Unimportant" 2 "Unimportant" 3 "Neutral" 4 "Important" 5 "Very Important"

**appmethod-** Spreader used to apply fertilizer
   1 “Drop” 2 “Broadcast” 3 “Hand” 4 “By Hand” 5 “Liquid” 17 “Not Applicable” 18 “Don’t Know”

**association-** Live in a Neighborhood or Homeowners Association
   1 “HOA” 2 “NA” 0 “Neither”

**hoa†-** Lives in an HOA

**neighass†-** Lives in a Neighborhood Association

**hoarules-** HOA or NA has rules with regards to lawn care
   1 “Yes, and I followed them” 2 “Yes, but I did not follow them” 0 “No”

**hoarules2†-** HOA or NA has rules with regards to lawn care (simplified)

**freqwater-** Frequency waters lawn when no drought
   0 “Never” 1 “Daily” 2 “Every Other Day” 3 “Twice a Week” 4 “Once a Week” 5 “2-3 Times a Month” 17 “NA”

**sprinkler†-** Has an in-ground sprinkler system

**automated†-** In-ground system is automated
**hoasprink** - Interaction term for living in an HOA and having an in-ground sprinkler system

**BMPs**

**bmp** - Know the term “Best Management Practice”
   1 “Know what it Means” 2 “Sounds Familiar” 0 “Don’t Know”

**learn** - Would like to learn more about best ways to fertilize lawn/garden
   1 "Yes" 0 "No"

**sweeps** - Homeowner or contractor sweeps impervious surface after fertilizing
   1 “Never” 2 "Rarely" 3 "Sometimes" 4 "Usually" 5 “Always” 17 “NA”

**fertstrms** - Homeowner or contractor applies fertilizer to stream banks
   1 “Never” 2 "Rarely" 3 "Sometimes" 4 "Usually" 5 “Always” 17 “NA”

**bfrains** - Homeowner or contractor applies fertilizer right before it rains
   1 “Never” 2 "Rarely" 3 "Sometimes" 4 "Usually" 5 “Always” 17 “NA”

**mulches** - Homeowner or contractor mulches grass clippings
   1 “Never” 2 "Rarely" 3 "Sometimes" 4 "Usually" 5 “Always” 17 “NA”

**tested** - Soil tests are performed...
   1 “Never” 2 “3 Years or Less” 3 “Every Other Year” 4 “Yearly” 17 “NA”

**limed** - Lime is applied to the lawn...
   1 “Never” 2 “3 Years or Less” 3 “Every Other Year” 4 “Yearly” 5 “When Testing Says To” 17 “NA”

**readlbl** - Homeowner reads label on fertilizer bags
   1 “Never” 2 "Rarely" 3 "Sometimes" 4 "Usually" 5 “Always” 17 “NA”

**followlbl** - Homeowner follows label on fertilizer bags
   1 “Never” 2 "Rarely" 3 "Sometimes" 4 "Usually" 5 “Always” 17 “NA”

**GRASSES**
† 0/1 Indicator Variables

**coolgrs** - Percent of lawn cool season grass
   0 “None” 1 “<25%” 2 “25-50%” 3 “50-75%” 4 “>75%” 18 “Don’t Know”

**cjanuary~december** - cool season grass fertilized in this month
Fertilizer Variable Guide

**cidk↑**- Does not know what months cool season grass was fertilized in

**cna↑**- Fertilizing cool season grass not applicable

**cfert**- Number of months cool season grass fertilized in

**coos↑**- Cool season grass fertilized in the WRONG month (January, April, May, June, July, August, December)

**warmgrs**- Percent of lawn warm season grass

- 0 “None”
- 1 “<25%”
- 2 “25-50%”
- 3 “50-75%”
- 4 “>75%”
- 18 “Don’t Know”

**wjanuary~december↑**- Warm season grass fertilized in this month

**widk↑**- Does not know what months warm season grass was fertilized in

**wna↑**- Fertilizing warm season grass not applicable

**wfert**- Number of months warm season grass fertilized in

**woos↑**- Warm season grass fertilized in the WRONG month (January, February, March, June, September, October, November, December)

**grass**- Amount of each type of grass reported to have in lawn

- 0 “None of Either”
- 1 “75% Cool 25% Warm”
- 2 “75% Warm, 25% Cool”
- 3 “All Cool”
- 4 “All Warm”
- 18 “Did Not Know”

**DIY FERTILIZER**

↑ 0/1 Indicator Variables

**bagsize**- Size of bag(s) purchased last year

- 1 “Small (~15 lbs, 5,000 sqft)”
- 2 “Medium (~30 lbs, 10,000 sqft)”
- 3 “Large (~45 lbs, 15,000 sqft)”
- 15 “Do Not Recall”

**bagnumb**- Number of bags purchased last year

- 1 - 8 “1 - 8”
- 20 “Other”
- 15 “Do Not Recall”

**bagquant**- Quantity of bag applied with each application

- 1 “All”
- 2 “3/4 Bag”
- 3 “1/2 Bag”
- 4 “1/4 Bag”
- 15 “Do Not Recall”

***Fertilizer type list and fertilizer rate variables at end of this document***

**Contractor**

↑ 0/1 Indicator Variables
attention- I pay attention to how much fertilizer my contractor applies
   1 “Never” 2 "Rarely" 3 "Sometimes" 4 "Usually" 5 “Always”
   6 “I Can’t” 17 “NA”

procosts- Costs of professional lawn care last year (if services included fertilizer application)

profert†- Contractor applied fertilizer (all yes)
proweed†- Contractor treated for weeds
protrim†- Contractor mowed lawn
proedge†- Contractor edged lawn
proleafremov†- Contractor removed leaves
proaeration†- Contractor aerated lawn
prooverseed†- Contractor over-seeded lawn
proprun†- Contractor pruned trees and shrubs
progrub†- Contractor treated for white grubs
proorganic†- Contractor provided organic-only option
proother†- Other contractor services
pronum- Number of contractor services payed for

LAWN SIZE

lotsize- Reported lot size in acres
invlotsize- Inverse of reported lot size

lotmowed- Estimated percentage of total lot that is mowed
   0 “None” 1 “10%” 2 “25%” 3 “33%” 4 “50%” 5 “66%” 6 “75%” 7 “90%”

lowmowed2- Estimated percentage of total lot that is mowed (percentage equivalents)
sqft- Estimated square footage of lawn (lotsize*lotmowed2*43,560)
**Fertilizer Variable Guide**

- **sqft2**: Estimated square footage of lawn (SUM_ACRE*lotmowed2*43,560)

**TEST**
† 0/1 Indicator Variables
*correct answer in italics*

- **test_tf**: Adding more fertilizer makes grass greener- True or False
  1 "True" 2 “False” 18 "Don’t Know"

- **test_rate**: Percentage of bag to apply to achieve application rate
  1 “All of bag” 2 “3/4 of Bag” 3 “1/2 of Bag” 4 “1/4 of Bag” 18 “Don’t Know”

- **test_npk**: What do numbers 10-1-5 mean?
  1 “Pounds NKP” 2 “Percent NPK” 3 “Percent PNK” 4 “Percent NKP” 18 “Don’t Know"

- **allcorr†**: Got all three test questions correct

**GEOGRAPHY**
† 0/1 Indicator Variables

- **pop~**: Present on property
- **md~**: Most dominant on property
- **ld~**: Least dominant on property

- **~vs†**: Very steep slope
- **~ss†**: Steep slope
- **~gs†**: Gentle slope
- **~ft†**: Flat, top of slope
- **~fb†**: Flat, bottom of slope

- **river**: River or stream on or near property
  0 "None" 1 “Runs Through Property” 2 “Borders Property” 3 “Runs w/i 100 ft of Property” 4 “Runs w/i 500 ft of Property”

- **lake**: Lake or pond on or near property
  0 "None" 1 “Present on Property” 2 “Borders Property” 3 “Present w/i 100 ft of Property” 4 “Present w/i 500 ft of Property”
**bank**†- Property near enough (w/i 100 ft) to lake or stream to have a bank on property

**DEMOGRAPHICS**
† 0/1 Indicator Variables

**occupants**- Number of occupants in the home

**yrsataddr**- Years lived at address

**own**- Own or rent
   1 “Own” 2 “Rent” 19 “Prefer Not to Say”

**age**- Age in years

**education**- Reported highest level of education completed
   1 “Some High School” 2 “High School or GED” 3 “Some College”
   4 “Completed College” 5 “Graduate Degree” 6 “Some Technical”
   7 “Completed Technical” 19 “Prefer Not to Say”

**education2**- Reported highest level of education completed (simplified)
   1 “Some High School” 2 “High School or GED”
   3 “Some College or Technical” 4 “Completed College or Technical”
   5 “Graduate Degree”

**income**- Reported household income range
   1 “<$20K” 2 “$20-40K” 3 “$40-60K” 4 “$60-80K” 5 “$80-100K”
   6 “$100-120K” 7 “$120-140K” 8 “>$140K” 19 “Prefer Not to Say”

**income2**- Median of reported household income range (>=$140K range median set to $230K)

**income3**- Median of reported household income range PLUS weighted income based on education level for respondents with no reported income

**MISCELLANEOUS**
† 0/1 Indicator Variables

**paper**†- Responses from paper survey

**full**†- Responses from full survey

**finished**†- Survey was completed (yes for all respondents)
sample- Sample area respondent associated with

region- General region of county sample area is located in
1 “Urban/Down Town” 2 “Suburban/City Outskirts”
3 “Rural/Outside City Limits”

targeted†- Response is from one of the targeted (not randomly selected) areas

**VOTER REGISTRATION VARIABLES**
† 0/1 Indicator Variables

**party**- Reported party
DEM “Democrat” REP “Republican” LIB “Libertarian” UNA “Unaffiliated”

**party2**- Reported party (numerically recoded- libertarian dropped (n=1))
1 “Democrat” 2 “Republican” 3 “Unaffiliated”

**eth**- Reported ethnicity
HL “Hispanic” NL “Not Hispanic” UN “Would Not Say”

**white†**- Respondent is white

**mage**- Mean age of registered voters in household (rounded to nearest integer)

**TAX PARCEL VARIABLES**
† 0/1 Indicator Variables

**SUM_ACRE**- Total acreage of parcel (rounded to nearest hundredth of an acre)

**invSUM_ACRE**- Inverse of total acreage of the parcel

**TOTAL_VALU**- Total tax value of land and buildings on parcel (rounded to nearest $1,000)

**HOA†**- Home located in a neighborhood with an HOA

**FERTILIZER RATE**
† 0/1 Indicator Variables

**ttlbag**- Total types of bags reported purchased last year

**ttlbag2**- Ratio of bags purchased to bag types indicated (bagnumb/ttlbag)
**Fertilizer Variable Guide**

**fertnonresponse†**- Respondent did not indicate any types purchased

**lotnonresponse†**- Respondent did not indicate a lot size

**sqft**- Square footage of lawn based on reported data (lotsize*lotmowed2*43560)

**sqft2**- Square footage of lawn based on reported area mowed and tax parcel data (SUM_ACRE*lotmowed2*43560)

**ttlns**- Pounds of N applied last year, based on small bag sizes of reported bag types

**ttlnb**- Pounds of N applied last year, based on large bag sizes of reported bag types

**ttlin**- Total pounds of N applied last year based on reported size of bags purchased-equals ttlns if bagsize=1, ttlnb if bagsize=3, or average of ttlns and ttlnb if bagsize=2

**ttln2**- Total pounds of N applied last year after adjusting for ttlbag2 (ttln*ttlbag2)

**nrate**- Nitrogen application rate in lbs per 1,000 sqft per year (ttln2/sqft*1000), using reported lot size

**nrate2**- Nitrogen application rate in lbs per 1,000 sqft per year (ttln2/sqft2*1000), using Tax Parcel lot sizes

**nrate3**- Nitrogen application rate in lbs per 1,000 sqft per year (ttln2/sqft*1000), using reported lot size, only includes observations with BOTH a reported lot size value AND a Tax Parcel lot size value (for comparison)

**nrate4**- Nitrogen application rate in lbs per 1,000 sqft per year (ttln2/sqft2*1000), using Tax Parcel lot size, only includes observations with BOTH a reported lot size value AND a Tax Parcel lot size value (for comparison)

**nratehigh**- Nitrogen application rate in lbs per 1,000 sqft per year, assuming all respondents purchased only large bags (ttlnb*ttlbag2/sqft*1000)

**nhigh†**- Indicator for applying more than 2 lbs N/1,000 sqft/yr

**nhighhigh†**- Indicator for applying more than 2 lbs N/1,000 sqft/yr, based on nratehigh

**ttips**- Pounds of P applied last year, based on small bag sizes of reported bag types

**ttlpb**- Pounds of P applied last year, based on large bag sizes of reported bag types

**ttlp**- Total pounds of P applied last year based on reported size of bags purchased-
equals ttlps if bagsize=1, ttlpb if bagsize=3, or average of ttlps and ttlpb if bagsize=2

ttlp2- Total pounds of P applied last year after adjusting for ttlbag2 (ttlp*ttlbag2)

prate- Phosphorus application rate in lbs per 1,000 sqft per year (ttlp2/sqft*1000)

pratehigh- Phosphorus application rate in lbs per 1,000 sqft per year, assuming all respondents purchased only large bags (ttlpb*ttlbag2/sqft*1000)

phigh†- Indicator for applying more than 0.5 lbs P/1,000 sqft/yr

phighhigh†- Indicator for applying more than 0.5 lbs P/1,000 sqft/yr, based on pratehigh

ttlks- Pounds of K applied last year, based on small bag sizes of reported bag types

ttlkb- Pounds of K applied last year, based on large bag sizes of reported bag types

ttlk- Total pounds of K applied last year based on reported size of bags purchased-equals ttlks if bagsize=1, ttlkb if bagsize=3, or average of ttlks and ttlkb if bagsize=2

ttlk2- Total pounds of K applied last year after adjusting for ttlbag2 (ttlk*ttlbag2)

krate- Potassium application rate in lbs per 1,000 sqft per year (ttlk2/sqft*1000)

kratehigh- Potassium application rate in lbs per 1,000 sqft per year, assuming all respondents purchased only large bags (ttlbkb*ttlbag2/sqft*1000)

khigh†- Indicator for applying more than 1 lbs K/1,000 sqft/yr

khighhigh†- Indicator for applying more than 1 lbs K/1,000 sqft/yr, based on kratehigh

**FERTILIZER TYPES**
† 0/1 Indicator Variables
*For summary of associated NPK values and weights, see the table at the end*

glawnfert†- Generic lawn fertilizer

gweedfeed†- Generic weed and feed

gstarter†- Generic starter

gwinter†- Generic winterizer
gorganic†- Generic organic fertilizer

gallpurpose10†- Generic all purpose 10-10-10

gallpurpose17†- Generic all purpose 17-17-17

eglawnfert†- Expert Gardener lawn fertilizer

egweedfeed†- Expert Gardener weed and fee

lproturf†- Lesco Pro Turf fertilizer

lproweedfeed†- Lesco Pro weed and feed

lprostarter†- Lesco Pro starter

lrowinter†- Lesco Pro Fall/Winter

morganic†- Milogranite Organic fertilizer

pstarter†- Pemington starter

slawnfert†- Scotts lawn fertilizer

sweedfeed†- Scotts Bonus S weed and feed

ssgmaxfe†- Scotts Southern Green Max with Iron

stblawnfert†- Scotts Southern Turf Builder lawn fertilizer

stbweedfeed†- Scotts Turf Builder Plus 2 weed and feed

stbstarter†- Scotts Turf Builder starter

stbwinter†- Scotts Turf Builder Winterguard

stbwinterweed†- Scotts Turf Builder Winterguard Plus 2 winter weed and feed

sglawnfert†- Sta-Green lawn fertilizer

sgweedfeed†- Sta-Green weed and feed

sgwinter†- Sta-Green winterizer

vlawnfert†- Vigoro lawn fertilizer
Fertilizer Variable Guide

**vultraturf**: Vigoro Ultra-Turf

**vsupergreen**: Vigoro Super Green

**vweedfeed**: Vigoro weed and feed

**vstarter**: Vigoro starter

~N- Percentage of bag type that is mineral N

~P- Percentage of bag type that is mineral P

~K- Percentage of bag type that is mineral K

~lbs- Size, in pounds, of a small bag of the given type

~lbb- Size, in pounds, of a large bag of the given type
<table>
<thead>
<tr>
<th>Type</th>
<th>N-P-K</th>
<th>Large</th>
<th>Small</th>
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<td>1,000 sq ft</td>
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<td>50   12.5  -</td>
<td>-</td>
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<td>18   24  12</td>
<td>50   12   -</td>
<td>-</td>
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<tr>
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<td>50   12   -</td>
<td>-</td>
</tr>
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<td>50   12   -</td>
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<td>11   2   2</td>
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<td>43   15   -</td>
<td>-</td>
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<td>-    -    13</td>
<td>5</td>
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<td>42   15   -</td>
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<td>Starter</td>
<td>20   27  5</td>
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<td>5</td>
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<td>5</td>
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<tr>
<td>Generic Organic</td>
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<td>-</td>
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