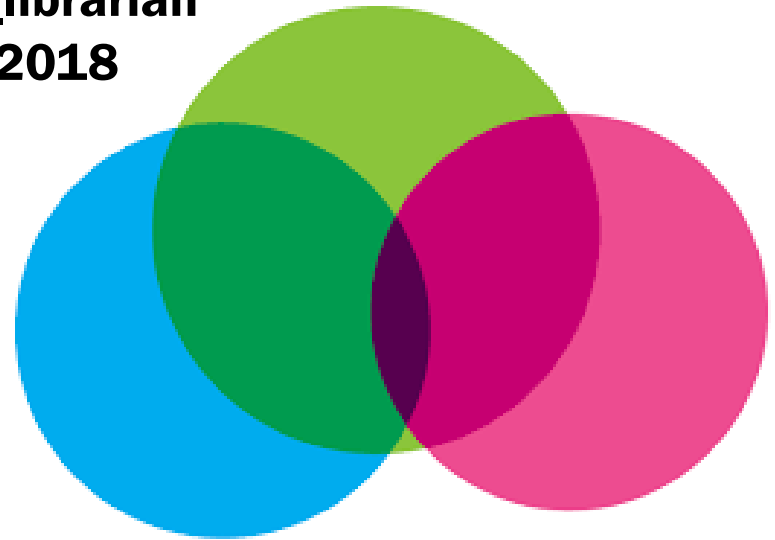# Comparison of Agricultural Database Subject Overlap

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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**

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
Agarwal B. 1997.	0	1	0	1	0	1	1	1
Briggs AD. 2013.	0	0	0	0	0	1	1	1
Burlingame B, eds. 2012.	0	1	0	1	1	0	0	0
Curran MA. 2012.	1	0	0	0	0	1	1	0
Davis J, Sonesson U. 2008.	0	0	1	1	0	1	1	1
Downs SM, Fanzo J. 2015.	1	0	0	0	0	1	0	0
Geeraert F. 2013.	0	0	0	1	1	1	1	1
Gibson RS et al. 2010.	0	0	1	0	0	1	1	1
Health Council of the Netherlands. 2011.	0	0	0	0	0	0	0	0
Heller MC, Keoleian GA, Willett WC. 2015.	0	0	1	0	1	1	1	1
Herrin M, Gussow JD. 1989.	1	1	0	1	0	1	0	1
Joyce A, et al. 2014.	0	0	0	0	0	1	0	0
Kramer KJ et al. 1999.	0	0	0	0	0	1	1	1
Lairon D. 2012	0	0	0	1	0	1	0	0
Lombardini C, Lankoski L. 2013.	0	1	0	0	0	1	1	0
Meier T, et al. 2014.	1	1	1	1	1	1	1	1
Monroe JT, et al. 2015.	1	0	0	1	1	1	1	1
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
Sustainable Diets	7	13	10	18	11	27	22	20
Agronomy	14	17	20	25	2	27	19	23
Meat Science	11	11	15	24	19	25	20	19
Total	32	41	45	67	32	79	61	62
Total Percentage	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.
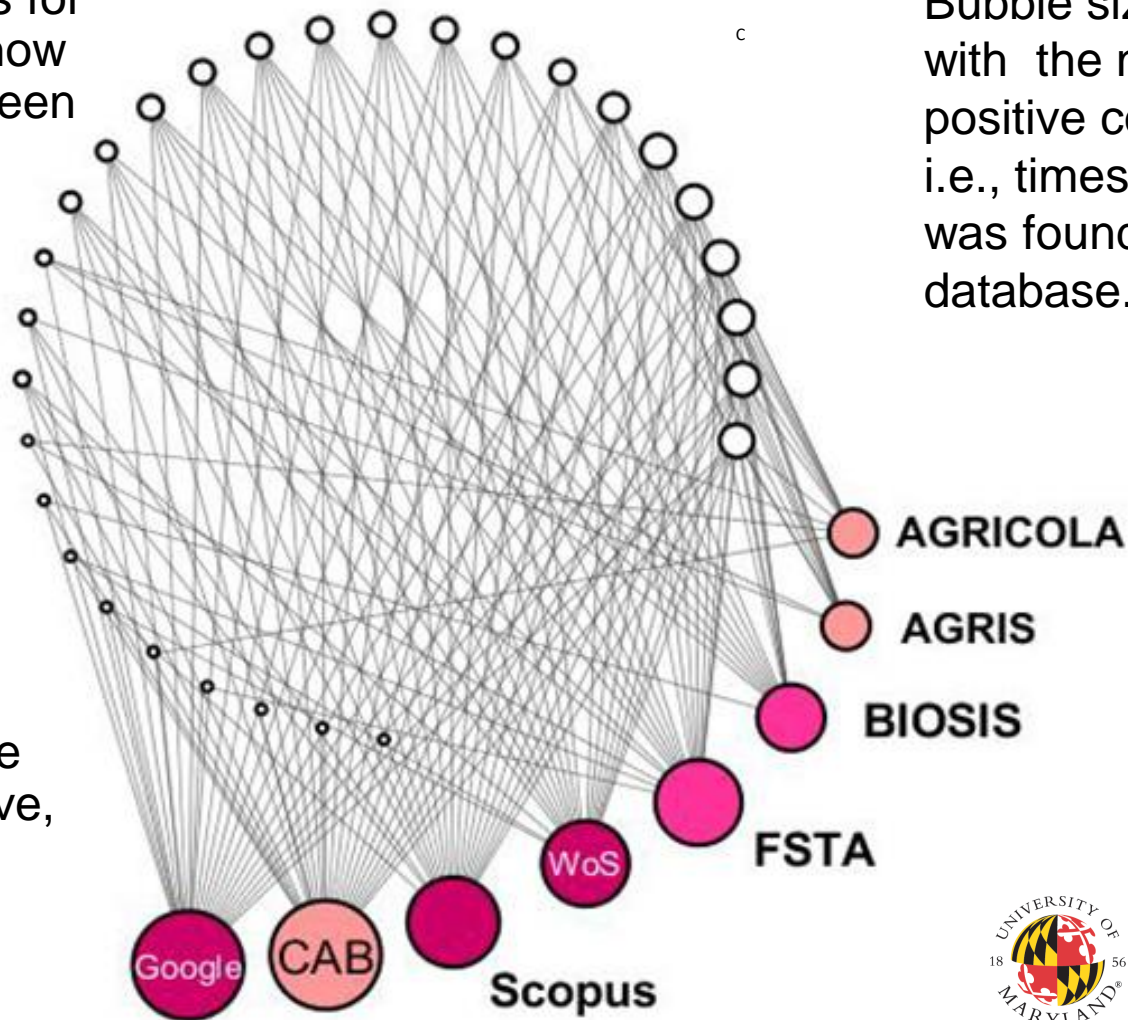

A

B

C
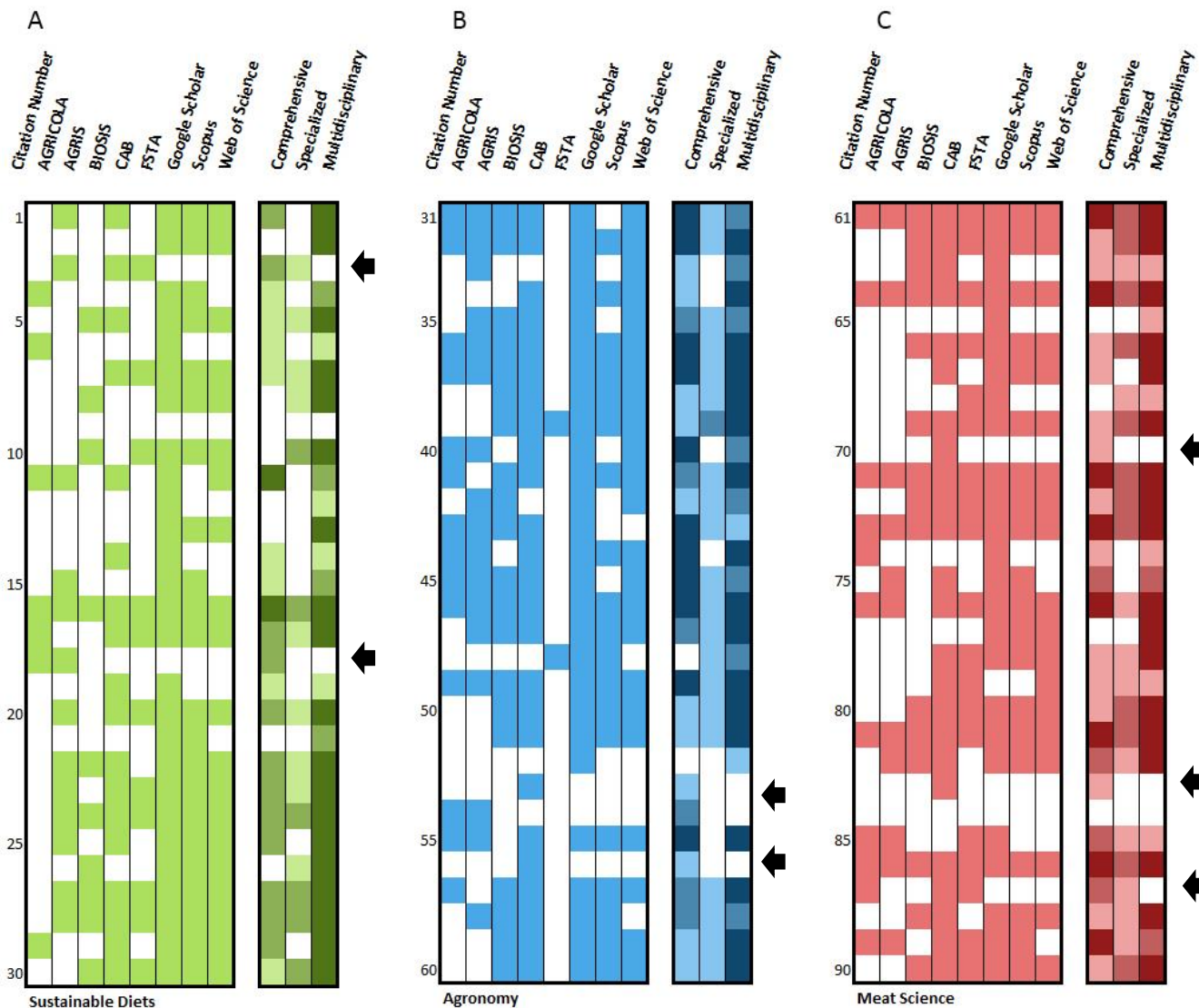
Cytoscape Data Visualization - Diets

Data visualizations for each topic area show relationships between citations found by database and topic, and relative counts across databases.
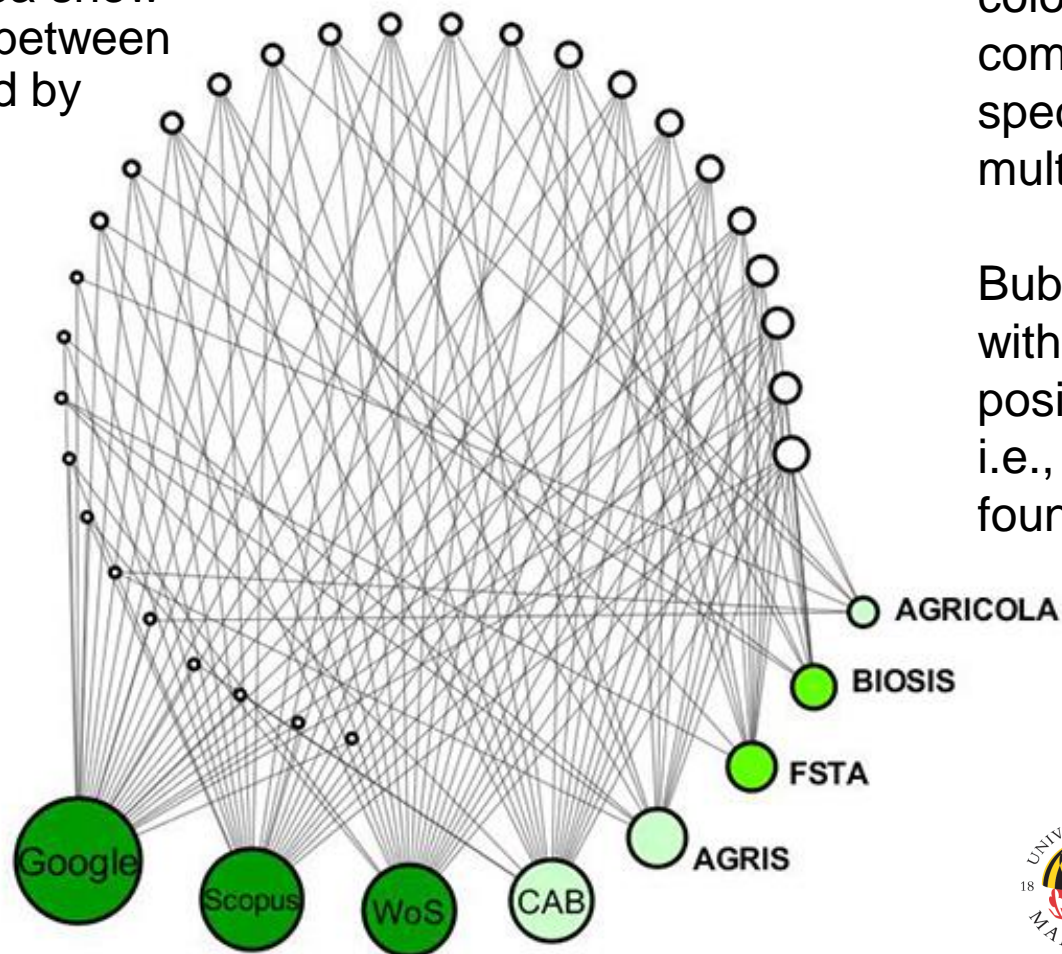
Database bubbles are colored by type i.e., comprehensive, specialized, multidisciplinary.

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

AGRICOLA

BIOSIS

FSTA

AGRIS

Google

Scopus

WoS

CAB

UNIVERSITY LIBRARIES

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.

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

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

Cytoscape Interface

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.
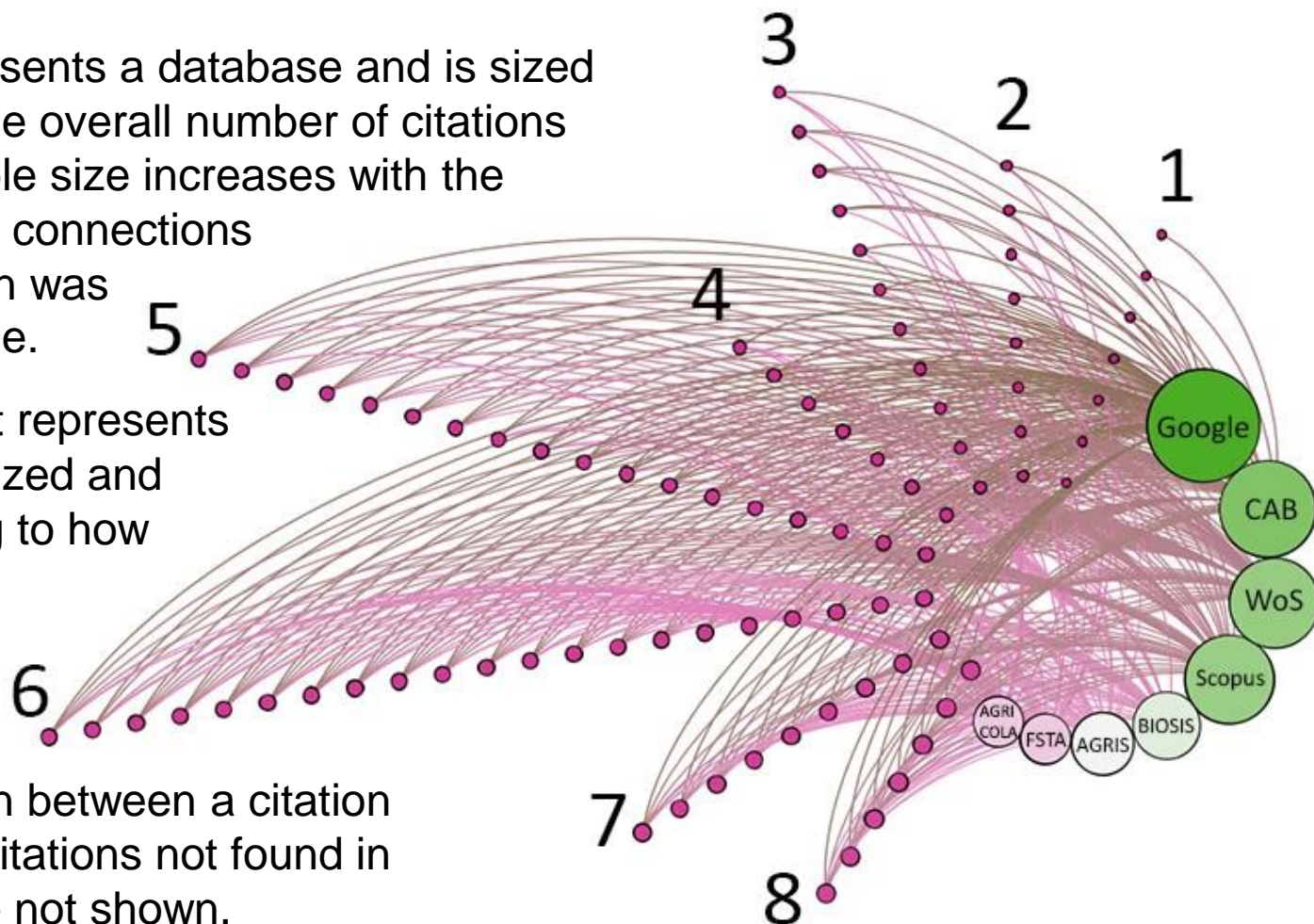
Conclusion

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

Thank You!

Questions?