

# City of Columbia

701 East Broadway, Columbia, Missouri 65201



**Agenda Item Number:** REP 60-15

**Department Source:** Parks and Recreation

**To:** City Council

**From:** City Manager & Staff

**Council Meeting Date:** 5/18/2015

**Re:** Report - Use of Pesticides that Affect Bee Populations

## Documents Included With This Agenda Item

Council memo

**Supporting documentation includes:** Supporting documents to report

## Executive Summary

The Parks and Recreation Department is providing this report to the City Council to outline the current use of neonicotinoids within the park system and to provide information about the department's efforts to promote the growth of honey bee populations in Columbia and Boone County. The overall integrated pest management program for the Parks and Recreation Department is based on minimal use of pesticides and primarily focuses on cultural, mechanical and biological methods to reduce pest issues within the park system. The use of neonicotinoids within the park system is minimal, with staff switching to more environmentally safe products for use at different parks, sports fields and the golf courses over the past five years. Staff has also been in discussion with the Boone Regional Beekeepers Association and the Syngenta Corporation to develop programs and practices that will increase the population of bees in Boone County and increase the availability of feeding environments within the park system.

## Discussion

The Parks and Recreation Department utilizes an integrated pest management program (IPM) for multiple divisions within the department, including the Horticulture, Forestry, Sports Turf and Golf Course divisions. The program focuses on minimal use of chemical methods for the control of insects and diseases and primarily focuses on mechanical, biological and cultural methods to control pests and diseases on park properties. Examples of these practices include the selection of specific tree species to plant in an area or increased topdressing on a golf course green to control the amount of thatch within the soil profile. The Parks and Recreation Department has always taken an active approach in regards to protecting the environment and reducing the amount of chemicals used by staff.

The specific use of neonicotinoids within the Parks and Recreation Department is minimal, with staff reducing the use of these types of insecticides over the past 5 years. Neonicotinoids are used by park divisions in the following manner:

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## Horticulture:

Staff would only use a neonicotinoid product in a reactive treatment for a plant that has been attacked by specific pests. In most cases, staff would have the option to use a chemical from another family of insecticides and could avoid the use of a neonicotinoid product. Over the past three years, horticulture staff has not used a neonicotinoid product in the park system.

## Forestry:

Neonicotinoid products have been identified as an effective control chemical for boring insects and have proven to slow down the destruction caused by the Emerald Ash Borer. Staff would only use a neonicotinoid product to protect signature ash trees in the park system, if and when the Emerald Ash Borer is identified in Boone County. Over the past three years, forestry staff has not used a neonicotinoid product on a tree in the park system.

## Sports Turf:

Staff utilizes a neonicotinoid product on our fescue/bluegrass athletic fields for the control of White Grubs, Billbugs, Annual Bluegrass Weevil and European Crane Fly. The control of these pests is completed in June, with one application of chemical that is immediately watered into the soil. Without this application of the insecticide, the damage from any of these insects could leave our athletic fields unplayable due to loss of turf and safety concerns for players. A neonicotinoid product is also used due to budget concerns when comparing the cost of our current product to the high cost of alternative control products. Staff currently budgets \$300 per year for this one-time application, whereas alternative products would cost the department \$5,000 to \$6,000 per year due to the number of acres that need application.

## Golf Courses:

A neonicotinoid product has not been used on the golf course in five years. The applications of preventative insecticides are only made on the golf greens, which encompass 2.5 total acres per golf course. The golf course maintenance staff switched to a new control chemical for the golf greens five years ago that has no warning label and is effective for all types of insects that may damage the bentgrass greens.

Along with the reduction in chemical use in the park system, staff has also identified other opportunities to promote the growth of honey bee populations in Columbia and Boone County. Park staff has been in communication with the Boone Regional Beekeepers Association about the possible addition of honey bee hives in designated park locations. Park staff has met with the group and participated in site visits and training sessions concerning the incorporation of honey bee hives in the park system. Potential locations for the installation of honey bee hives include Gans Creek Recreation Area, Waters-Moss Memorial Wildlife Area and Bonnie View Nature Sanctuary. The safe introduction of new honey bee hives in Columbia will show our department's commitment to continue the upward trend concerning the population growth of honey bees. Staff will work with the association to educate the public about the project and anticipates that the first hive will be installed this summer.

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A second opportunity to support the growth of honey bees in our area is through the participation in a program called Operation Pollinator. Sponsored by the Syngenta Corporation, the program provides the necessary seed products for golf courses to create specific habitats on golf course land for pollinating insects. This year, staff has seeded about 12,000 square feet at each of the City's golf courses with a flowering plant mixture designed to attract native pollinating insects. With the continual development of urban space, the program focuses on developing necessary insect habitats within the urban environment to promote the growth of the honey bee populations. This is another way that the Parks and Recreation Department can demonstrate its leadership concerning the preservation of animal and insect habitats within Columbia.

As a final step toward our commitment to the growth of honey bee populations in Columbia, our department is exploring the possibility of earning a designation as a Bee City USA. Similar to our distinction as a Tree City USA, this designation would show that we are dedicated to promote the growth of honey bees in Columbia and understand the importance of being an environmentally-friendly city capable of meeting our demands for facilities, parks and trails, while still being a steward for the environment.

Scientists, bee farmers and honey producers have had mixed reactions regarding the possible link between the use of neonicotinoids and the decline of the bee populations. The decline of bees has been attributed to many different issues, including the emergence of the varroa mite, use of neonicotinoids, colony collapse disorder, and habitat reduction. According to the USDA, United States honey production in 2014 is up 19% and total number of hives has increased by 100,000 or 4% from 2013. The Parks and Recreation Department has made necessary steps to continue to promote the growth of these numbers through the reduction in pesticide applications and continued development of natural areas and preservation of land in Columbia and will take on an even greater role concerning the promotion of bee populations in Columbia through the development of pollinator habitats and the introduction of bee hives in appropriate locations within the park system.

## **Fiscal Impact**

Short-Term Impact: None

Long-Term Impact: None

## **Vision, Strategic & Comprehensive Plan Impact**

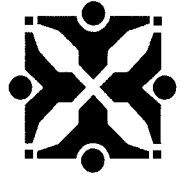
Vision Impact: Parks, Recreation and Greenways

Strategic Plan Impact: Not Applicable

Comprehensive Plan Impact: Environmental Management

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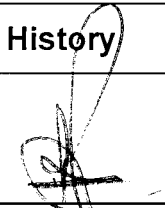
## Suggested Council Action

Report is for information only.

## Legislative History

None

  
Department Approved

  
City Manager Approved



## SUPPORTING DOCUMENTS INCLUDED WITH THIS AGENDA ITEM ARE AS FOLLOWS:

Supporting Article for Report



# Honey

ISSN: 1949-1492

Released March 20, 2015, by the National Agricultural Statistics Service (NASS), Agricultural Statistics Board, United States Department of Agriculture (USDA).

## United States Honey Production Up 19 Percent

Honey production in 2014 from producers with five or more colonies totaled 178 million pounds, up 19 percent from 2013. There were 2.74 million colonies producing honey in 2014, up 4 percent from 2013. Yield per colony averaged 65.1 pounds, up 15 percent from the 56.6 pounds in 2013. Colonies which produced honey in more than one State were counted in each State where the honey was produced. Therefore, at the United States level yield per colony may be understated, but total production would not be impacted. Colonies were not included if honey was not harvested. Producer honey stocks were 41.2 million pounds on December 15, 2014, up 8 percent from a year earlier. Stocks held by producers exclude those held under the commodity loan program.

## Record High Honey Prices

Honey prices increased to a record high during 2014 to 216.1 cents per pound, up 1 percent from 214.1 cents per pound in 2013. United States and State level prices reflect the portions of honey sold through cooperatives, private, and retail channels. Prices for each color class are derived by weighting the quantities sold for each marketing channel. Prices for the 2013 crop reflect honey sold in 2013 and 2014. Some 2013 crop honey was sold in 2014, which caused some revisions to the 2013 crop prices.

## Honey Price by Color Class – United States: 2013 and 2014

Color class	Price					
	Co-op and private		Retail		All	
	2013	2014	2013	2014	2013	2014
	(cents per pound)	(cents per pound)	(cents per pound)	(cents per pound)	(cents per pound)	(cents per pound)
Water white, extra white, white .....	210.9	204.0	340.9	327.1	212.9	205.6
Extra light amber .....	204.0	208.4	330.6	381.8	209.0	215.8
Light amber, amber, dark amber .....	197.3	207.7	405.1	423.4	219.2	232.3
All other honey, area specialties .....	222.4	251.6	492.5	525.2	248.9	305.2
All honey .....	205.8	206.4	382.4	406.6	214.1	216.1

## Number of Colonies, Yield, Production, Stocks, Price, and Value – States and United States: 2013

[Producers with 5 or more colonies. Colonies which produced honey in more than one State were counted in each State]

State	Honey producing colonies <sup>1</sup>	Yield per colony	Production	Stocks December 15 <sup>2</sup>	Average price per pound <sup>3</sup>	Value of production <sup>4</sup>
	(1,000)	(pounds)	(1,000 pounds)	(1,000 pounds)	(cents)	(1,000 dollars)
Alabama .....	7	52	364	55	285	1,037
Arizona .....	29	36	1,044	251	196	2,046
Arkansas .....	22	60	1,320	66	202	2,666
California .....	330	33	10,890	2,505	211	22,978
Colorado .....	26	43	1,118	324	210	2,348
Florida .....	220	61	13,420	1,074	203	27,243
Georgia .....	67	50	3,350	637	226	7,571
Hawaii .....	13	83	1,079	65	197	2,126
Idaho .....	83	32	2,656	1,036	202	5,365
Illinois .....	7	48	336	101	419	1,408
Indiana .....	6	47	282	82	277	781
Iowa .....	39	48	1,872	1,217	245	4,586
Kansas .....	6	46	276	39	250	690
Kentucky .....	3	41	123	17	325	400
Louisiana .....	50	98	4,900	490	189	9,261
Maine .....	7	43	301	27	314	945
Michigan .....	85	55	4,675	982	216	10,098
Minnesota .....	130	58	7,540	1,282	199	15,005
Mississippi .....	17	116	1,972	39	186	3,668
Missouri .....	10	47	470	85	262	1,231
Montana .....	159	94	14,946	5,231	209	31,237
Nebraska .....	46	60	2,760	1,628	207	5,713
New Jersey .....	11	44	484	34	419	2,028
New York .....	55	48	2,640	1,030	212	5,597
North Carolina .....	10	38	380	84	367	1,395
North Dakota .....	480	69	33,120	6,955	204	67,565
Ohio .....	17	45	765	390	329	2,517
Oregon .....	62	35	2,170	456	239	5,186
Pennsylvania .....	13	45	585	257	303	1,773
South Dakota .....	265	56	14,840	6,381	207	30,719
Tennessee .....	7	45	315	63	355	1,118
Texas .....	106	59	6,254	1,689	210	13,133
Utah .....	30	34	1,020	92	209	2,132
Vermont .....	3	51	153	46	389	595
Virginia .....	5	35	175	42	450	788
Washington .....	69	39	2,691	1,023	230	6,189
West Virginia .....	6	46	276	83	366	1,010
Wisconsin .....	59	60	3,540	1,558	238	8,425
Wyoming .....	47	66	3,102	558	211	6,545
Other States <sup>5 6</sup> .....	33	39	1,295	186	383	4,960
United States <sup>6 7</sup> .....	2,640	56.6	149,499	38,160	214.1	320,077

<sup>1</sup> Honey producing colonies are the maximum number of colonies from which honey was taken during the year. It is possible to take honey from colonies which did not survive the entire year.

<sup>2</sup> Stocks held by producers.

<sup>3</sup> Average price per pound based on expanded sales.

<sup>4</sup> Value of production is equal to production multiplied by average price per pound.

<sup>5</sup> Alaska, Connecticut, Delaware, Maryland, Massachusetts, Nevada, New Hampshire, New Mexico, Oklahoma, Rhode Island, and South Carolina not published separately to avoid disclosing data for individual operations.

<sup>6</sup> Due to rounding, total colonies multiplied by total yield may not exactly equal production.

<sup>7</sup> United States value of production will not equal summation of States.

## Number of Colonies, Yield, Production, Stocks, Price, and Value – States and United States: 2014

[Producers with 5 or more colonies. Colonies which produced honey in more than one State were counted in each State]

State	Honey producing colonies	Yield per colony	Production	Stocks December 15 <sup>2</sup>	Average price per pound <sup>3</sup>	Value of production <sup>4</sup>
	(1,000)	(pounds)	(1,000 pounds)	(1,000 pounds)	(cents)	(1,000 dollars)
Alabama .....	7	53	371	26	340	1,261
Arizona .....	26	39	1,014	193	202	2,048
Arkansas .....	21	65	1,365	137	200	2,730
California .....	320	39	12,480	2,995	203	25,334
Colorado .....	27	37	999	200	200	1,998
Florida .....	245	60	14,700	1,029	208	30,576
Georgia .....	73	62	4,526	362	219	9,912
Hawaii .....	15	93	1,395	140	228	3,181
Idaho .....	100	34	3,400	850	203	6,902
Illinois .....	8	49	392	94	441	1,729
Indiana .....	5	62	310	115	324	1,004
Iowa .....	35	43	1,505	933	251	3,778
Kansas .....	7	75	525	84	233	1,223
Kentucky .....	5	47	235	56	393	924
Louisiana .....	48	84	4,032	524	226	9,112
Maine .....	8	47	376	41	536	2,015
Michigan .....	91	63	5,733	1,835	250	14,333
Minnesota .....	132	60	7,920	1,426	206	16,315
Mississippi .....	20	112	2,240	45	201	4,502
Missouri .....	12	47	564	96	357	2,013
Montana .....	162	88	14,256	5,132	205	29,225
Nebraska .....	50	75	3,750	1,688	210	7,875
New Jersey .....	12	30	360	119	298	1,073
New York .....	60	55	3,300	1,518	272	8,976
North Carolina .....	12	43	516	88	347	1,791
North Dakota .....	490	86	42,140	9,271	200	84,280
Ohio .....	15	61	915	256	352	3,221
Oregon .....	71	40	2,840	767	219	6,220
Pennsylvania .....	17	46	782	203	275	2,151
South Carolina .....	9	54	486	19	383	1,861
South Dakota .....	280	87	24,360	5,846	209	50,912
Tennessee .....	7	63	441	88	323	1,424
Texas .....	116	78	9,048	2,081	223	20,177
Utah .....	29	28	812	130	213	1,730
Vermont .....	3	58	174	61	503	875
Virginia .....	6	41	246	57	507	1,247
Washington .....	68	44	2,992	1,167	248	7,420
West Virginia .....	6	31	186	33	404	751
Wisconsin .....	53	54	2,862	1,030	232	6,640
Wyoming .....	38	61	2,318	255	206	4,775
Other States <sup>5 6</sup> .....	31	45	1,404	202	358	5,026
United States <sup>6 7</sup> .....	2,740	65.1	178,270	41,192	216.1	385,241

<sup>1</sup> Honey producing colonies are the maximum number of colonies from which honey was taken during the year. It is possible to take honey from colonies which did not survive the entire year.

<sup>2</sup> Stocks held by producers.

<sup>3</sup> Average price per pound based on expanded sales.

<sup>4</sup> Value of production is equal to production multiplied by average price per pound.

<sup>5</sup> Alaska, Connecticut, Delaware, Maryland, Massachusetts, Nevada, New Hampshire, New Mexico, Oklahoma, and Rhode Island not published separately to avoid disclosing data for individual operations.

<sup>6</sup> Due to rounding, total colonies multiplied by total yield may not exactly equal production.

<sup>7</sup> United States value of production will not equal summation of States.



## Statistical Methodology

**Survey Procedures:** Data for honey producing operations are collected from a stratified sample of all known producers with five or more colonies. NASS Regional Field Offices maintain a list of all known honey producers and use known sources of producers to update their lists. All sampled honey producers with five or more colonies are mailed a questionnaire and given adequate time to respond by mail or electronic data reporting (EDR). Those that do not respond by mail or EDR are telephoned or possibly enumerated in person. Prices are collected by color class and marketing channel.

**Estimation Procedures:** Sound statistical methodology is employed to derive the estimates from reported data. All data are analyzed for unusual values. Data from each operation are compared to their own past operating profile and to trends from similar operations. Data for missing operations were estimated based on similar operations or historical data. State offices prepare these estimates by using a combination of survey indications and historic trends. Prices for each color class are derived by weighting the quantities sold for each marketing channel. Individual State estimates are reviewed by the Agricultural Statistics Board for reasonableness.

**Revision Policy:** The previous year's estimates are subject to revision when current year's estimates are made. Revisions are the result of late reports or corrected data. Price revisions can be the result of additional sales reported the following year. Estimates will also be reviewed after data from the 5-year Census of Agriculture are available. No revisions will be made after that date.

**Reliability:** Since all honey producing operations are not included in the sample, survey estimates are subject to sampling variability. Survey results are also subject to non-sampling errors such as omissions, duplication, and mistakes in reporting, recording, and processing the data. While these errors cannot be measured directly, they are minimized through strict quality controls in the data collection process and a careful review of all reported data for consistency and reasonableness.

To assist in evaluating the reliability of the estimates in this report, the "Root Mean Square Error" is shown for selected items in the following table. The "Root Mean Square Error" is a statistical measure based on past performance and is computed using the differences between first and final estimates. The "Root Mean Square Error" for honey producing colonies over the past 10 years is 1.3 percent. This means that chances are 2 out of 3 that the final estimate will not be above or below the current estimate of 2.74 million colonies by more than 1.3 percent. Chances are 9 out of 10 that the difference will not exceed 2.4 percent.

### Reliability of Honey Estimates

[Based on data for the past 10 years]

Item	Root mean square error	90 percent confidence level	Difference between first and latest estimate				
			Average	Smallest	Largest	Years	
						Below latest	Above latest
	(percent)	(percent)	(1,000)	(1,000)	(1,000)	(number)	(number)
Honey producing colonies .....	1.3	2.4	18	-	85	5	3
Honey production .....	1.3	2.4	1,095	-	4,796	4	4

- Represents zero.

## Information Contacts

Listed below are the commodity specialists in the Livestock Branch of the National Agricultural Statistics Service to contact for additional information. E-mail inquiries may be sent to [nass@nass.usda.gov](mailto:nass@nass.usda.gov)

Dan Kerestes, Chief, Livestock Branch .....	(202) 720-3570
Bruce Boess, Head, Poultry and Specialty Commodities Section .....	(202) 720-4447
Alissa Cowell-Mytar – Cold Storage .....	(202) 720-4751
Heidi Gleich – Broiler Hatchery, Chicken Hatchery .....	(202) 720-0585
Michael Klamm – Poultry Slaughter, Turkey Hatchery, Turkeys Raised .....	(202) 690-3237
Tom Kruchten – Census of Aquaculture .....	(202) 690-4870
Kim Linonis – Layers, Eggs .....	(202) 690-8632
Sammy Neal – Catfish Production, Egg Products, Mink, Trout Production .....	(202) 720-3244
Joshua O’Rear – Honey .....	(202) 690-3676

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For your convenience, you may access NASS reports and products the following ways:

- All reports are available electronically, at no cost, on the NASS web site: <http://www.nass.usda.gov>
- Both national and state specific reports are available via a free e-mail subscription. To set-up this free subscription, visit <http://www.nass.usda.gov> and in the “Follow NASS” box under “Receive reports by Email,” click on “National” or “State” to select the reports you would like to receive.

For more information on NASS surveys and reports, call the NASS Agricultural Statistics Hotline at (800) 727-9540, 7:30 a.m. to 4:00 p.m. ET, or e-mail: [nass@nass.usda.gov](mailto:nass@nass.usda.gov).

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