



Renseignements détaillés

Integrated system for conversion of organic wastes using black soldier fly larvae

Détails de la recherche

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Département :	Inter-Faculty Programs	Province :	Ontario
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Chercheurs associés :	Tam, Edwin	Partenaires :	Essex Windsor Solid Waste Authority Gesing Consultants Inc.

Sommaire du projet

This integrated research project will assess the viability of using Black Soldier Fly larvae (BSFL) *Hermetia illucens* L. (Diptera: Stratiomyidae) to convert organic industrial, municipal and agricultural waste products into protein and fat that can be recycled into animal feed or feedstock for bio-fuel production. This innovative process contributes to environmental sustainability through a sustainable method to utilize agricultural and food processing waste. This process is efficient environmentally clean (no greenhouse gas production), fast (days) and economical. It dramatically reduces the proportion of waste entering landfills, reducing pollution from local nutrient overload and results in faster inactivation of harmful bacteria. The residual waste left by BSFL can be fed to earthworms for additional conversion or composted. BSF is a tropical and warm temperate region species present in summer in southern Ontario. BSF consumes a range of organic wastes and has been used in USA in manure management systems to reduce manure accumulations, odor, nitrogen content (and other nutrients, lowering pollution and local nutrient overload) and accelerating inactivation of toxic bacteria (such as *E. coli* and *Salmonella*). Specifically, we propose to measure the range of organics that can be fed to BSFL and the efficiency with which each type of waste is converted to protein and fat, the climatic conditions under which BSFL will remain active throughout the year, the engineering processes required to render organic wastes into suitable feed for a BSFL-based process, and to develop and test a prototype facility for waste conversion using BSFL.