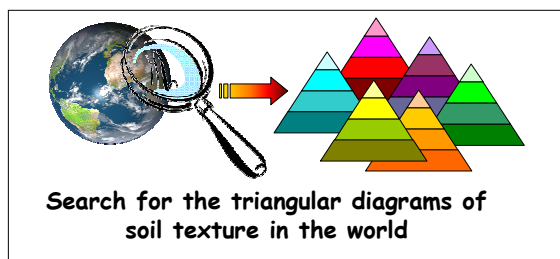


Lost in the triangular diagrams of soil texture

Richer de Forges A.*, Feller C.**, Jamagne M.*, Arrouays D.*

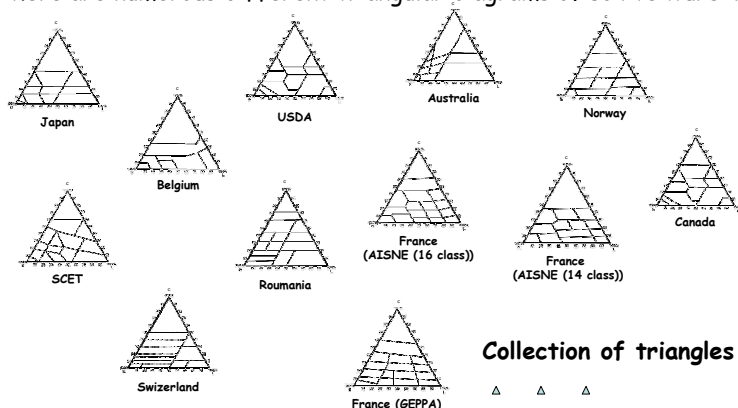
* INRA US 1106 Unité InfoSol, 2163, avenue de la pomme de pin, CS4001, Ardon, 45075 Orléans cedex 02, France
 ** IRD, UR Seqbio, ENSAM, Bâtiment 12, 2, place Viala, 34060 Montpellier cedex 01



Upper limits of particle-size fractions (µm)

	Clay	Silt	Sand
Allemagne	2	63	2000
America Association of State Highway and transportation Officials (AASHTO)	5	80	2000
Atterberg 1905	2	20	2000
Australie	2	20	2000
Autriche	2	63	2000
Belgium	2	50	2000
Bulgarie	1	50	1000
Bureau des sols (1890-1895)	5	50	1000
Canada	2	50	2000
Danemark	2	63	2000
Ecosse	2	50	2000
Espagne	2	20	2000
Estonie	2	50	2000
Finlande	2	50	2000
France (Aisne)	2	50	2000
France (Demolon)	2	20	2000
France (GEPPA)	2	50	2000
France (Hénin)	2	50	2000
France (laboratoire de Versailles)	2	50	2000
France (Maiterre)	2	50	2000
Greece	2	50	2000
International Soil Science Society (ISSS)	2	20	2000
Northern Ireland	2	60	2000
Italy	2	50	2000
Japan	2	20	2000
Latvie	63		
Lituanie	1	50	1000
Malte	53		
MIT 1931	2	60	2000
Norway	2	60	2000
ORSTOM / IRD	2	50	2000
Pays Bas	2	63	2000
Portugal	2	20	2000
Roumanie	2	50	2000
UK	2	60	2000
SCET	2	20	2000
Slovaquie	1	50	2000
Sweden	2	60	2000
USDA	2	50	2000

There are numerous different triangular diagrams of soil texture in the world.

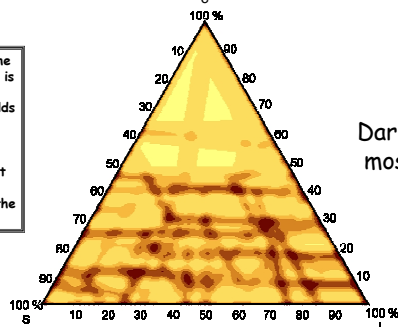


Overlaying triangular diagrams



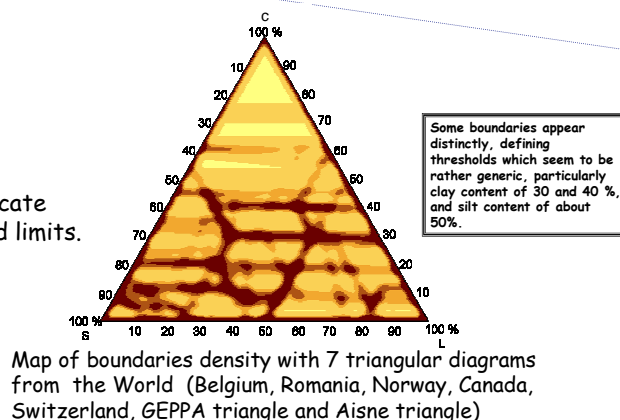
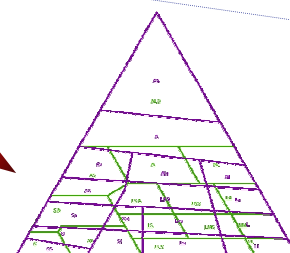
Applying of a grid on triangular diagrams and calculating the density of boundaries in each cell.

The more the colour is dark, the more the density of boundaries is high. We observe a relative convergence on certain thresholds of clay content in most cases along the clay-loam side of the triangle and for the upper boundary of clay content. Most of the discrepancies appear at the bottom and the centre of the triangle, for ternary mixtures.



Darkest parts indicate most often agreed limits.

Comparison of 2 triangular diagrams for France: GEPPA triangle (purple) and Aisne triangle (green)



Some boundaries appear distinctly, defining thresholds which seem to be rather generic, particularly clay content of 30 and 40 %, and silt content of about 50%.

Some particle-size distribution limits seem to reach a general agreement.
 It is important that one gives full reference on the texture triangle used in soil databases.