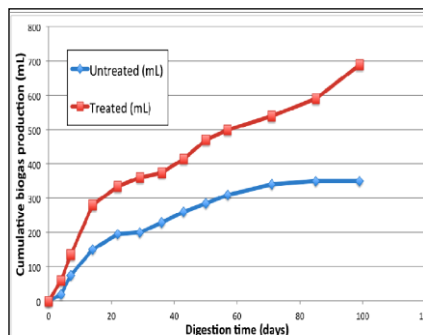


Biomasses : a green *chemi-land* project

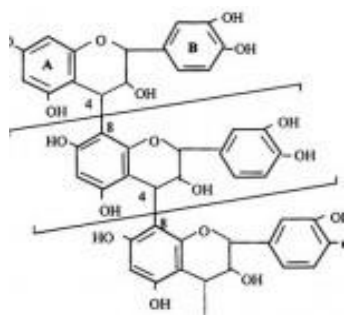
Erika Ferrari, Gianluca Malavasi, Lorenzo Tassi



Biomasses for Biogas production ... and many other further



Biomass Characterization



Extraction and separation of tannins, natural organic acids, saccharides, ...

CONTACTS

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RESEARCH TOPICS

The research activities in the field of “Green Chemistry” cover mainly:

- i) physico-chemical characterization of biomasses for the initial qualification, aimed at identifying the optimal path of development for transfer technological processes to reduce the production of wastewater and final by-products with low environmental impact;
- ii) implementation of treatment techniques, extraction and separation of products with more 'added value' of different types: ligneous-cellulosic materials, starches, tannins, bio-active pharmacological principles, and so far, starting from either agro-industrial and forestry active biomasses;
- iii) development of analytical protocols for the determination of the organic / inorganic substances present in biomasses and wastes after treatment with zeolites, digestive enzymes, ligneolitic-fungi and bacteria breakers;
- iv) development of instrumental automated methods (imaging, NIR and NMR) for the characterization of biomasses, valued by-products and final effluents; monitoring of processes, in particular for the production of biogas;
- v) development and implementation of innovative methods for killing and detoxification of pollutants from waste (MSW and industrial waste), to lessen the impact on the environment (soil and groundwater);
- vi) total biomasses valorization by energetic recover of henthalpic content via reductive pyrolysis craking and final carbon combustion;
- vii) development of new methods for the breakdown of CO₂ with adsorbing systems based on algal growth with recovery of the by-products of bio-pharmacological interest.

COLLABORATIONS

The group members are involved in several projects and collaborate with well known national and international groups:

- Dr. Ornella Francioso (Dept. of Agricultural Sciences, UniBO): Treatment of ligneous-cellulosic biomasses using ligneolitic - fungi;
- AQtan s.r.l. <http://www.aqtan.it/>
- Biotec sys s.r.l <http://www.biotecsys.it/>