2022
February 18-19
Webinar

14th International Conference on

Biofuels and Bioenergy

Kalloum Slimane
KTO Karatay University, Konya, Turkey

Improvement of methane yield of dry palm (phoenix dactylifra) (phoenix dactylifra) of the H'mira variety by co-digestion with camel waste

The objective of this work is to evaluate the effect of co-digestion of date palm (phoenix dactylifera) dry palms (DP) from the H'mira cultivar with camel waste (CD) on methane yield. The anaerobic digestion was carried out in six digesters in triple operate at mesophilic temperatures 37°C for 26 days with an inoculum: substrate ratio of 2:1. The six digesters contained the following proportions of cosubstrates: (100% PS); (25%PS+75%DC); (50%PS+50%DC); (75%PS+25%DC) and (100%DC) plus a sixth digester which contains only inoculum as a blank. The obtained results showed a high biodegradability rate for the reactors containing the dry palms with the different proportions. A low biodegradability was recorded with the DC alone. Good Anaerobic Digestion process kinetics was recorded for all reactors 6 from the beginning of the digestion with a VFA/TAC ratio not exceeding 0.18. The good estimated methane yield of 140 ±1.5 ml CH4/g OM was obtained with the reactor containing 100% PS. The good proportion of cosubstrate was that of (50%PS+50%DC), it gives the best methane yield (105±1.5 ml CH4/g OM) compared to other cosubstrate proportions. The low methane yield (35.5 ±1.5 ml CH4/g) was obtained with the reactor containing 100%DC. These results confirm that co-digestion is beneficial for camelina waste but does not affect dry palms. It is important to suggest other techniques to improve the methane yield through this Saharan waste.

Keywords: Anaerobic digestion, co-digestion, Saharan biomass, H'mira cultivar, dry palms, date palm, camel waste.

Biography

Kalloum Slimane has completed his PhD at the age of 45 years from Mostaganem University and postdoctoral studies from Mostaganem University School of chemistry. He is the director of Laboratory of energy, environment and information system. He has published more than 15 papers in reputed journals and has been serving as an editorial board member of repute.

Received: December 15, 2022 | **Accepted:** December 25, 2022 | **Published:** February 19, 2022