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Mediterranean green organic wastes: Corsican methanogenic power's study

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The University of Corsica Pasquale Paoli contributes to research on the efficiency and integration of renewable energy, which include biomass waste recovery's studies. Two types of substrates have been selected to initiate researches about their methanogenic power: green wastes from clearing and; stillages, which are drying residues obtained after the aromatic plants hydrodistillation for the production of essential oils. The first study allowed characterization of the chemical composition and methanogenic power of the plants used: arbutus (*Arbutus unedo*), laurel (*Laurus nobilis*), Cistus from Montpellier (*Cistus monspeliensis*) and stillage of immortelle (*Helichrysum italicum*). The organic matter splitting has been carried out according to the Van Soest protocol, while the methanogenic potential was taken directly to the pilot reactor which has a capacity of 15 liters. The Cistus and immortelle spent grains have the higher methanogenic potential, 231±9 and 207±16 Nm^3 Biogas.tMV^{-1} respectively. Both substrates has an holocellulose ratio with a high level of lignine: 3.8 for the Cistus and 3.4 for the immortelle stillage. The two other plant species have the lowest methanogenic potential: 101±7 Nm^3 Biogas.tMV^{-1} for the arbutus and 118±4 Nm^3 Biogas.tMV^{-1} for the laurel, with respectively lowest ratios (1.67 and 2.43). The same ranking is established between the biogas amount produced and the holocellulose/lignine values. By ascending order: the arbutus, the laurel, the immortelle and the *Cistus*. The result seems confirmed the correlation between production and holocellulose/lignine ratio.

Biography

Nicolai Rémy is in the final year of PhD at the Corsican's University on the integration and optimization of methanation reactors. Its objective is to help implement biomass recovery techniques in Corsica. Part of his research time is dedicated to assisting regional and departmental agricultural chambers as scientific advisers.

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