Geophysical Research Abstracts, Vol. 7, 08897, 2005
SRef-ID: 1607-7962/gra/EGU05-A-08897

Organic matter evolution in anaerobic conditions after rum-distillery-washy amended in a “La Réunion” soil.

M. Domeizel*, P. Prudent*, S. Marlet**.

*Université de Provence, Laboratoire Chimie et Environnement, 3 Place Victor Hugo, 13331 Marseille Cedex 3, France.

domeizel@up.univ-mrs.fr, prudent@up.univ-mrs.fr

** CIRAD, Avenue Agropolis, 34398 Montpellier Cedex 5

serge.marlet@cirad.fr

Using wastes obtained from agrofood activities as soil amendment in allow to ameliorate soil structure. On “La Reunion” isle, rum-distillery-washy are used in this objective. However, rum-distillery-washy spreading onto soil can induce anaerobic area, then structural modifications of organic matter and transfer metal through soil and in deep zone.

In order to better know these processes, incubation experiments in batch are performed with soil sampled at “La Mare” (La Reunion) and rum-distillery-washy. Study is provided during 21 days.

Organic matter evolution after separation on XAD-8 and XAD-4 column is monitored by DOC (Dissolved Organic Carbon) analyse and UV spectrum plotted for each fraction (200 to 350 nm). DOC is chosen to follow quantitative evolution while UV spectroscopy for qualitative one.

Dissolved organic matters (DOM) contain 2 categories of compounds : hydrophobic and hydrophilic. Studies show that hydrophobic, hydrophilic and high hydrophilic represent 85-90 % of DOM. Using XAD-8 and 4 resins allows to obtain these 3 fractions.

First results show that “La Reunion” soil contain a low quantity of organic matter (DOC) and of aromatic molecules (UV). Fractionation of organic mat-

ter demonstrate that the most important fraction in soil and in rum distillery washy is the hydrophilic one. The fact to bring organic waste in soil increases consequently DOC (x 100).

The qualitative evolution of organic matter differs according to the presence or not of waste. The observation of UV spectrum demonstrates that a new family of compounds which absorb in wavelength 230 appears. The presence of these molecules are observed in different fraction according to the presence or not of organic waste :

- **in fraction retained on XAD-8 resin if washy is alone**
- **in fraction retained on XAD-4 resin with soil+washy mixture.**

The authors want to acknowledge M. R. Di Rocco for his active contribution to this work. This study was included in a project monitored by CIRAD.