

8th International Conference on

BIOFUELS, BIOENERGY & BIOECONOMY

December 04-05, 2017 | Sao Paulo, Brazil

A method and a system for converting large quantities of wastewater into water and fertilizer - The YSATÍ case, based on Patent INPI PI 0905596-7 A2

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The Patent granted in 2017: A method and a system for converting large quantities of wastewater into water and fertilizer. The present invention relates to a method and system for would make it possible to process huge amount of waste water. converting wastewater from sugar, bio-ethanol and biodiesel production into substantially purified water and a powder containing the waste. A single process line consisting of a system according to the invention is able to handle a quantity of wastewater of up to 20000 m³/day. Background for the invention The traditional production of bio-ethanol from sugar cane is based upon fermentation and distillation. The wastewater – the so-called vinasse – from this process is today being sprayed to the fields. However this way of depositing the vinasse is not environmentally acceptable and methods have been investigated to avoid the deposit of vinasse on the fields. Specifically in Brazil the amount of vinasse produced per year amount to around 450 billion liters/year. The dry matter of the vinasse is high in Potassium (K+) and is needed for adequate growth of the sugar cane. Today Brazil import Potassium for fertilization in the range USD 4 billions/year. By retrieving the Potassium from the Vinasse one can reduce the importation of Potassium and use existing source of Potassium as a dry fertilizer. Description of prior art The converting of wastewater into fertilizer is a normal process with evaporation and drying. The evaporation have been done utilizing either tubular or plate evaporation. For the drying step normally the use of a spray dryer or a spin flash drying is being used. The quality of the water (condensate) produce by the evaporation step is generally undefined as vinasse contains volatile solid components which components are at least partly stripped during the evaporation process and therefore ends up in the purified water (condensate) as impurities. For many years scale dispersants and sequestering agents has been used in different types of water treatment with the objective of minimizing scale formation i.e. avoiding salts crystallization on membranes or heat exchange surfaces but it has never been recognized that the use a sequestering agent with dewatering of vinasse.



Biography

Silvio Ricardo Taboas, is speaker of the YSATÍ Board. He is an executive of large global corporations in the segments of energy, food, cement, automotive, logistics, agribusiness and business consulting. Since 2006, he has been dedicated to start-ups and silent management turnaround through his own company, tabVlae, which developed the business of YSATÍ (www.ysati.com.br) and owns exclusive rights regarding the patent.

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