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PhyloFAdb-SOFA: A Resource for Exploring Hundreds of Plant Fatty Acid Structures Synthesized by Thousands of Plants and their Phylogenetic Relationships

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The Seed Oil Fatty Acid (SOFA) database[1,2] is a unique resource that presents data from over 1500 publications (plus unpublished data) for >300 fatty acids and is based on analysis of >7000 plant species. Building on SOFA, we are developing **PhyloFAdb** as a tool to allow users to easily explore phylogenetic relationships between fatty acid structures and the plant species that produce them. Features of PhyloFAdb include:

- **Phylogenetic Trees:** The occurrence of a fatty acid structure in different plant species (as reported in SOFA) is displayed on a phylogenetic tree. Users can navigate between levels of Order, family, Genus and species by clicking on nodes in the tree. The wt % for a selected FA is indicated on graphs and clicking in the graph leads to underlying data and publications.
- **Compiled analytical data:** Fatty acid compositions and other parameters for each plant species have been compiled from multiple publications on a single page in graphical form.
- As a **guide for finding new FA structures** PhyloFAdb presents information on plant families that have had little or no analysis**.**

Information will be added on genes, enzymes and pathways for synthesis of unusual fatty acids, and which pathways are still unknown. Literature will be surveyed to add data from newer publications.

[1]Matthäus, B. (2012), The new database *Seed Oil Fatty Acids* (SOFA). Lipid Technology, 24: 230–234. [2]Aitzetmüller, K., Matthäus, B. and Friedrich, H. (2003), A new database for seed oil fatty acids — the database SOFA. Eur. J. Lipid Sci. Technol., 105: 92–103.