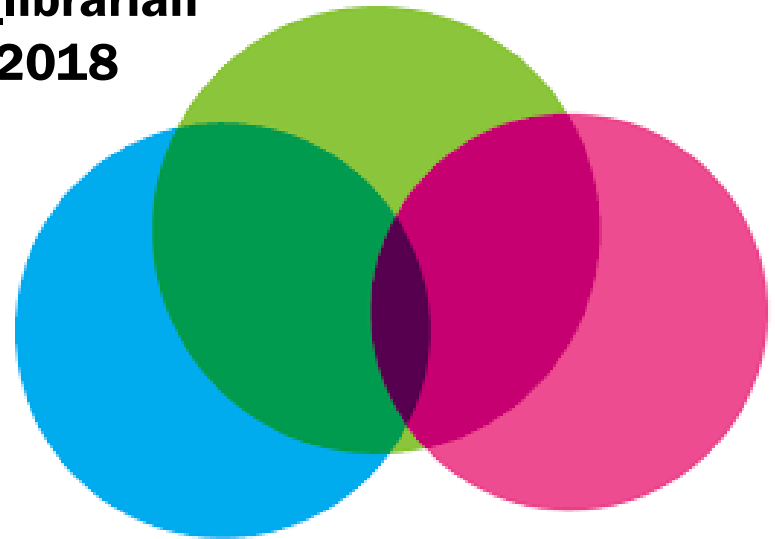


# Comparison of Agricultural Database Subject Overlap

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**sritchie@umd.edu**  
**IG: umd\_ag\_librarian**  
**May 15, 2018**



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# Research Question

**Can free databases adequately meet research needs?**

## Why?

- **Collection Development Budgets**
  - How many agricultural literature databases should we purchase, if any?
- **Comprehensiveness of Content**
  - Can researchers that are already exclusively using Google Scholar be assured that it is adequately covering the literature?



# Methodology

**30 citations** randomly generated from

**3 review article** reference lists compared across

**8 databases** covering agricultural literature on

**3 topics:**

**A) Sustainable diets**

**B) Agronomy**

**C) Meat Science**



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# Database Summary

Database Name	Database Type	Source	Cost
AGRICOLA	Comprehensive	U.S. Gov	Free
AGRIS	Comprehensive	United Nations	Free
BIOSIS	Specialized	Commercial	\$\$
CAB	Comprehensive	U.K. Non-profit	\$\$
FSTA	Specialized	U.K. Non-profit/ Commercial	\$
Google	Multidisciplinary	Commercial	Free
Scopus	Multidisciplinary	Commercial	\$\$\$
Web of Science	Multidisciplinary	Commercial	\$\$\$



# Topics and articles

## Sustainable Diets



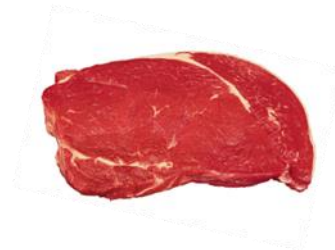
Jones, A. D., Hoey, L., Blesh, J., Miller, L., Green, A., & Shapiro, L. F. (2016). A Systematic Review of the Measurement of Sustainable Diets. *Advances in Nutrition: An International Review Journal*, 7(4), 641–664. <http://doi.org/10.3945/an.115.011015>

## Agronomy



Baum, C., El-Tohamy, W., & Gruda, N. (2015). Increasing the productivity and product quality of vegetable crops using arbuscular mycorrhizal fungi: A review. *Scientia Horticulturae*, 187, 131–141. <http://doi.org/10.1016/j.scienta.2015.03.002>

## Meat Science



Stankus, T., Laincz, J., & Linck, R. (2015). Reviews of Science for Science Librarians: Meat Science around the World, 1980–2014. *Science & Technology Libraries*, 34(3), 167–227. <http://doi.org/10.1080/0194262X.2015.1072491>

# Raw Data

	Sustainable Diets Reference Articles	AGRICOLA	AGRIS	BIOSIS	CAB	FSTA	Google Scholar	Scopus	Web of Science
2									
3									
4	Agarwal B. 1997.	0	1	0	1	0	1	1	1
5	Briggs AD. 2013.	0	0	0	0	0	1	1	1
6	Burlingame B, eds. 2012.	0	1	0	1	1	0	0	0
7	Curran MA. 2012.	1	0	0	0	0	1	1	0
8	Davis J, Sonesson U. 2008.	0	0	1	1	0	1	1	1
9	Downs SM, Fanzo J. 2015.	1	0	0	0	0	1	0	0
10	Geeraert F. 2013.	0	0	0	1	1	1	1	1
11	Gibson RS et al. 2010.	0	0	1	0	0	1	1	1
12	Health Council of the Netherlands. 2011.	0	0	0	0	0	0	0	0
13	Heller MC, Keoleian GA, Willett WC. 2015.	0	0	1	0	1	1	1	1
14	Herrin M, Gussow JD. 1989.	1	1	0	1	0	1	0	1
15	Joyce A, et al. 2014.	0	0	0	0	0	1	0	0
16	Kramer KJ et al. 1999.	0	0	0	0	0	1	1	1
17	Lairon D. 2012	0	0	0	1	0	1	0	0
18	Lombardini C, Lankoski L. 2013.	0	1	0	0	0	1	1	0
19	Meier T, et al. 2014.	1	1	1	1	1	1	1	1
20	Monroe JT, et al. 2015.	1	0	0	1	1	1	1	1
21	National Research Council. 2010.	1	1	0	0	0	0	0	0



# Tabulated Search Results

90 sample citations were searched in 8 databases. Citations found by each review article topic were tabulated for count and percentage by database.

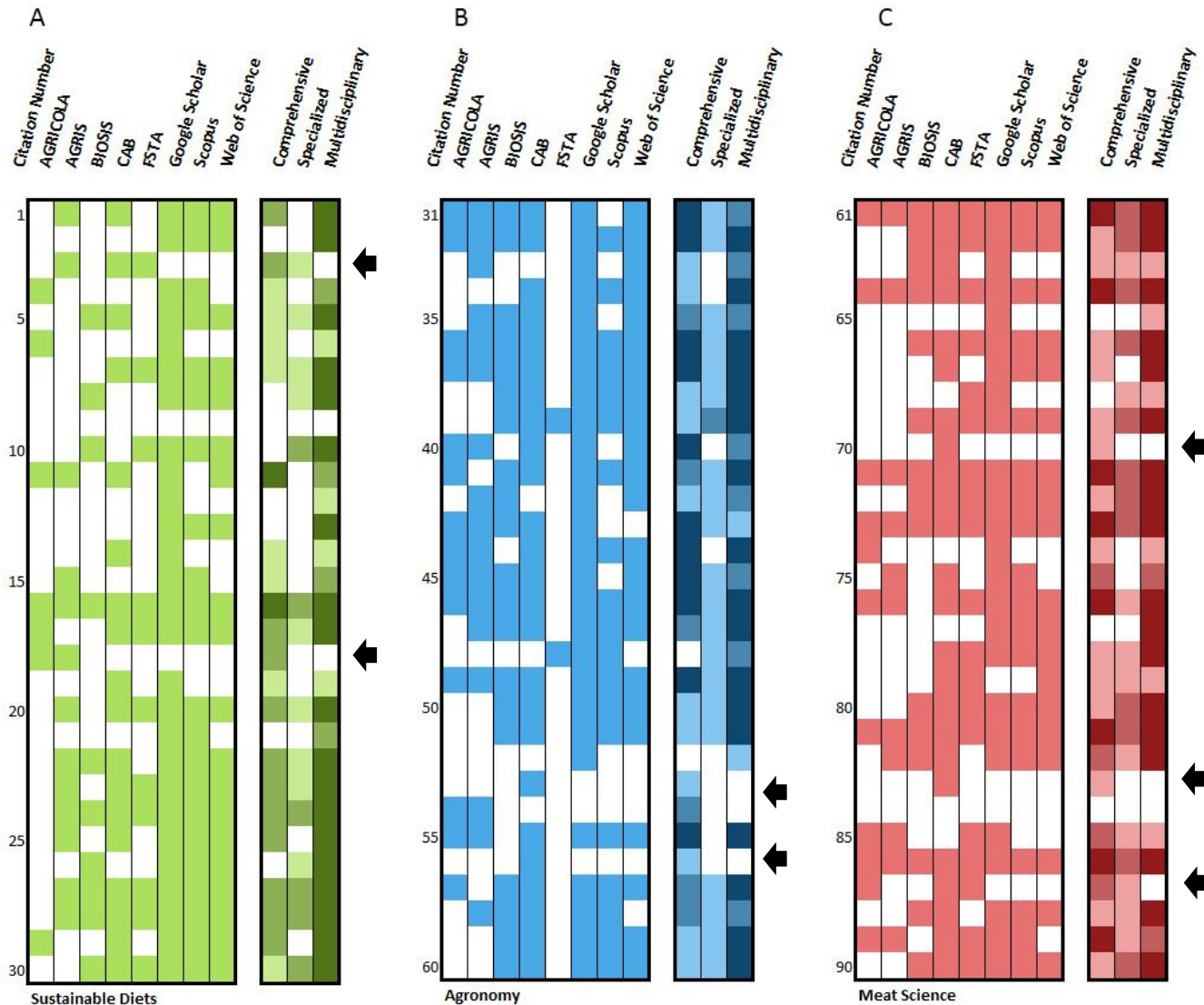
	AGRICOLA	AGRIS	BIOSIS	CAB	FSTA	Google Scholar	Scopus	Web of Science
<b>Sustainable Diets</b>	7	13	10	18	11	27	22	20
<b>Agronomy</b>	14	17	20	25	2	27	19	23
<b>Meat Science</b>	11	11	15	24	19	25	20	19
<b>Total</b>	32	41	45	67	32	79	61	62
<b>Total Percentage</b>	36	46	50	74	36	88	68	69

# Grid Heat Maps

A visual representation of citations found by database and topic.

Citations are ordered alphabetically by author last name for each review article.

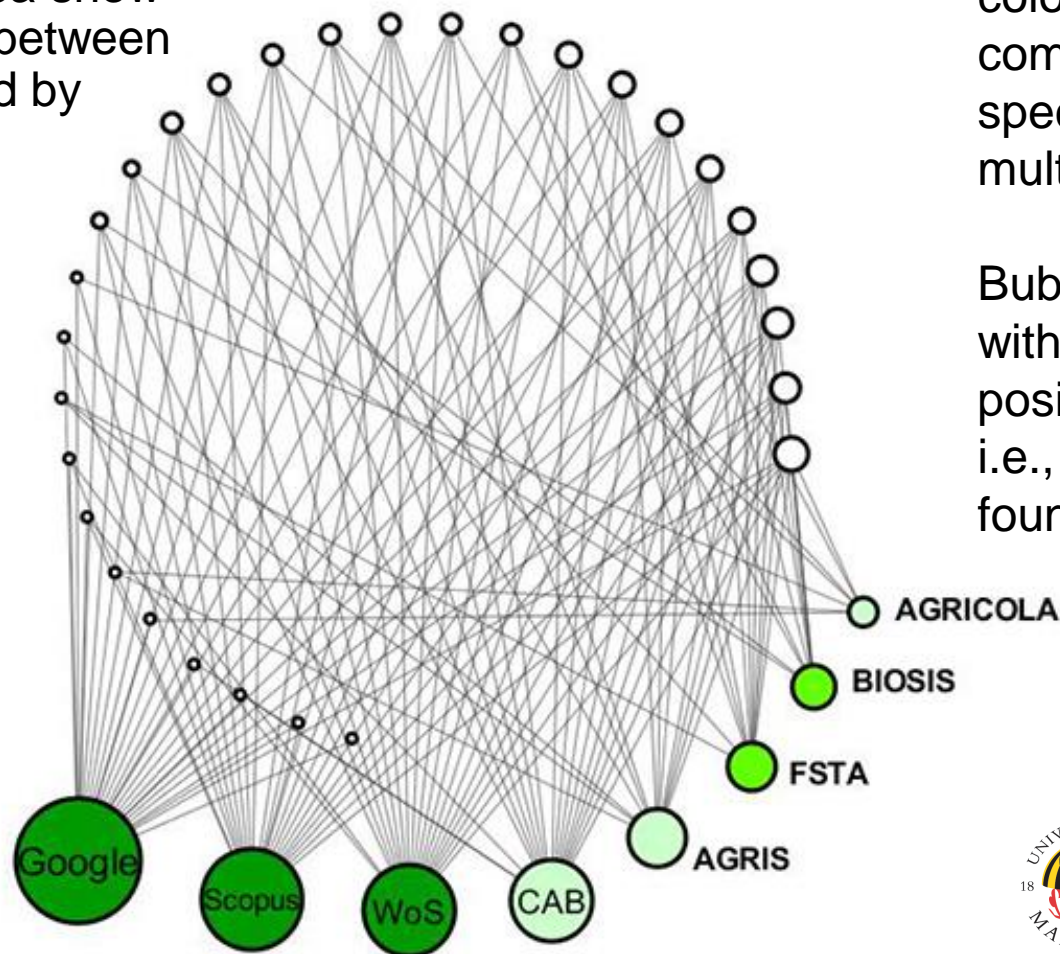
Overlap by database type indicated with darker colors.





# Cytoscape Data Visualization - Diets

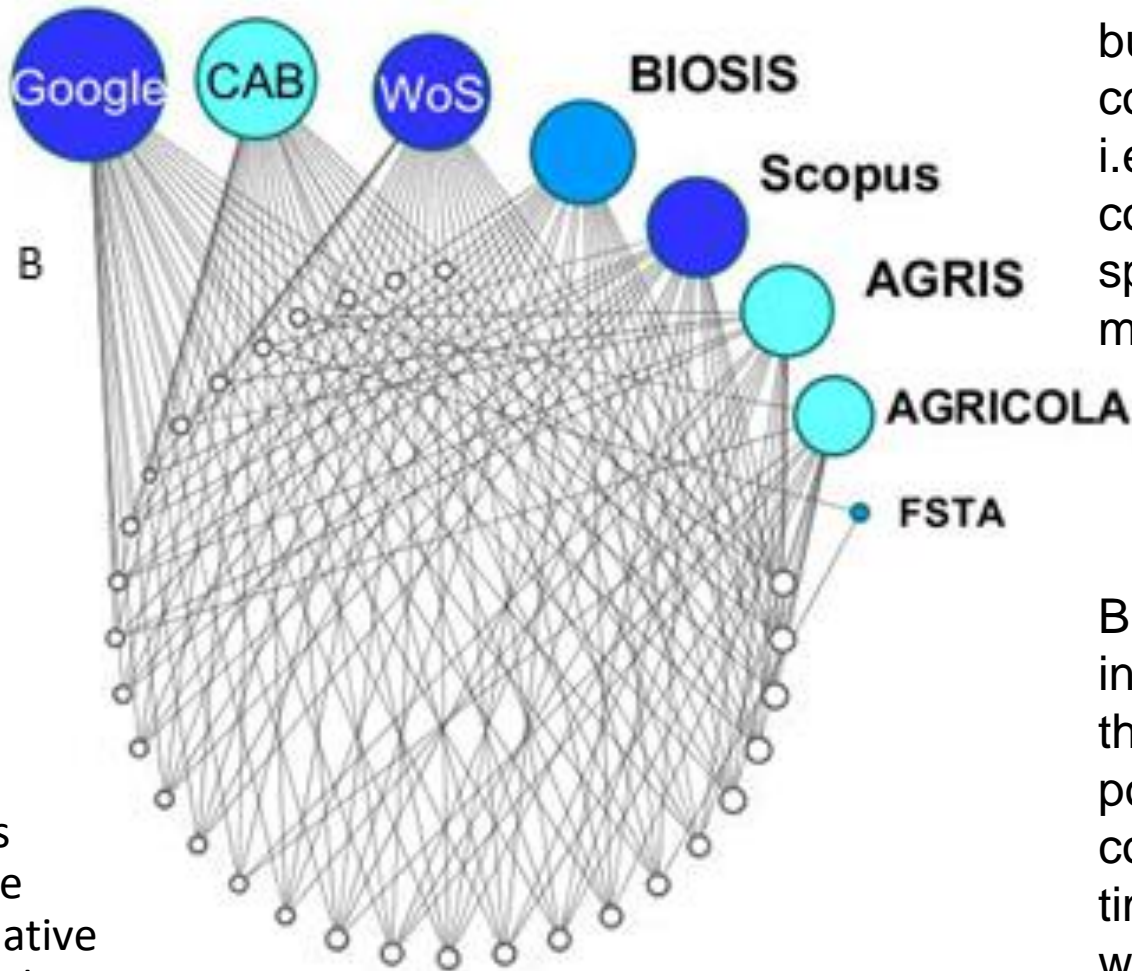
Data visualizations for each topic area show relationships between citations found by database and topic, and relative counts across databases.



Database bubbles are colored by type i.e., comprehensive, specialized, multidisciplinary.

Bubble size increases with the number of positive connections i.e., times a citation was found in a database.

# Cytoscape Data Visualization - Agronomy



Database bubbles are colored by type i.e., comprehensive, specialized, multidisciplinary.

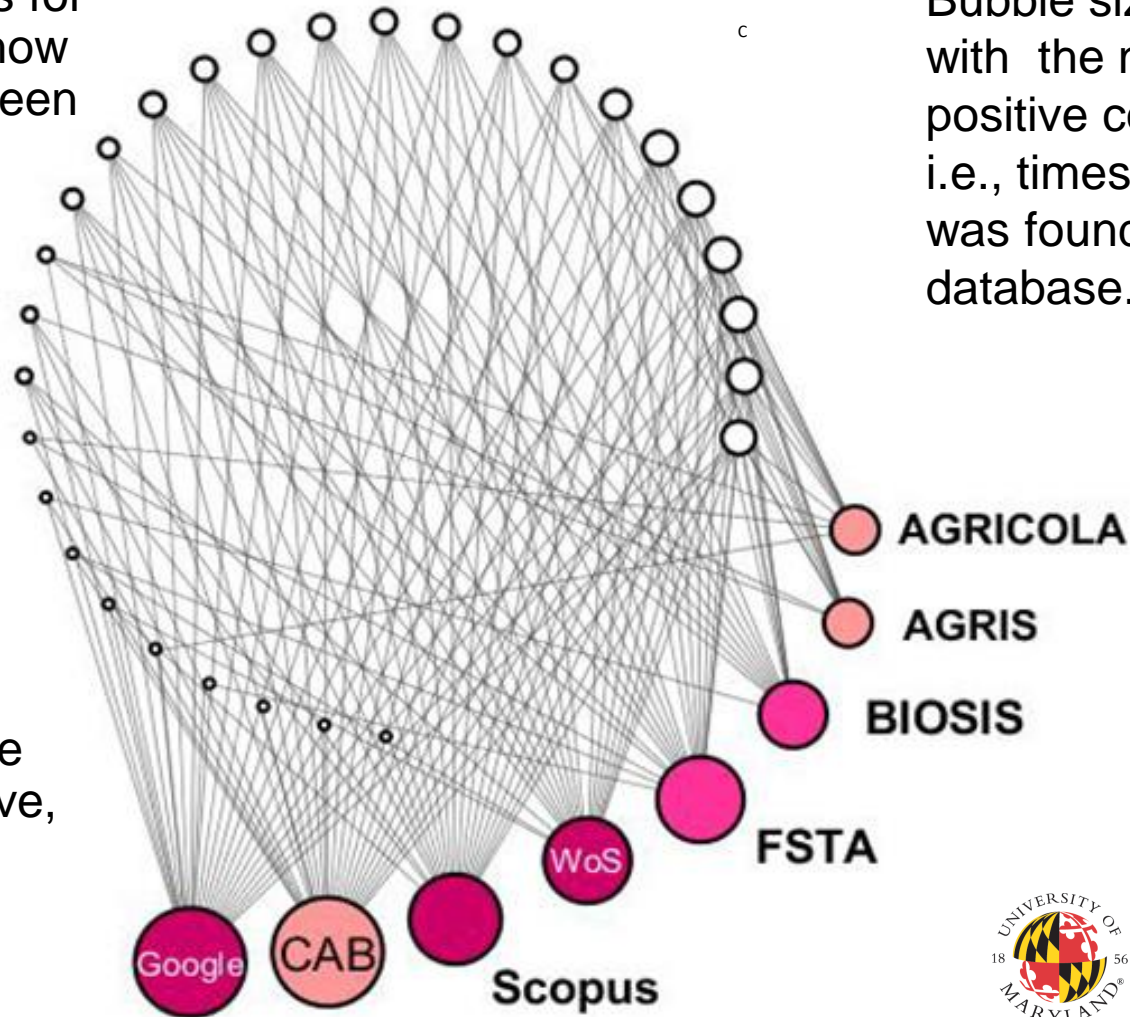
Data visualizations for each topic area show relationships between citations found by database and topic, and relative counts across databases.

Bubble size increases with the number of positive connections i.e., times a citation was found in a database.

# Cytoscape Data Visualization - Meat

Data visualizations for each topic area show relationships between citations found by database and topic, and relative counts across databases.

Database bubbles are colored by type i.e., comprehensive, specialized, multidisciplinary.



Bubble size increases with the number of positive connections i.e., times a citation was found in a database.



# Cytoscape Interface

File Edit View Select Layout Apps Tools Help



Control Panel

Network Style Select

Type your query here...

1 of 2 Networks selected

AgDBComps 2

AgDBComps 0 0

TestCytoscape 18 23

SustainableDietsEdges.csv

File Edit View Insert Format Data

100% \$ % .0 .00

Source	A	B	C
Source	Target		
1	2	96	
2	3	91	
3	3	96	
4	4	94	
5	4	96	
6	5	91	
7	5	92	
8	6	94	
9	6	96	
10	7	96	
11	7	97	
12	8	96	
13	8	97	
14	8	98	
15	9	92	
16	9	94	
17	9	95	
18			

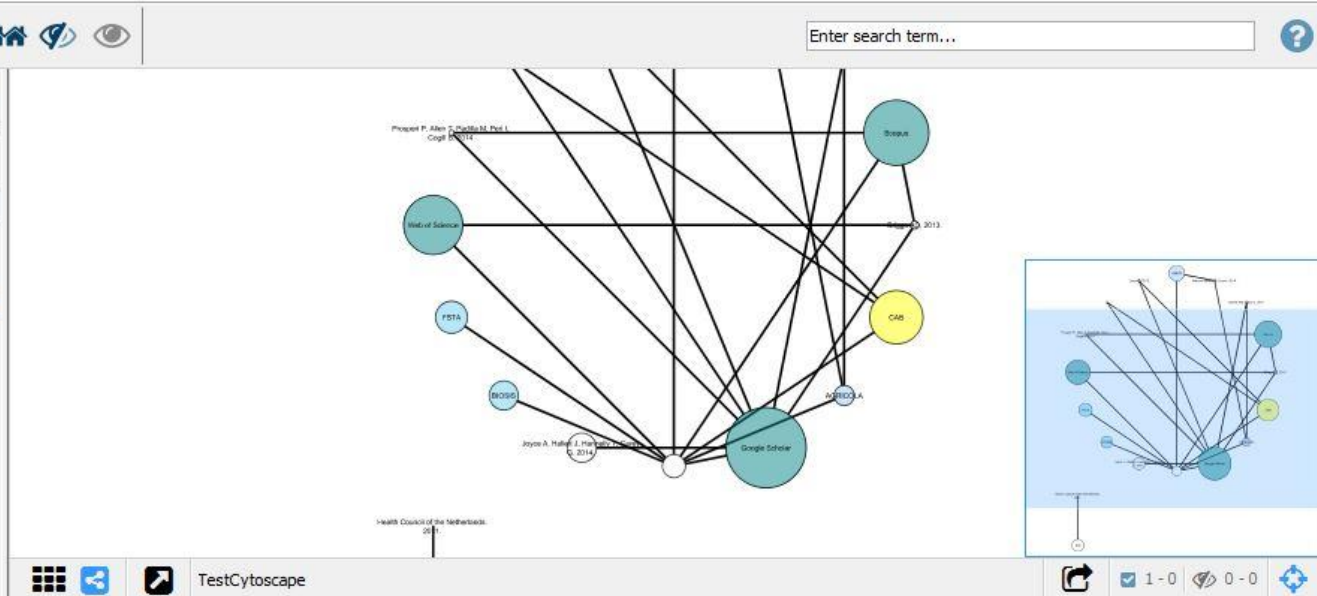


Table Panel

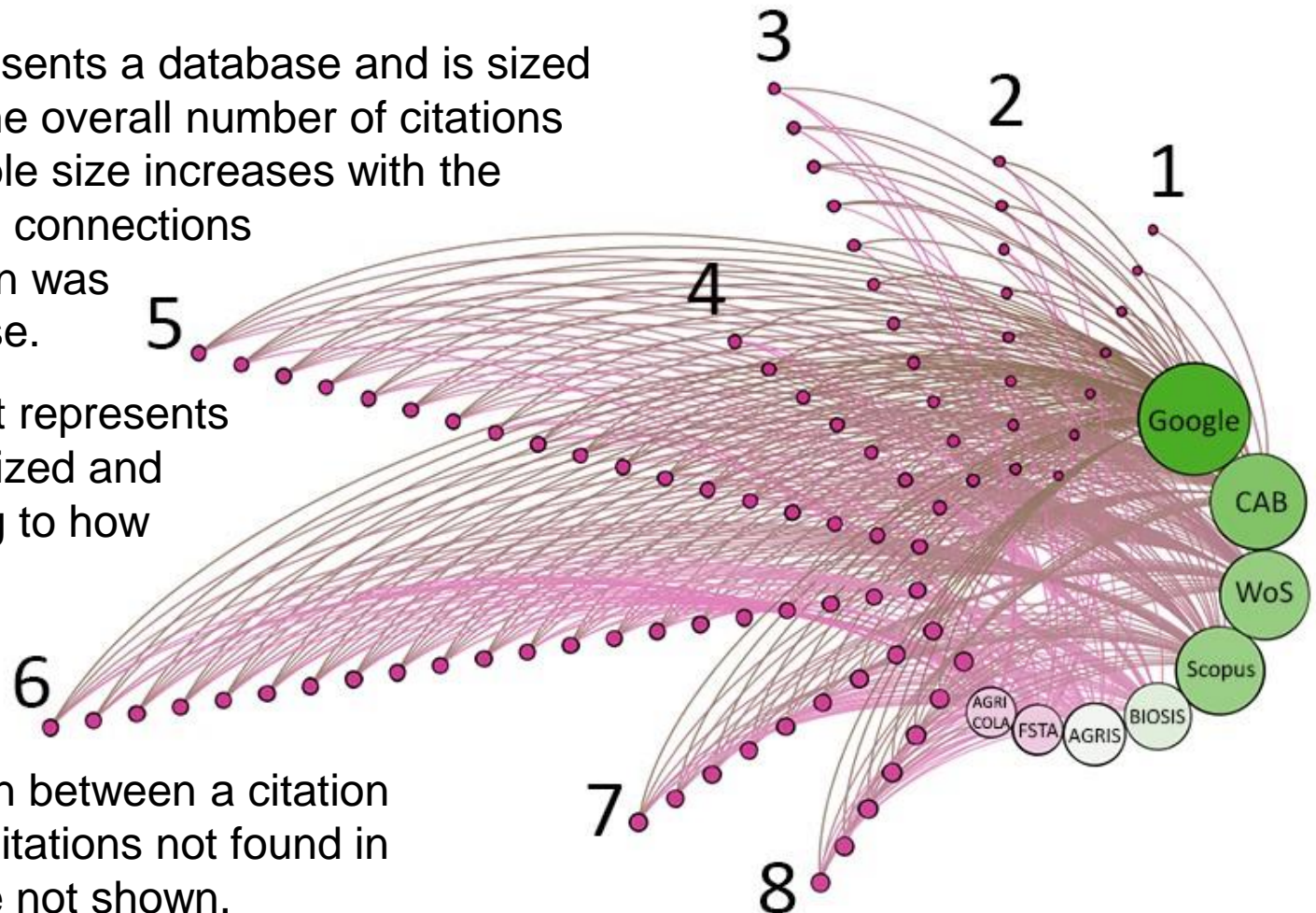
shared name	shared interaction	name	interaction
Health Council of the...	interacts with	Health Cou...	interacts with
Joyce A, Hallett J, H...	interacts with	Joyce A, H...	interacts with
Downs SM, Fanzo J. ...	interacts with	Downs SM,...	interacts with
Downs SM, Fanzo J. ...	interacts with	Downs SM,...	interacts with
Lairon D. 2012 (inter...	interacts with	Lairon D. 2...	interacts with
Lairon D. 2012 (inter...	interacts with	Lairon D. 2...	interacts with
National Research C...	interacts with	National R...	interacts with
National Research C...	interacts with	National R...	interacts with
Panzone L, 2011. (in...	interacts with	Panzone L,...	interacts with
Panzone L, 2011. (in...	interacts with	Panzone L,...	interacts with
Prosneri P, Allen T. P.	interacts with	Prosneri P	interacts with

# Gephi Data Visualization

This data visualization represents the ***distribution*** of article discovery in one to eight database(s) sequentially.

Each bubble represents a database and is sized proportionally to the overall number of citations found within. Bubble size increases with the number of positive connections i.e., times a citation was found in a database.

Each small red dot represents a citation, and is sized and grouped according to how many times it was found in a database. Each line represents a positive connection between a citation and a database. Citations not found in any databases are not shown.



# Conclusion

**Google Scholar covers most agricultural research literature needs, but can be supplemented with CAB and other free databases for improved results.**

Image Credit: Rob  
Laurich, City College of  
New York Libraries



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**Thank You!**

**Questions?**