Since April 2012 the database “Seed Oil Fatty Acids (SOFA)” is available again on the internet free of charge after registration (www.sofa.mri.bund.de). In cooperation with the company Comicon GmbH (Hamburg, Germany), specialized on programs with chemical background, and by financial support of the German Federal Ministry for Nutrition, Agriculture and Consumer Protection supplied by the Fachagentur Nachwachsende Rohstoffe e. V. a new database system was created (FKZ: 20014408). The database comprises 580 different fatty acid structures and more than 7,000 plant species. The information of about 130,000 individual percentage data from fatty acid tocopherol, phytosterol and triacylglycerol composition as well as some physical data of seed oils occurring in plant seeds is distributed on more than 18,000 tables. The information was collected for more than 40 years from appropriate pharmaceutical, botanical and chemical literature by the Max Rubner-Institut (MRI). The strongest feature of the database is the delta-notation allowing the search for fatty acid structures or partial structures such as *9a* (acetylene in position 9), or *5t,9c* (for 5-trans,9-cis). By this it is possible to find the occurrence, percentage level and distribution of such structures in the plant kingdom. The database may be very useful for chemists, biochemists and food scientists as well as for botanists to find information not only for renewable resources and "green" chemistry, but also for gene technology, for understanding the enzymes of fatty acid biosynthesis and their mutations during the evolution of plant families and species, for plant chemotaxonomy and for systematic and phylogenetic botany.