Fertilizers and Chemicals Applied: 2017, 2012, and 2007											
Manure Manure											
Geography	Land Area in Square Miles 1	2017 Acres Treated	2017 Square Miles Treated 2	% of Land Area Treated 3	2012 Acres Treated	2012 Square Miles Treated 2	% of Land Area Treated 3		2007 Square Miles Treated 2	% of Land Area Treated 3	% of Area Treated Increase or Decrease 4
Adair County	567	5,757	9	1.59%	3,746	6	1.03%	3,064	5	0.84%	0.74%
Andrew County	436	2,759	4	0.99%	3,094	5	1.11%	2,591	4	0.93%	0.06%
Atchison County	560	4,167	7	1.16%	6,642	10	1.85%	639	1	0.18%	0.98%
Audrain County	692	17,164	27	3.88%	10,664	17	2.41%	7,653	12	1.73%	2.15%
Barry County	773	27,181	42	5.49%	23,559	37	4.76%	39,181	61	7.92%	-2.43%
Barton County	597	20,170	32	5.28%	17,467	27	4.57%	13,462	21	3.52%	1.76%
Bates County	849	10,130	16	1.86%	11,571	18	2.13%	7,937	12	1.46%	0.40%
Benton County	729	7,226	11	1.55%	9,574	15	2.05%	6,632	10	1.42%	0.13%
Bollinger County	621	2,350	4	0.59%	1,655	3	0.42%	4,186	7	1.05%	-0.46%
Boone County	687	4,824	8	1.10%	3,279	5	0.75%	3,385	5	0.77%	0.33%
Buchanan County	409	1,380	2	0.53%	1,415	2	0.54%	1,809	3	0.69%	-0.16%
Butler County	698	730	1	0.16%	1,086	2	0.24%	849	1	0.19%	-0.03%
Caldwell County	431	1,499	2	0.54%	1,519	2	0.55%	1,773	3	0.64%	-0.10%
Callaway County	842	5,737	9	1.06%	7,552	12	1.40%	6,179	10	1.15%	-0.08%
Camden County	641	2,360	4	0.58%	1,301	2	0.32%	2,276	4	0.55%	0.02%
Cape Girardeau County	577	7,401	12	2.00%	5,894	9	1.60%	7,073	11	1.92%	0.09%
Carroll County	695	2,583	4	0.58%	3,053	5	0.69%	4,300	7	0.97%	-0.39%
Carter County	509	489	1	0.15%	(D)			1,728	3	0.53%	-0.38%
Cass County	702	4,391	7	0.98%	4,276	7	0.95%	7,381	12	1.64%	-0.67%

## Fertilizers and Chemicals Applied: 2017, 2012, and 2007 Manure 2017 Square % of Land Area 2012 Square 2007 Square % of Area Treated Land Area 2012 Acres % of Land Area 2017 Acres 2007 Acres % of Land Area Miles Treated 2 Geography in Square Miles 1 Treated Miles Treated 2 Treated 3 Treated Treated 3 Treated Miles Treated 2 Treated 3 Increase or Decrease 4 1.87% Cedar County 471 5,628 9 6,431 10 2.13% 2,830 0.94% 0.93% **Chariton County** 758 6,802 11 1.40% 3,505 0.72% 3,899 0.80% 0.60% Christian County 564 8,247 13 2.28% 5,349 1.48% 4,771 1.32% 0.96% 2,332 2,521 Clark County 507 0.72% 0.78% 2.901 0.89% -0.18% 4 Clay County 403 1,658 3 0.64% 1,444 0.56% 1,319 0.51% 0.13% 423 1.87% 0.52% 1.35% Clinton County 5.072 8 919 0.34% 1.410 5,968 392 6,560 2.38% 3.75% Cole County 10 2.61% 9,399 15 -1.13% 2.30% Cooper County 566 8,336 13 15,964 25 4.41% 6,248 10 1.72% 0.58% Crawford County 744 1,380 2 0.29% 1,175 0.25% 2,630 0.55% -0.26% **Dade County** 491 15,238 24 4.85% 18,758 29 5.97% 15,728 25 5.01% -0.16% 12,263 **Dallas County** 543 9,458 15 2.72% 19 3.53% 11,427 18 3.29% -0.57% **Daviess County** 1.51% 568 5,495 9 2,790 0.77% 5,593 1.54% -0.03% DeKalb County 425 2,014 3 0.74% 3,819 1.40% 3,640 1.34% -0.60% 755 Dent County 1,806 0.37% 2,197 0.45% 1,329 0.28% 0.10% Douglas County 4,300 0.83% 3,073 4,991 -0.13% 814 7 0.59% 0.96% **Dunklin County** 547 (D) 569 ---0.16% Franklin County 922 7,361 1.25% 9,473 1.61% 1.58% -0.33% 12 15 9,313 15 521 Gasconade County 5,635 9 1.69% 3,187 0.96% 6,368 10 1.91% -0.22% 0.77% Gentry County 493 2,422 4 4,212 1.33% 4,144 1.31% -0.55%

## Fertilizers and Chemicals Applied: 2017, 2012, and 2007 Manure 2017 Square % of Land Area 2012 Square 2007 Square Land Area 2012 Acres % of Land Area 2007 Acres % of Area Treated 2017 Acres % of Land Area Miles Treated 2 Geography in Square Miles 1 Treated Miles Treated 2 Treated 3 Treated Treated 3 Treated Miles Treated 2 Treated 3 Increase or Decrease 4 1.57% 2.28% Greene County 678 6,829 11 9.880 15 6,351 10 1.46% 0.11% **Grundy County** 437 4,809 8 1.72% 2,832 1.01% 2,871 1.03% 0.69% **Harrison County** 725 5,199 8 1.12% 2,584 0.56% 4,903 1.06% 0.06% 14,275 22 Henry County 729 3.06% 7.426 12 1.59% 6.027 1.29% 1.77% Hickory County 411 6,835 11 2.60% 6,466 10 2.46% 2,290 0.87% 1.73% 473 Holt County 456 1.744 3 0.60% 0.16% 836 0.29% 0.31% 1,531 0.52% 464 2 976 0.33% 622 0.31% **Howard County** 0.21% **Howell County** 927 8,537 12,092 19 2.04% 13 1.44% 11,521 18 1.94% 0.10% Iron County 552 384 0.11% 1,263 0.36% 563 0.16% -0.05% 1 Jackson County 611 1,816 3 0.46% 781 0.20% 1,756 0.45% 0.02% Jasper County 641 17,970 28 4.38% 15,212 24 3.71% 15,569 24 3.80% 0.59% 0.32% Jefferson County 668 1,373 2 1,944 0.45% 2,672 0.63% -0.30% Johnson County 834 14,906 23 2.79% 9,087 2.46% 0.33% 14 1.70% 13,148 21 507 3.53% **Knox County** 11,443 18 5,093 1.57% 4,546 1.40% 2.13% 6,449 1.31% 9,696 1.23% Laclede County 770 10 1.97% 6,075 0.08% 15 Lafayette County 632 9,597 15 2.37% 7,416 12 1.83% 13,857 22 3.43% -1.05% Lawrence County 24,254 38 6.17% 22,609 35 5.75% 26,965 6.86% -0.69% 614 42 4,225 2,000 0.62% 508 Lewis County 1.30% 3,925 1.21% 0.09% 627 3,632 7 Lincoln County 4,542 1.13% 0.91% 3,206 0.80% 0.33%

## Fertilizers and Chemicals Applied: 2017, 2012, and 2007 Manure 2017 Square % of Land Area 2012 Square 2007 Square Land Area 2012 Acres % of Land Area % of Area Treated 2017 Acres 2007 Acres % of Land Area Miles Treated 2 Treated 3 Geography in Square Miles 1 Treated Miles Treated 2 Treated 3 Treated Treated 3 Treated Miles Treated 2 Increase or Decrease 4 Linn County 620 8,554 13 2.16% 5,967 1.50% 5,929 1.49% 0.66% Livingston County 537 2,403 4 0.70% 1,287 0.37% 1,880 0.55% 0.15% McDonald County 21,572 541 34 6.23% 14,921 23 4.31% 21,812 -0.07% 34 6.30% Macon County 797 7.229 11 1.42% 4.673 0.92% 8.574 13 1.68% -0.26% **Madison County** 497 3,322 5 1.04% 1,627 0.51% 1,754 0.55% 0.49% 1.98% 4,573 Maries County 528 6.694 10 5.105 1.51% 1.35% 0.63% 3,200 438 3,220 5 1.15% 0.01% Marion County 1.14% 3,205 1.14% 7 2,923 Mercer County 454 4,354 1.50% 1.01% 5,583 1.92% -0.42% Miller County 593 14,344 22 3.78% 10,267 2.71% 10,934 17 2.88% 0.90% 16 Mississippi County 2 0.52% 410 1,367 (D) (D) ------Moniteau County 417 14,400 23 5.40% 13,073 20 4.90% 15,611 24 5.85% -0.45% Monroe County 670 8,126 13 1.90% 4,367 1.02% 5,166 1.20% 0.69% Montgomery County 540 2,295 0.66% 0.63% 3,935 2,182 1.14% -0.47% Morgan County 594 21,801 34 5.73% 20,563 32 5.41% 27,486 43 7.23% -1.50% New Madrid County 0.17% 0.23% 679 750 990 630 0.03% 1 0.14% **Newton County** 627 30,480 48 7.60% 21,897 34 5.46% 24,302 38 1.54% 6.06% **Nodaway County** 875 7,791 12 1.39% 2,856 0.51% 4,940 0.88% 0.51% Oregon County 792 2,582 0.51% 2,188 0.43% 1,394 0.28% 0.23% 4.16% Osage County 606 16,119 25 15,530 24 4.00% 18,586 29 4.79% -0.64%

Fertilizers and Chemicals Applied: 2017, 2012, and 2007											
Manure Manure											
Geography	Land Area in Square Miles 1	2017 Acres Treated	2017 Square Miles Treated 2	% of Land Area Treated 3	2012 Acres Treated	2012 Square Miles Treated 2	% of Land Area Treated 3		2007 Square Miles Treated 2	% of Land Area Treated 3	% of Area Treated Increase or Decrease 4
Ozark County	731	2,284	4	0.49%	2,713	4	0.58%	3,122	5	0.67%	-0.18%
Pemiscot County	517				(D)			(D)			
Perry County	473	2,773	4	0.92%	1,951	3	0.64%	4,451	7	1.47%	-0.55%
Pettis County	686	24,720	39	5.63%	22,740	36	5.18%	24,374	38	5.55%	0.08%
Phelps County	674	5,086	8	1.18%	944	1	0.22%	2,049	3	0.48%	0.70%
Pike County	673	4,580	7	1.06%	4,450	7	1.03%	5,795	9	1.35%	-0.28%
Platte County	421	1,250	2	0.46%	1,102	2	0.41%	1,736	3	0.64%	-0.18%
Polk County	642	15,715	25	3.82%	17,162	27	4.18%	11,631	18	2.83%	0.99%
Pulaski County	551	1,296	2	0.37%	843	1	0.24%	405	1	0.11%	0.25%
Putnam County	520	11,419	18	3.43%	3,758	6	1.13%	4,622	7	1.39%	2.04%
Ralls County	481	1,287	2	0.42%	2,902	5	0.94%	3,442	5	1.12%	-0.70%
Randolph County	473	3,261	5	1.08%	1,100	2	0.36%	2,442	4	0.81%	0.27%
Ray County	568	2,630	4	0.72%	1,925	3	0.53%	3,690	6	1.02%	-0.29%
Reynolds County	808	825	1	0.16%	746	1	0.14%	1,287	2	0.25%	-0.09%
Ripley County	632	3,254	5	0.80%	656	1	0.16%	1,985	3	0.49%	0.31%
Saint Charles County	558	2,678	4	0.75%	2,833	4	0.79%	3,211	5	0.90%	-0.15%
Saint Clair County	698	4,226	7	0.95%	3,979	6	0.89%	4,110	6	0.92%	0.03%
Sainte Genevieve County	504	1,864	3	0.58%	2,981	5	0.92%	4,666	7	1.45%	-0.87%
Saint Francois County	451	7,106	11	2.46%	1,451	2	0.50%	2,916	5	1.01%	1.45%

## Fertilizers and Chemicals Applied: 2017, 2012, and 2007 Manure 2017 Acres 2017 Square % of Land Area 2012 Square 2007 Square Land Area 2012 Acres % of Land Area % of Area Treated 2007 Acres % of Land Area Miles Treated 2 Geography in Square Miles 1 Treated Miles Treated 2 Treated 3 Treated Treated 3 Treated Miles Treated 2 Treated 3 Increase or Decrease 4 0.00% Saint Louis County 505 8 0 21 0.01% 342 0.11% -0.10% Saline County 755 9,866 15 2.04% 11,507 18 2.38% 6,081 10 1.26% 0.78% Schuyler County 308 2,839 1.44% 1,528 0.78% 2,298 1.17% 0.27% 23 5.25% **Scotland County** 439 14,741 9.616 15 3.42% 8.028 2.86% 2.39% 13 Scott County 423 4,311 1.59% 5,510 2.04% 6,886 11 2.54% -0.95% 2,301 0.36% Shannon County 1.004 4 1.605 0.25% 713 0.11% 0.25% 2,842 4,164 501 0.89% 1.30% -0.80% Shelby County 5,397 1.68% 1.42% 0.22% Stoddard County 815 7,423 12 3,691 0.71% 6,271 10 1.20% Stone County 451 4,894 8 1.70% 7,071 11 2.45% 6,159 10 2.13% -0.44% Sullivan County 651 6,176 10 1.48% 4,728 1.13% 11,165 17 2.68% -1.20% Taney County 608 1,516 2 0.39% 1,959 0.50% 1,225 0.31% 0.07% **Texas County** 1.25% 1,180 9,422 15 7,137 11 0.95% 6,584 10 0.87% 0.38% Vernon County 837 26,179 41 4.89% 16,093 25 12,675 2.37% 2.52% 3.00% 20 429 Warren County 2,839 1.03% 1,921 0.70% 3,477 1.27% -0.23% Washington County 0.17% 1,477 0.32% -0.15% 762 841 0.30% 1,572 1 Wayne County 763 618 0.13% 1,403 0.29% 10,966 2.25% -2.12% 1 17 Webster County 594 16,329 26 4.30% 11,869 3.12% 11,350 2.99% 1.31% 19 18 1,626 Worth County 3 568 266 0.96% 0.33% 1,790 1.05% -0.10% 2.35% Wright County 682 10,261 16 6,597 10 1.51% 7,712 12 1.77% 0.58%

Fertilizers and Chemicals Applied: 2017, 2012, and 2007											
Manure Manure											
	Land Area	2017 Acres	2017 Square	% of Land Area	2012 Acres	2012 Square	% of Land Area	2007 Acres	2007 Square	% of Land Area	% of Area Treated
Geography	in Square Miles 1	Treated	Miles Treated 2	Treated 3	Treated	Miles Treated 2	Treated 3	Treated	Miles Treated 2	Treated 3	Increase or Decrease 4
Saint Louis City 5	61										
Statewide	69,709	777,004	1,214	1.74%	648,298	1,013	1.45%	711,625	1,112	1.60%	0.147%

PRIMARY DATA SOURCES: 2017, 2012, and 2007 Census of Agriculture, United States Department of Agriculture (USDA), National Agricultural Statistics Service (NASS): Missouri State and County Data. (Survey conducted every five years.)

- 1 Land Area in Square Miles value is obtained from the Missouri Secretary of State's Missouri Roster
- 2 Square Miles Treated value is obtained by calculating Acres Treated value \* 0.0015625
- 3 % of Land Area Treated value is obtained by calculating Square Miles Treated value/Land Area in Square Miles value
- 4 % of Area Treated Increase or Decrease value is obtained by calculating 2017 % of Land Area Treated Value 2007 % of Land Area Treated Value 2007 % of Land Area Treated Value
- The USDA/NASS census definition of a farm is any place from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year. The definition is consistent with the definition used for current USDA surveys and was first used for the 1974 Census of Agriculture; and has been used in each subsequent agriculture census. St. Louis City does not contain any property(ies) that currently meet this definition per USDA.
- (D) Withheld to avoid disclosing data for individual farms, per USDA/NASS.