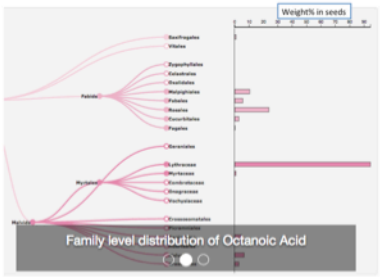
PlantFA database

Fatty Acids | Tree | Plants | Literature | Resources | Help | Sign In

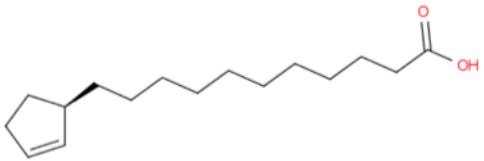
Hundreds of fatty acids synthesized by thousands of plants and their phylogenetic relationships

A major goal of PlantFAdb is to allow users to easily explore relationships between unusual fatty acid structures and the plant species that produce them. Clicking on “Tree” from the home page provides an overview of the data coverage of the plant kingdom.



Phylogeny

Explore relationships between unusual FA structures and plants that produce them.



Fatty Acids

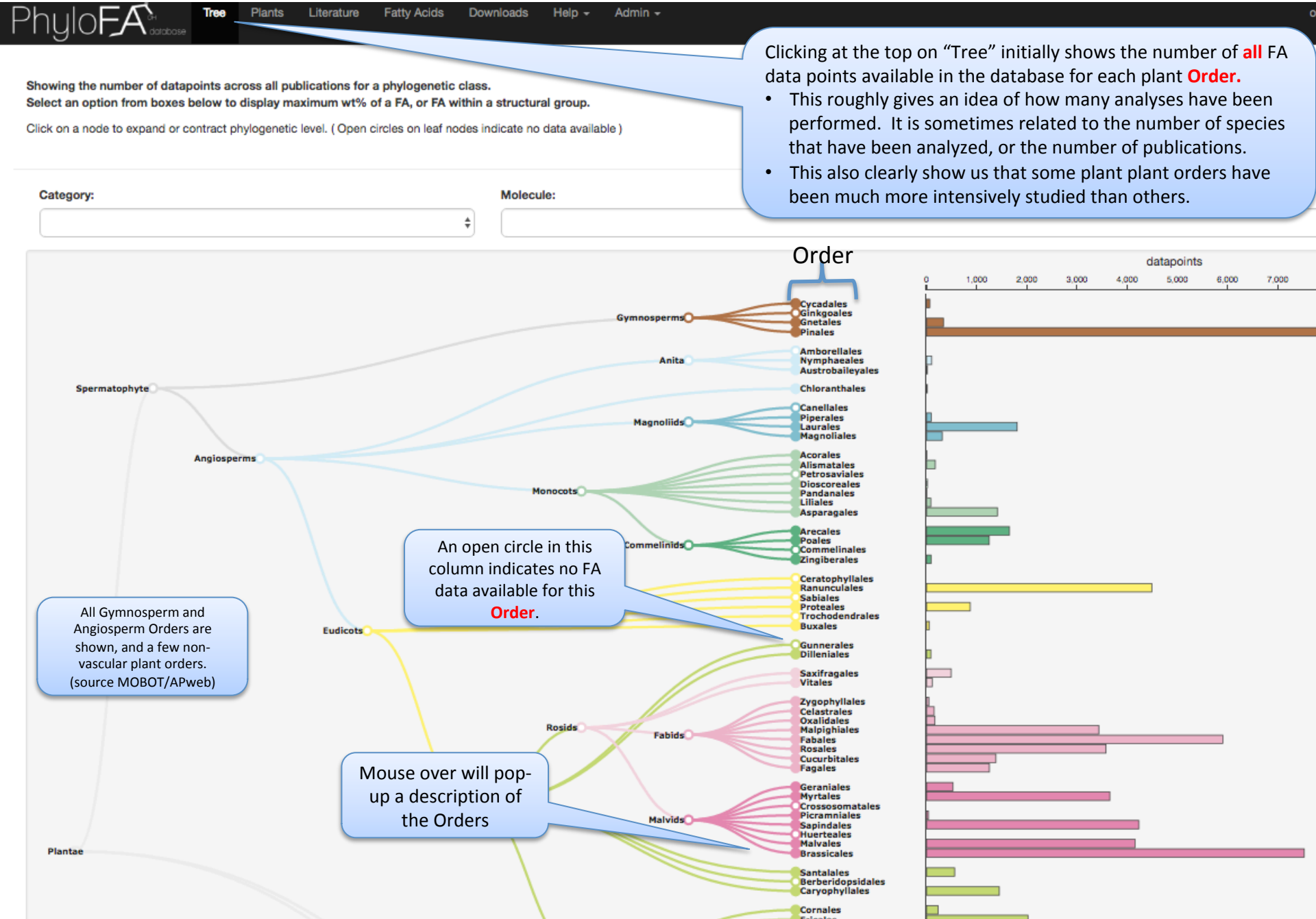
Structure images and info for >400 FA. Click Name to see species that produce a FA, publications, and data. Click 'Tree' to display phylogentic distribution of a FA

Plants

FA analysis for > 7000 plants. Click on species for graphs of FA composition, oil content, and links to publications and individual data sets.

The PlantFAdb website and database are based on the superb SOFA database (sofa.mri.bund.de).

A Brief Introduction to PlantFAdb



Clicking at the top on "Tree" initially shows the number of **all** FA data points available in the database for each plant **Order.**

- This roughly gives an idea of how many analyses have been performed. It is sometimes related to the number of species that have been analyzed, or the number of publications.
- This also clearly show us that some plant plant orders have been much more intensively studied than others.

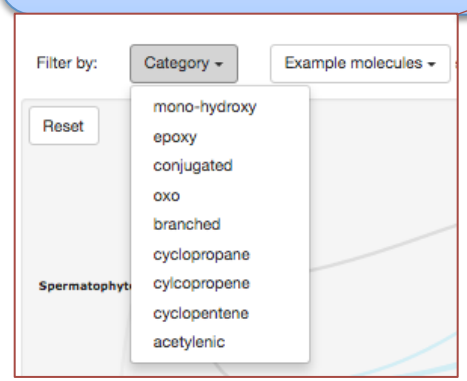
All Gymnosperm and Angiosperm Orders are shown, and a few non-vascular plant orders. (source MOBOT/APweb)

An open circle in this column indicates no FA data available for this **Order**.

Mouse over will pop-up a description of the Orders

- Two drop down boxes are available that will produce a phylogenetic tree for either a) category of fatty acid or b) selected individual fatty acids.

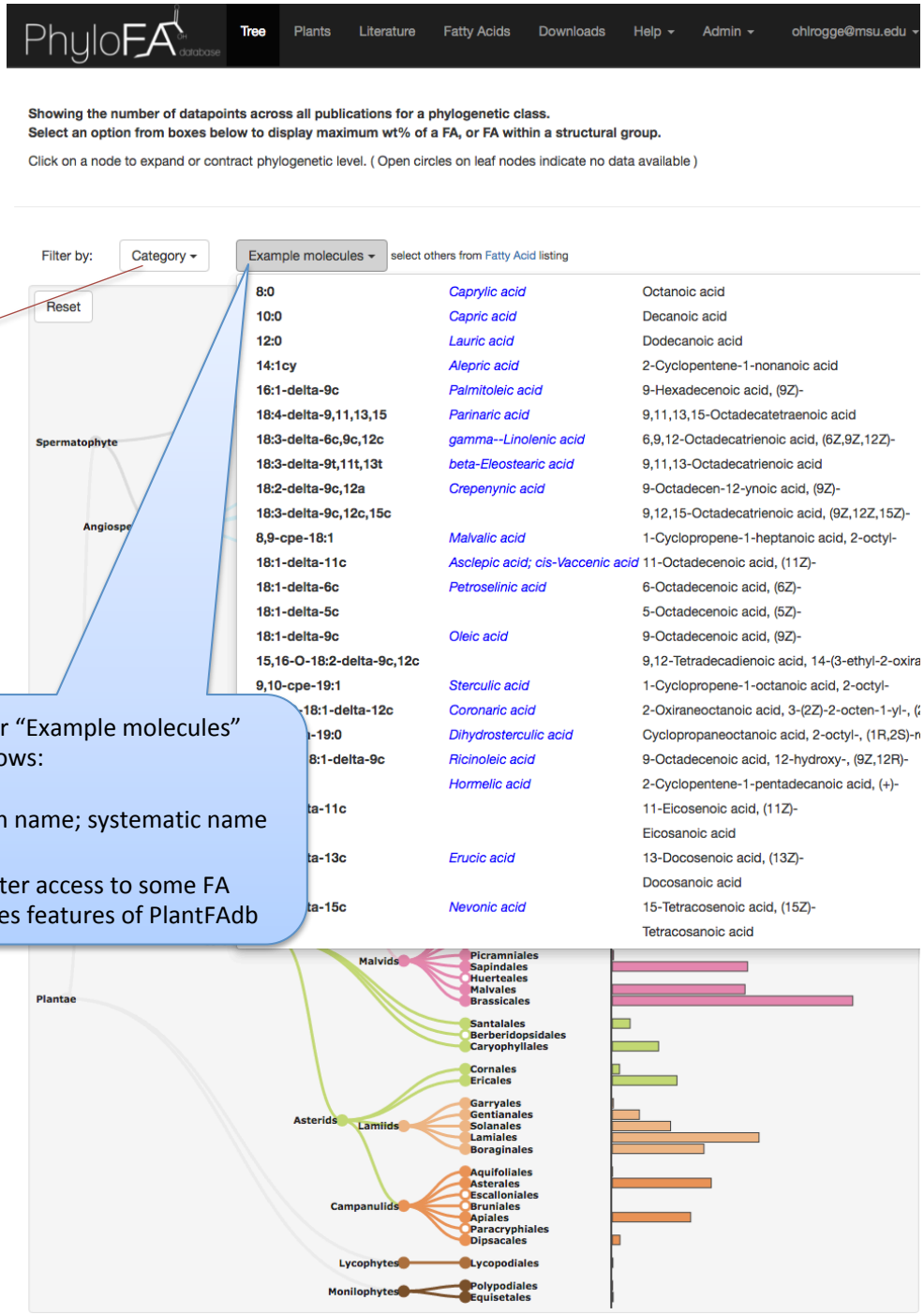
The drop down list for “Category” allows user to display the phylogenetic distribution of a particular functional group (e.g. epoxy, cyclopropane, etc.)



The drop down list for “Example molecules” shows:

Delta notation; common name; systematic name

This list provides faster access to some FA structures and illustrates features of PlantFAdb



PhyloFA database

Tree | Plants | Literature | Fatty Acids | Downloads | Help | Admin | ohlrogge@msu.edu

Showing the maximum wt% across all publications for FA: 8:0; Caprylic acid; Octanoic acid

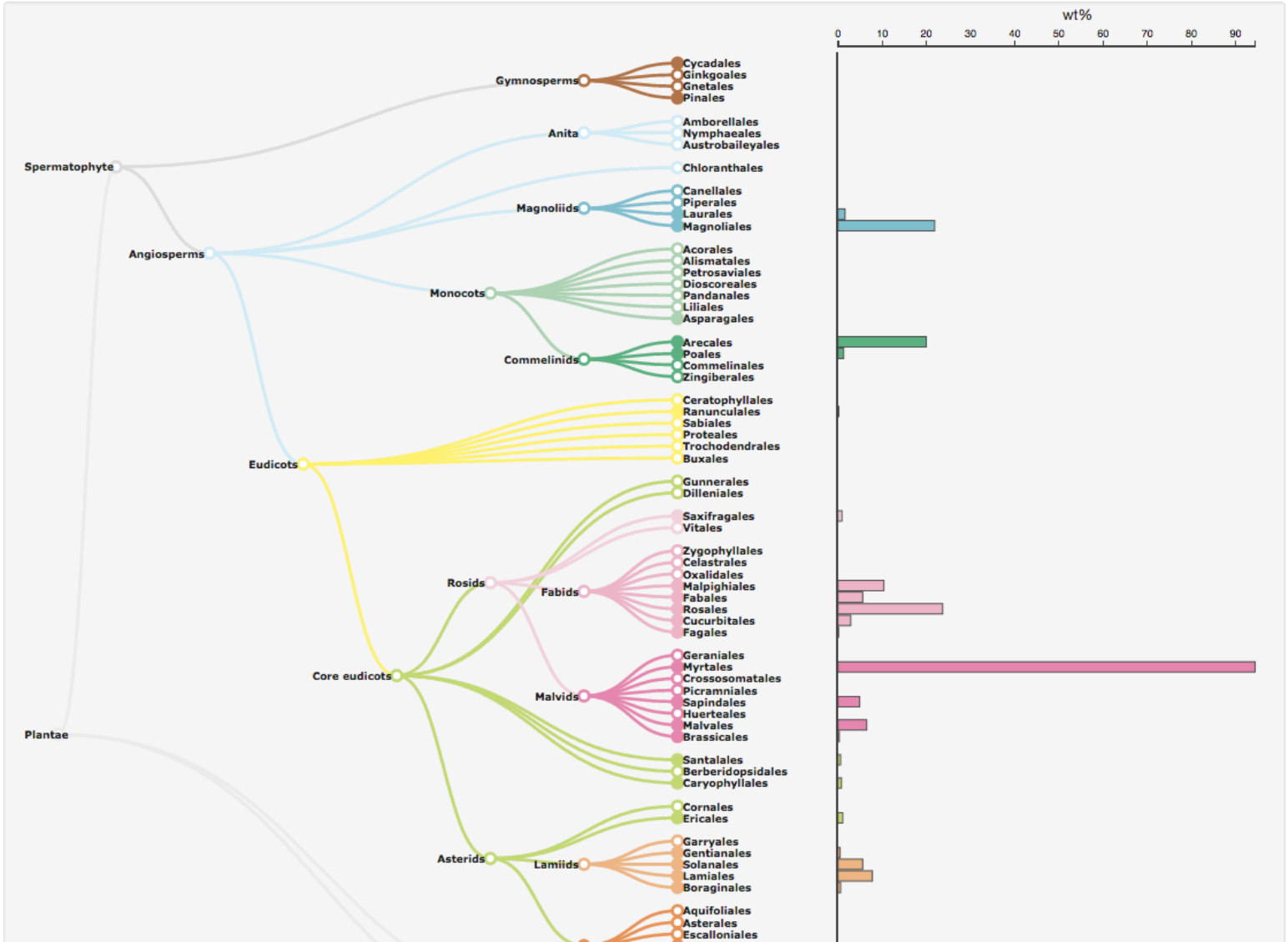
Click on a node to expand or contract phylogenetic level. (Open circles on leaf nodes indicate no data a

Choosing 8:0 from the drop down list displays the plant orders that have been reported to produce 8:0 and the maximum wt% reported for each order.

- Clicking on the Myrtales Node expands to Family and species.
- Clicking on the Bar in the graph provides species and publications.

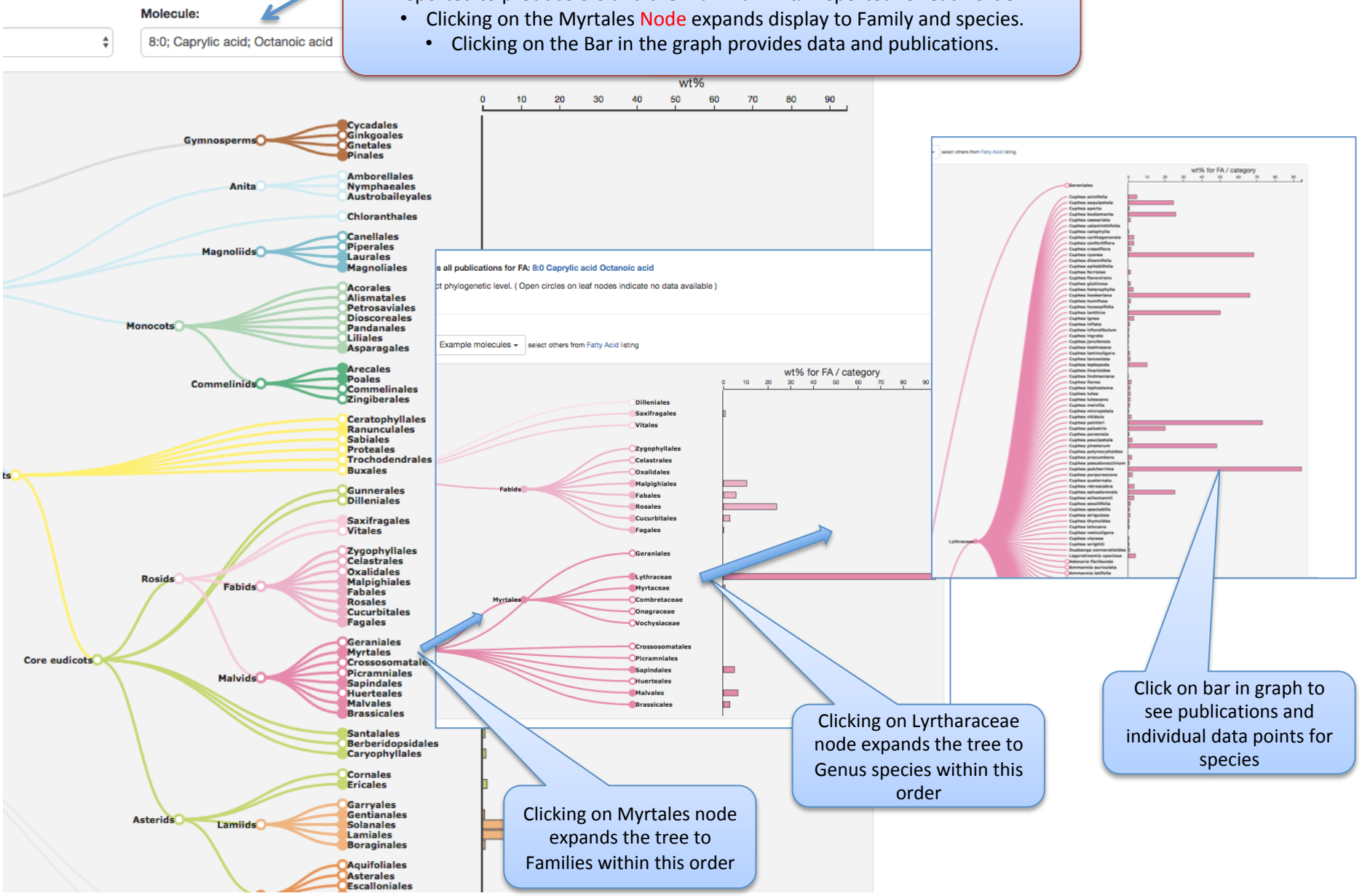
Category:

Molecule: 8:0; Caprylic acid; Octanoic acid



Choosing 8:0 from the drop down list displays the plant orders that have been reported to produce 8:0 and the maximum wt% reported for each order.

- Clicking on the Myrtales Node expands display to Family and species.
  - Clicking on the Bar in the graph provides data and publications.



Clicking on Myrtales node expands the tree to Families within this order

Clicking on Lyrtharaceae node expands the tree to Genus species within this order

Click on bar in graph to see publications and individual data points for species

PhyloFA database | Fatty Acids | Tree | Plant... | ohlrogge@msu.edu

Exploring Phylogenetic Relationships between Hundreds of Pla...

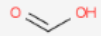
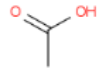
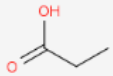
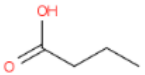
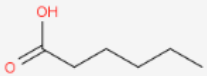
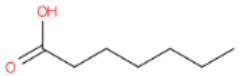
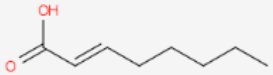
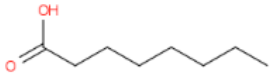
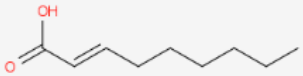
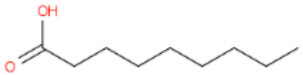
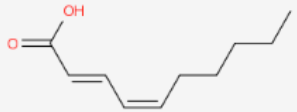
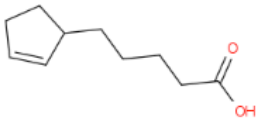
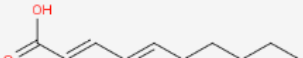
The "**Fatty Acids**" main page provides a list of FA structures in the database. Initially it is sorted by MW and only FA with data points in the database are shown.

Searching is currently based on case insensitive exact matching to any part of text. Simple query will search info in any of the columns of this page.
You can also select a list of hydroxy fatty acids by searching with term 'hydroxy'. To select a list of cyclo fatty acids, search with term 'cyc'. Other general terms are: epoxy, yne, octadece, cpa, cpe, C22, etc.

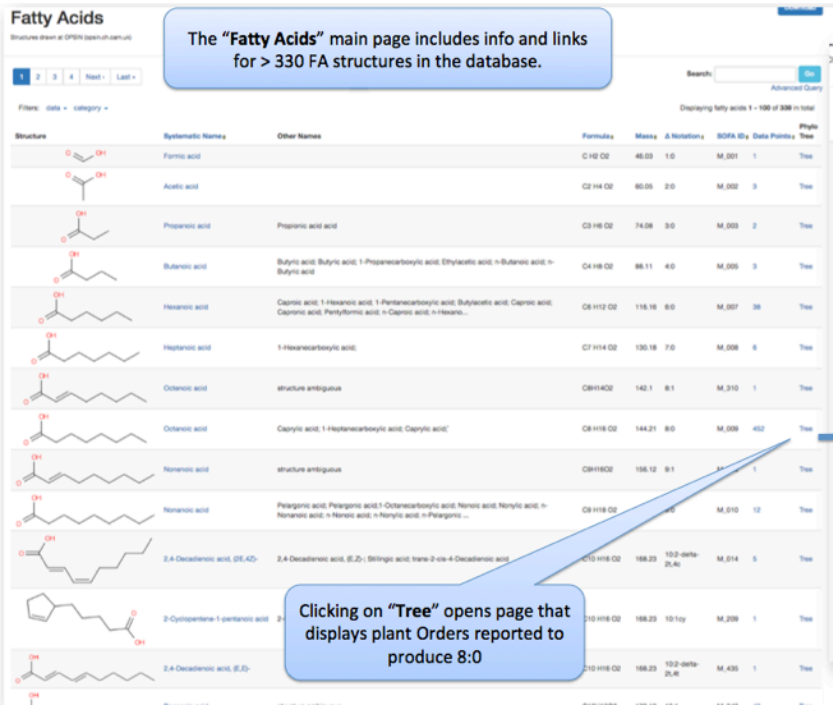
1 2 3 4 Next › Last »

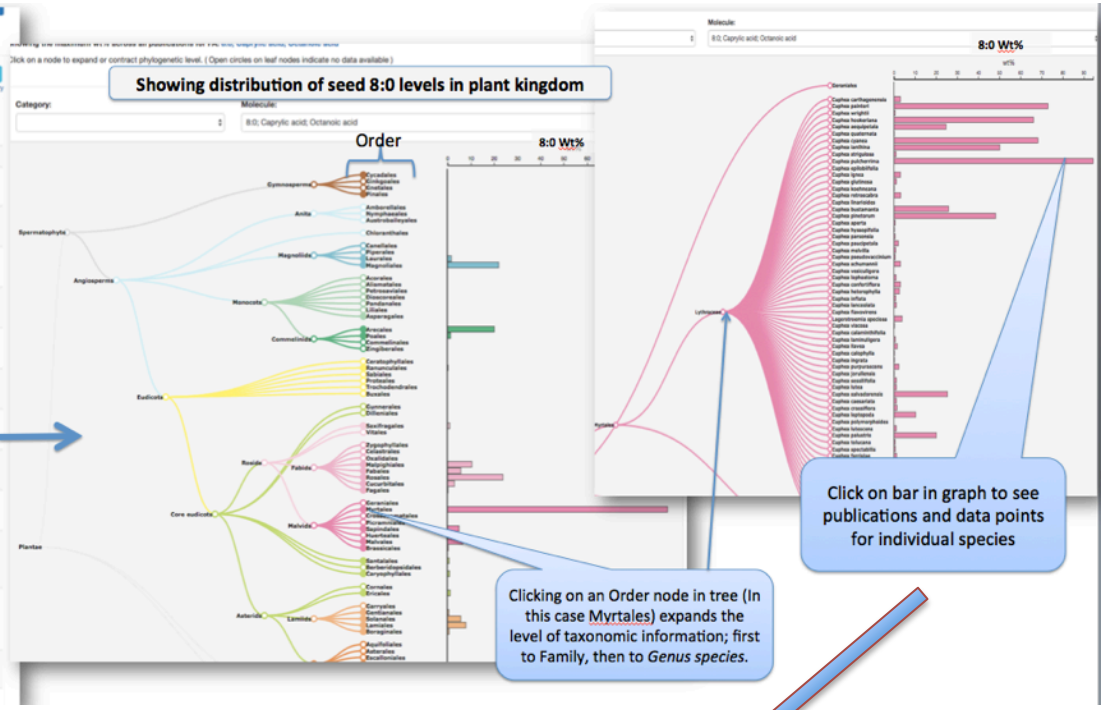
Go
Advanced Query

...ing fatty acids **1 - 100** of **339** in total

Structure	Phylo Tree	Systematic Name	Δ Notation	Other Names	Formula	Mass	Data Points	SOFA ID
	Tree	Formic acid	1:0		C H2 O2	46.03	1	M_001
	Tree	Acetic acid	2:0		C2 H4 O2	60.05	3	M_002
	Tree	Propanoic acid	3:0	Propionic acid acid	C3 H6 O2	74.08	2	M_003
	Tree	Butanoic acid	4:0	Butyric acid; Butyric acid; 1-Propanecarboxylic acid; Ethylacetic acid; n-Butanoic acid; n-Butyric acid	C4 H8 O2	88.11	3	M_005
	Tree	Hexanoic acid	6:0	Caproic acid; 1-Hexanoic acid; 1-Pentanecarboxylic acid; Butylacetic acid; Caproic acid; Capronic acid; Pentylformic acid; n-Caproic acid; n-Hexano...	C6 H12 O2	116.16	39	M_007
	Tree	Heptanoic acid	7:0	1-Hexanecarboxylic acid;	C7 H14 O2	130.18	6	M_008
	Tree	Octenoic acid	8:1	structure ambiguous	C8H14O2	142.1	1	M_310
	Tree	Octanoic acid	8:0	Caprylic acid; 1-Heptanecarboxylic acid; Caprylic acid;`	C8 H16 O2	144.21	467	M_009
	Tree	Nonenoic acid	9:1	structure ambiguous	C9H16O2	156.12	1	M_340
	Tree	Nonanoic acid	9:0	Pelargonic acid; Pelargonic acid;1-Octanecarboxylic acid; Nonoic acid; Nonylic acid; n-Nonanoic acid; n-Nonoic acid; n-Nonylic acid; n-Pelargonic ...	C9 H18 O2	158.24	12	M_010
	Tree	2,4-Decadienoic acid, (2E,4Z)-	10:2-delta-2t,4c	2,4-Decadienoic acid, (E,Z)-; Stillingic acid; trans-2-cis-4-Decadienoic acid	C10 H16 O2	168.23	5	M_014
	Tree	2-Cyclopentene-1-pentanoic acid	10:1cy	2-Cyclopentene-1-valeric acid; Aleprestic acid	C10 H16 O2	168.23	1	M_209
	Tree	2,4-Decadienoic acid, (E,E)-	10:2-delta-2t,4t		C10 H16 O2	168.23	1	M_435

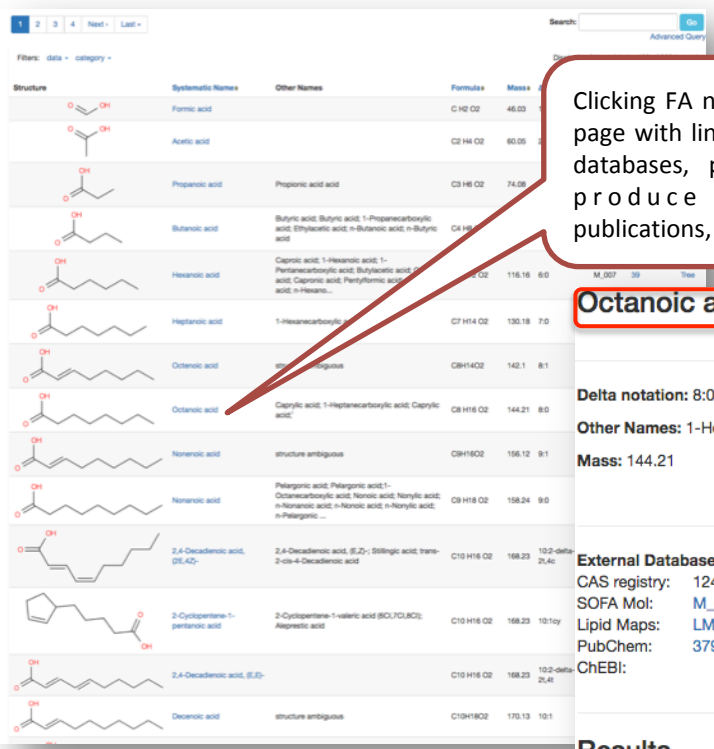
From Fatty Acid page to phylogenetic information……..





Publication	Plant	Sofa Table	Value	Unit
Graham, S. A.; Kleiman, R. (1992). Industrial Crops and Products 1 31-34	Cuphea pulcherrima	TAB_000655	94.4	GLC-Area-%

Links to underlying SOFA data tables



Clicking FA name brings page with links to other databases, plants that produce the FA, publications, and more..

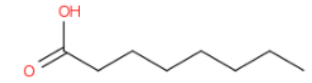
A page for each fatty acid

Octanoic acid (C8 H16 O2)

Delta notation: 8:0

Other Names: 1-Heptanecarboxylic acid; Caprylic acid;`

Mass: 144.21



Structure drawn at OPSIN (opsin.ch.cam.uk)

External Database IDs:
CAS registry: 124-07-2
SOFA Mol: M_009
Lipid Maps: LMFA01010008
PubChem: 379
ChEBI:

Links to other databases

inchi: InChI=1/C8H16O2/c1-2-3-4-5-6-7-8(9)10/h2-7H2,1H3,(H,9,10)/f/h9H

stdinchi: InChI=1S/C8H16O2/c1-2-3-4-5-6-7-8(9)10/h2-7H2,1H3,(H,9,10)

stdinchikey: WWZKQHOCKIZLMA-U

smiles: C(CCCCCCC)(=O)O

8:0 wt% in species

Results

1 2 3 4 5 Next › Last »

Publications reporting 8:0 in seeds

Displaying results **1** - **100** of **467** in total

Plant	Publication	Value	Unit
Cuphea pulcherrima	Graham, S. A.; Kleiman, R. (1992). Industrial Crops and Products 1 31-34	94.4	GLC-Area-%
Cuphea painteri	Miller, R. W.; Earle, F. R.; Wolff, I. A.; Jones, Q. (1964). Journal of the American Oil Chemists' Society 41 279-280	73.0	GLC-Area-%
Cuphea painteri	Hirsinger, F. (1980). Fette Seifen Anstrichmittel 82 385-389	70.0	GLC-Area-%
Cuphea cyanea	Graham, S. A.; Kleiman, R. (1992). Industrial Crops and Products 1 31-34	68.3	GLC-Area-%
Cuphea cyanea	Graham, S. A. (1989). Critical Reviews in Food Science and Nutrition 28 139-173	67.8	GLC-Area-%
Cuphea cyanea	Graham, S. A.; Kleiman, R. (1987). Biochemical Systematics and Ecology 15 433-439	67.8	GLC-Area-%
Cuphea hookeriana	Hirsinger, F. (1980). Fette Seifen Anstrichmittel 82 385-389	66.1	GLC-Area-%
Cuphea painteri	Roebbelen, G. (1984). Fette Seifen Anstrichmittel 86 373-379	66.0	GLC-Area-%
Cuphea hookeriana	Miller, R. W.; Earle, F. R.; Wolff, I. A.; Jones, Q. (1964). Journal of the American Oil Chemists' Society 41 279-280	65.0	GLC-Area-%
Cuphea painteri	Baumann, Horst; Bühler, Matthias; Fochem, Heinz; Hirsinger, Frank; Zoebelein, Hans; Falbe, Jürgen (1988,1). Angewandte Chemie International Edition in English 27 41-62	65.0	GLC-Area-%
Cuphea painteri	Graham, S. A.; Hirsinger, F.; Robbelen, G. (1981). American Journal of Botany 68 908-917	65.0	GLC-Area-%

Species ranked in order of highest 8:0 content

Note: Many publications report FA contents as 18:1, 18:2, 18:3 etc. without specifying double bond position or configuration whereas other analyses specify oleic (18:1 delta 9c), linoleic acid, etc. SOFA (and PlantFAdb) store these data separately. *(In future user will be able to group these.)*
The data are also plotted separately on graphs that compile data for multiple publications. *(In future user will be able to group these)*

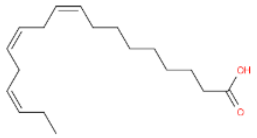
Back Edit

9,12,15-Octadecatrienoic acid, (9Z,12Z,15Z)- (C18 H30 O2)

Delta notation: 18:3-delta-9c,12c,15c

Other Names: 9,12,15-Octadecatrienoic acid, (Z,Z,Z)-; Linolenic acid; (9Z,12Z,15Z)-9,12,15-Octadecatrienoic acid; (Z,Z,Z)-Octadeca-9,12,15-trienoic acid; (all-Z)-9,12,15-Octadecatrienoic acid; 9,12,15-all-cis-Octadecatrienoic acid; 9-cis,12-cis,15-cis-Octadecatrienoic acid; 9Z,12Z,15Z-Octadecatrienoic acid; all-cis-9,12,15-Octadecatrienoic acid; alpha-Linolenic acid; cis,cis,cis-9,12,15-Octadecatrienoic acid; cis-9,cis-12,cis-15-Octadecatrienoic acid; cis--delta-9,12,15-Octadecatrienoic acid; -alpha--Linolenic acid

Mass: 278.43



Structure drawn at OPSIN (opsin.ch.cam.uk)

External Database IDs:
CAS registry: 463-40-1
SOFA Mol: M_106
Lipid Maps: LMFA01030152
PubChem: 5280934
ChEBI:

inchi: InChI=1/C18H30O2/c1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18(19)20/h3-4,6-7,9-10H,2,5,8,11-17H2,1H3,(H,19,20)/b4-3-,7-6-,10-9-/f/h19H

stdinchi: InChI=1S/C18H30O2/c1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18(19)20/h3-4,6-7,9-10H,2,5,8,11-17H2,1H3,(H,19,20)/b4-3-,7-6-,10-9-

stdinchikey: DTOSIQBPPRVQHS-PDBXOOCHSA-N

smiles: C(CCCCCC\C=C/C\C=C/C\C=C/CC)(=O)O

Results

1 2 3 4 5 ... Next › Last »

3083 data points for linolenic acid

Displaying results **1** - **100** of **3083** in total

Plant	Publication	Value	Unit
Capsicum annuum	Pérez-Gálvez, Antonio; Garrido-Fernández, Juan; Mínguez-Mosquera, Ma.Isabel; Lozano-Ruiz, Mercedes; Montero-de-Espinosa, Vicente (1999,2). Journal of the American Oil Chemists' Society 76 205-208	77.98	GLC-Area-%
Acacia suma	Banerji, R.; Chowdhury, A. R.; Misra, G.; Nigam, S. K. (1988). Journal of the American Oil Chemists' Society 65 1959-196		

Back Edit

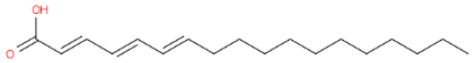
Octadecatrienoic acid (C18H30O2)

Structure is ambiguous

Delta notation: 18:3

Other Names: structure ambiguous

Mass: 278.22



Structure drawn at OPSIN (opsin.ch.cam.uk)

External Database IDs:
CAS registry:
SOFA Mol: M_089
Lipid Maps: ambiguous
PubChem:
ChEBI:

inchi:

stdinchi:

stdinchikey:

smiles:

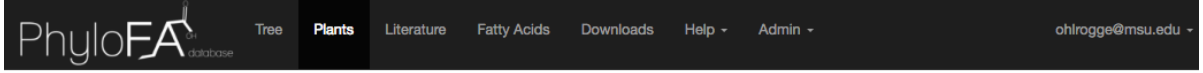
Results

1 2 3 4 5 ... Next › Last »

2988 data points for 18:3

Displaying results **1** - **100** of **2988** in total

Plant	Publication	Value	Unit
Acacia lenticularis	Banerji, R.; Chowdhury, A. R.; Misra, G.; Nigam, S. K. (1988). Journal of the American Oil Chemists' Society 65 1959-1960	80.3	GLC-Area-%
Lavandula spica	Chomova, T. V.; Asilbecova, D. T.; Gusakova, S. D.; Umarov, A. U. (1983). Khimiya Prirodnykh Soedinenii None 279-283	78.9	GLC-Area-%



Plants

The initial **Plants** page is sorted alphabetically by *Genus* but users can sort on other columns

Download

1 2 3 4 5 ... Next › Last »

Search: Go

Displaying plants **1** - **100** of **7667** in total

Genus	Species	Common Name	Family	Order	Oil Content	Publications	Data points
Abelia	corymbosa		Caprifoliaceae	Dipsacales		1	9
Abelmoschus	esculentus	Okra	Malvaceae	Malvales	28.8	8	49
Abelmoschus	ficulneus		Malvaceae	Malvales	14.4	1	14
Abelmoschus	moschatus	Musk Okra	Malvaceae	Malvales	19.5	1	6
Aberia	caffra	Kei Apple	Salicaceae	Malpighiales		1	8
Abies	alba	Silver Fir	Pinaceae	Pinales	37.7	2	26
Abies	alba	Silver Fir	Pinaceae	Pinales	37.7	2	37
Abies	amabilis	Pacific Silver Fir	Pinaceae	Pinales		1	21
Abies	balsamea	Balsam Fir	Pinaceae	Pinales		2	48
Abies	borisii-regis	Bulgarian Fir, Macedonian Fir	Pinaceae	Pinales		1	26
Abies	bornumelleriana		Pinaceae	Pinales		1	28
Abies	cephalonica	Greek Fir	Pinaceae	Pinales		2	55
Abies	concolor	White Fir	Pinaceae	Pinales	41.4	2	53
Abies	delavayi	Delavay's Fir	Pinaceae	Pinales		1	29
Abies	equi-trojani	Trojan Fir	Pinaceae	Pinales		1	28
Abies	fraseri	Fraser Fir	Pinaceae	Pinales		1	29
Abies	grandis	Grand Fir	Pinaceae	Pinales		3	51
Abies	homolepis	Nikko Fir	Pinaceae	Pinales		1	18
Abies	koreana	Korean Fir	Pinaceae	Pinales		1	18
Abies	lasiocarpa	Subalpine Fir	Pinaceae	Pinales	5.6	1	2
Abies	lasiocarpa	Subalpine Fir	Pinaceae	Pinales		1	28
Abies	lowiana	Sierra White Fir	Pinaceae	Pinales	16.6	1	32
Abies	nobilis	Noble Fir	Pinaceae	Pinales	24.3	1	32
Abies	nordmanniana	Nordmann Fir, Caucasian Fir	Pinaceae	Pinales		3	69
Abies	numidica	Algerian Fir	Pinaceae	Pinales		1	22
Abies	pindrow	Pindow Fir, West Himalayan Fir	Pinaceae	Pinales		1	26
Abies	pinsapo	Spanish Fir	Pinaceae	Pinales		2	54
Abies	procera	Noble Fir	Pinaceae	Pinales		1	21
Abies	veitchii	Christmas Tree	Pinaceae	Pinales		2	39
Abroma	augustum	Devil's Cotton	Malvaceae	Malvales		1	7

All names are searchable, including those used by SOFA (which are not shown on this page).

Search: sesame Go

Displaying **all 2** plants

Genus	Species	Common Name	Family	Order	Oil Content	Publications	Data point
Sesamum	indicum	Sesame	Pedaliaceae	Lamiales	44.3	33	291

Clicking on species name will bring up this page →

Sesamum indicum

Classification

Order: Lamiales

Family: Pedaliaceae

Genus: Sesamum

Species: indicum

External Link(s)

http://www.tropicos.org/Name/24300029

Name Resolution

TNRS Accepted data

Family: Pedaliaceae

Name: Sesamum indicum

Original SOFA Data

Family: Pedaliaceae

Name: Sesamum indicum

Plant names were updated using the Taxanomic Name Resolution Service (http://tnrs.iplantcollaborative.org)

Note: There may be other accepted names for a species not displayed here

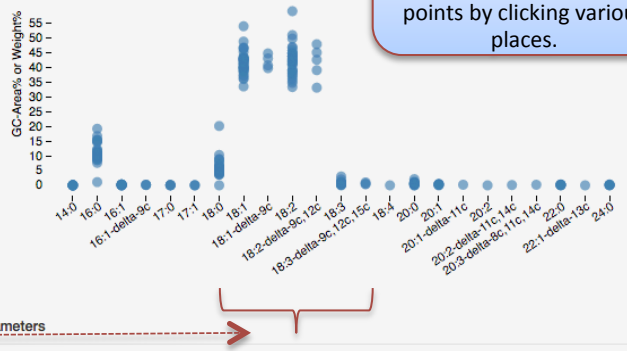
Original SOFA family and species names

Data

Data are compiled from multiple publications.
Mouse over individual data points for link to data and publications.

View 33 Publications | View 291 Data Points

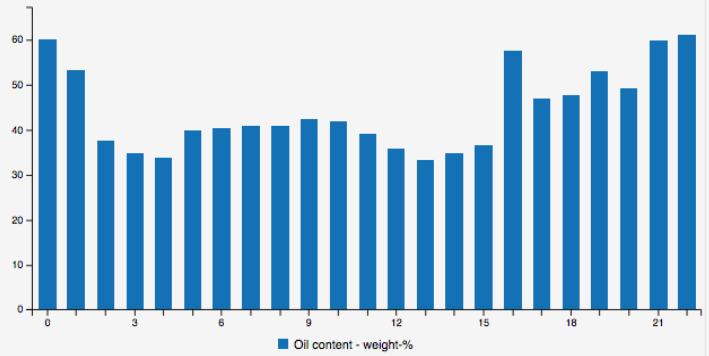
Fatty Acid Data

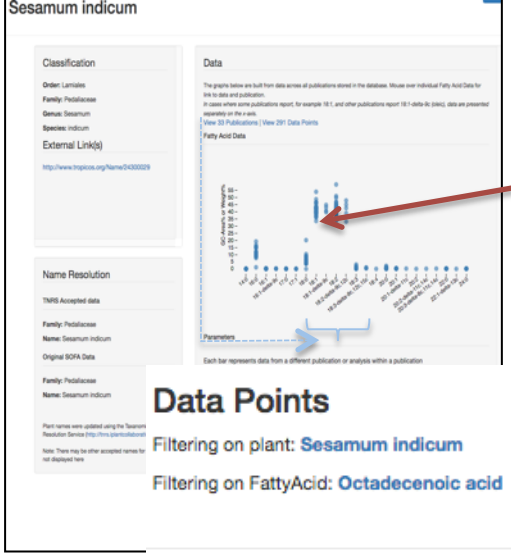


FA composition graphs are only intended as an overview. You can get to the publications and data points by clicking various places.

Parameters

Each bar represents data from a different publication or analysis within a publication





Clicking on 18:1 data points in graph brings list of publications underlying the values for 18:1

Download

Data Points

Filtering on plant: **Sesamum indicum**

Filtering on FattyAcid: **Octadecenoic acid**

Links to underlying SOFA data tables

Search: Go

Displaying **all 36** results

Publication	Sofa Table	Value	Unit
Yermanos, D. M.; Hemstreet, S.; Saleeb, W.; Huszar, C. K. (1972). Journal of the American Oil Chemists' Society 49 20-23	TAB_007583	53.9	GLC-Area-%
Daxa, Amin; Kothari, I. L. (1989). Journal of the Oil Technologists' Association of India 21 15-16	TAB_009085	48.7	GLC-Area-%
Daxa, Amin; Kothari, I. L. (1989). Journal of the Oil Technologists' Association of India 21 15-16	TAB_009083	46.7	GLC-Area-%
Daxa, Amin; Kothari, I. L. (1989). Journal of the Oil Technologists' Association of India 21 15-16	TAB_009086	46.4	GLC-Area-%
Tiscornia, E.; Bertini, G. C. (1974). Rivista Italiana delle Sostanze Grasse 51 333-347	TAB_007585	46.4	GLC-Area-%
Daxa, Amin; Kothari, I. L. (1989). Journal of the Oil Technologists' Association of India 21 15-16	TAB_009081	45.2	GLC-Area-%
Daxa, Amin; Kothari, I. L. (1989). Journal of the Oil Technologists' Association of India 21 15-16	TAB_009084	43.6	GLC-Area-%
Daxa, Amin; Kothari, I. L. (1989). Journal of the Oil Technologists' Association of India 21 15-16	TAB_009087	43.3	GLC-Area-%
Tsatsaronis, G. C.; Boskou, D.; Kehayoglou, A. (1971). Rivista Italiana delle Sostanze Grasse 48 490-492	TAB_007582	43.1	GLC-Area-%
Dutta, Jyotirmoy; Ghosh, Anita; Ghosh, Amitabha (1968). Indian Journal of Applied Chemistry 31 218-222	TAB_007577	42.9	GLC-Area-%
Abdel Rahman, A. H. Y. (1984). Grasas Aceites 35 119	TAB_007591	42.9	GLC-Area-%
Ro, J. H. Lim, M. A. (1983). Yakhak Hoechi. 27 169	TAB_007590	42.8	GLC-Area-%
Daxa, Amin; Kothari, I. L. (1989). Journal of the Oil Technologists' Association of India 21 15-16	TAB_009082	42.7	GLC-Area-%

Plants

Plants list filtered to show *Brassica napus*

Search: Brassica napus Go

Displaying **all 13** plants

Genus	Species	Common Name	Family	Order	Oil Content	Publications	Data points
Brassica	napus		Brassicaceae	Brassicales	38.4	2	4
Brassica	napus		Brassicaceae	Brassicales		2	16
Brassica	napus		Brassicaceae	Brassicales	44.3	8	56
Brassica	napus		Brassicaceae	Brassicales		1	18
Brassica	napus		Brassicaceae	Brassicales	25.0	1	15
Brassica	napus		Brassicaceae	Brassicales	34.2	1	31
Brassica	napus		Brassicaceae	Brassicales		1	13
Brassica	napus		Brassicaceae	Brassicales		1	12
Brassica	napus		Brassicaceae	Brassicales		1	12
Brassica	napus		Brassicaceae	Brassicales		1	5
Brassica	napus		Brassicaceae	Brassicales		1	8
Brassica	napus		Brassicaceae	Brassicales		1	11
Brassica			Brassicaceae	Brassicales		2	36

Why are there many “plants” listed for *Brassica napus*?
SOFA created a separate table for every FA analysis for every plant species from every publication.
If the plant species name was in any way different (spelling, variety, geographical origin, etc.) we did NOT condense these plant names.
However, as shown on the sesame page, we did condense data graphically if the SOFA text for plant name was identical.
In the future we hope to further condense plant names.

Literature

Abstracts provided when we could find them

DOI is available for ~1000 publications and provides link to full text

Simple query will search on author, title, abstract, Journal, Year, ID

1 2 3 4 5 … Next › Last »

Search: Go

Displaying pubs **1 - 100** of **1982** in total

Authors	Year		Title	Journal	Volume	Pages	DOI	UID	Data points
Abburra, R. E.; Zygadlo, J. A.; Guzman, C. A.	1992	A	Fatty acids variation in Sapindaceae	Biochemical Systematics and Ecology	20	469-471	10.1016/0305-1978(92)90088-U	WOS:A1992JF97400009	76
Abd Alla, E. - S. A. M.	1997		None	Dtsch. Lebensm. Rundsch.	93	149-152		PFA:10011	9
Abd El Aal, M. H. Gomaa, E. G. et al.	1987		None	Fat. Sci. Technol.	89	304		PFA:10012	24
Abd-Allah, M. A. Abu Salem, F. M. Goma, M. A.	1975		None	Elelmiszervizsgalati Kozl.	21	53-57		PFA:10014	6
Abdel Rahman, A. H. Y.	1984		None	Grasas Aceites	35	119		PFA:10015	7
Abdel-M Oety, Ezzat M.	1981	A	Biologically Active Compounds Derived from Cyclopentenyl Fatty Acids	Fette, Seifen, Anstrichmittel	83	65-70	10.1002/lipi.19810830206	WOS:A1981LG04400005	3
Abdel-Nabey, A. A.; Shehata, A. D. Y.; Ragab, M. H.; Rossell, J. B.	1991	A	Total unsaponifiables, sterols and tocols of cottonseed oil from Egyptian and other varieties	Rivista Italiana delle Sostanze Grasse	68	583-587		CABI:19920316756	14
Abdel-Rahaman, A. H. Y.	1980	A	A study on some Egyptian citrus seed oils	Grasas y Aceites	31	331-333		FSTA:1981-11-N-0557	21
Abdel-Rahaman, A.-H.Y.	1980		None	Grasas y Aceites	31	331		PFA:10018	35
Abdel-Rahim; E.A. El-Sadany, S.S. et al.	1986		None	Grasas y Aceites	37	81		PFA:10021	33
Abdel-Rahman, A. H. - Y.	1987		None	Riv. Ital. Sostanze Grasse	59	287		PFA:10022	/results?pub_id=10022
Abdel-Rahman, A. H. Y.	1982	A	Compositional study on some Egyptian peanut varieties	Rivista Italiana delle Sostanze Grasse	59	287-288		CABI:19821440216	/results?pub_id=14814
Abdelkalikova, K. A. Artatonova, N. A. Nikonov, K.	1983		None	Khim. Prir. Soedin	None	138		PFA:10023	13
Abdelrahaman, A. H. Y.	1980		A STUDY ON SOME EGYPTIAN CITRUS SEED OILS	Grasas Y Aceites	31	331-333		WOS:A1980KR95800004	/results?pub_id=13591
Abdelrahim, E. A.; Elsaadany, S. S.; Wasif, M. M.	1986		CHEMICAL AND PHYSICAL STUDIES ON BALANITES-AEGYPTIACA OIL	Grasas Y Aceites	37	81-85		WOS:A1986C704700005	/results?pub_id=13592

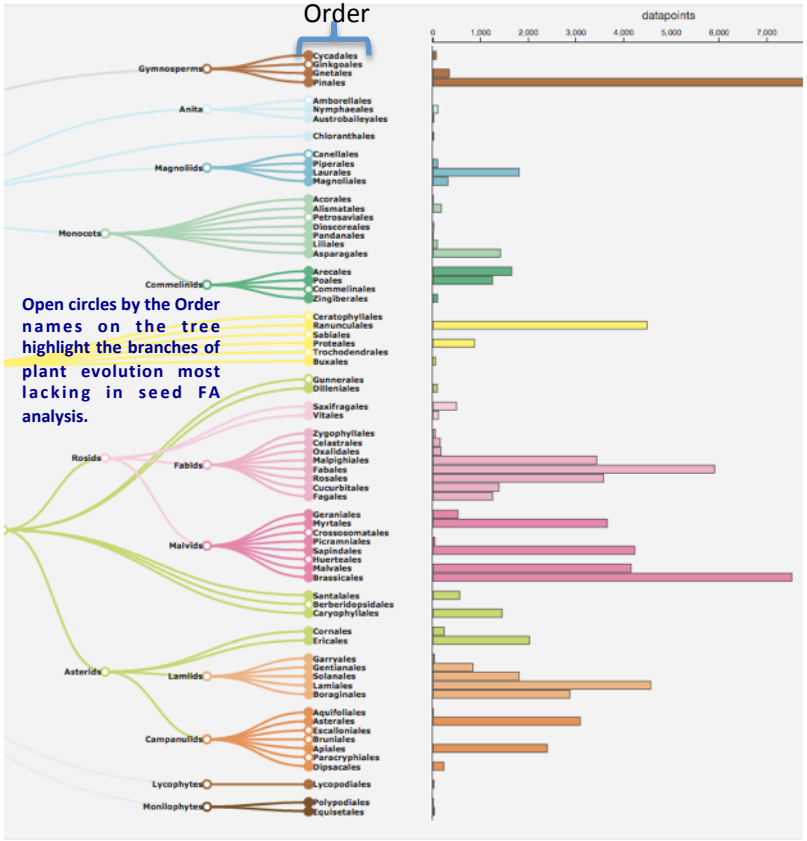
Hundreds of unpublished FA analyses from SOFA are also included

How much of the plant kingdom has been surveyed?

What branches in plant evolution are missing FA data and can we discover new plant FA structures in these branches?

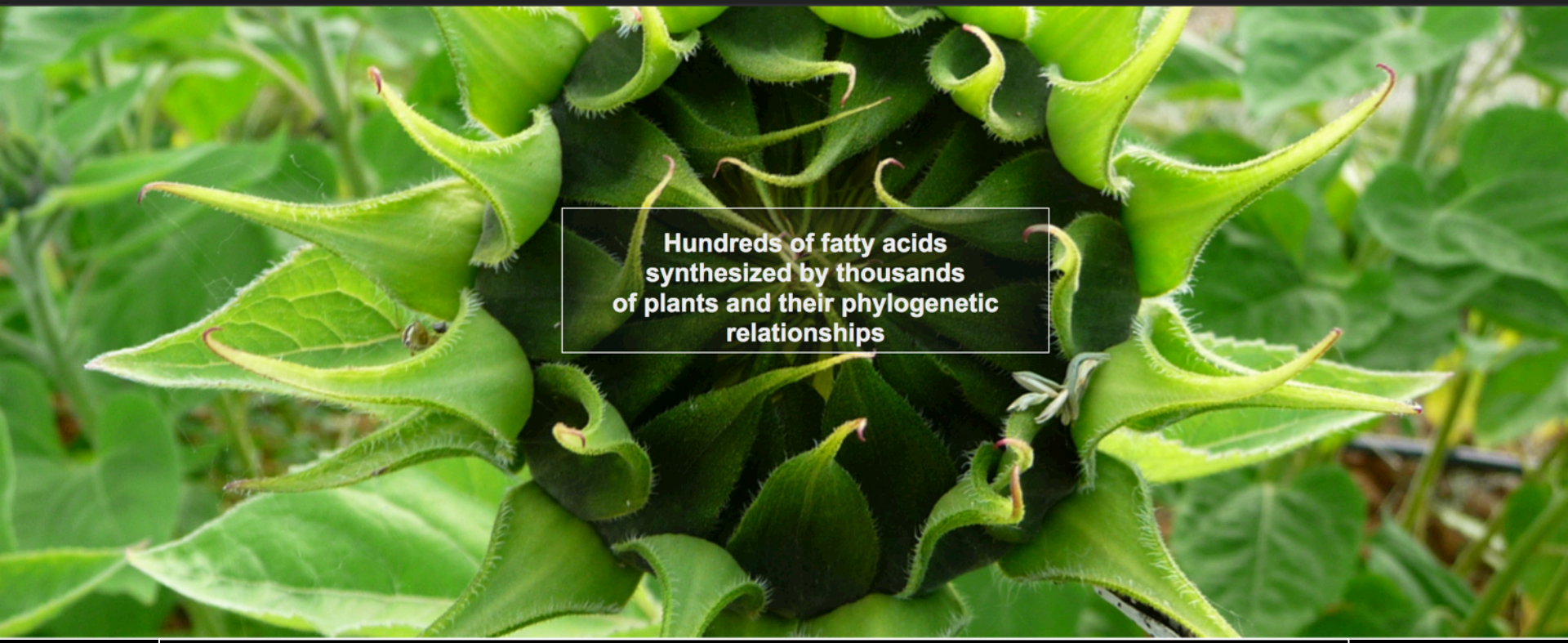
Analysis of seeds of thousands of plant species has revealed the occurrence of hundreds of different fatty acid structures. Are there more unique fatty acid structures still to be discovered? Examination of all the plant species represented in PlantFAdb, together with recent phylogenetic information allows us to identify branches in plant evolution whose seeds may not have been analyzed for fatty acid composition.

Approximately 25% of plant orders and 50% of plant families have not been analyzed for FA composition. Therefore, many new fatty acid structures remain to be discovered!!



A Resource for Discovery of New Fatty Acid Structures: Plant Orders without Data in PlantFAdb

Order	Description
Amborellales	Amborella trichopoda is only species. Molecular phylogenetic analyses consistently place the genus at or near the base of the flowering plant lineage
Berberidopsidales	Berberidopsidales is an order of Southern Hemisphere woody flowering plants.
Bruniales	**Bruniales** not used at the rank of order until a 2008 study suggested that Bruniaceae and Columelliaceae are sister clades
Canellales	**Canellales** is one of the four orders of the magnoliids. It is defined to contain two families: Canellaceae and Winteraceae, which comprise 136 species of fragrant trees and shrubs
Ceratophyllales	Hornwort order of flowering plants, consisting of a single family (Ceratophyllaceae) with one cosmopolitan genus (*Ceratophyllum*) containing 10 species
Commelinales	Spiderwort and pickerelweed order of flowering plants, comprising more than 800 species of mostly tropical and subtropical herbs
Escalloniales	Member of Asterids clade
Huerteales	Shrubs or small trees found in most tropical or warm temperate regions. The flowers of *Perrottetia* have been studied in detail but otherwise, all five of the genera are poorly known
Paracryphiales	Family of woody shrubs and trees native to Australia, southeast Asia, and New Caledonia. In the APG III system of 2009, the family is placed in its own order, Paracryphiales, in the campanulid clade of the asterids
Petrosaviales	Very small order of rare leafless achlorophyllous, mycoheterotrophic plants found in dark montane rainforests in Japan, China, Southeast Asia and Borneo
Sabiales	Represented by a single family (Sabiaceae), which is also considered by some as a member of Proteales.
Trochodendrales	Comprises two extant genera, each with a single species found in south east Asia. The two living species (*Tetracentron sinense* and *Trochodendron aralioides*) both have secondary xylem without vessel elements, which is quite rare in angiosperms
Vahliales	Herbs and subshrubs that grow in Africa and the Indian subcontinent. This family had previously been placed in the Saxifragales order, and was reassigned to the new order Vahliales in 2016 by the APG IV system



Many other features of the website and database are not described here, but can be discovered by clicking on links.

Future: We hope to add information on genes, enzymes and pathways for synthesis of unusual fatty acids, and which pathways are still unknown.

Note: *PlantFAdb does not include data from SOFA for tocopherols, sterols, and triacylglycerol structures. Links to the original SOFA website tables are provided in PlantFAdb for each publication. It is likely that some mistakes have been made during incorporation of SOFA information into PlantFAdb. Please notify John Ohlrogge if you find these.*