

# Biosolids Larvae Project Update

In an information update to Colchester's Council Committee on November 20th, Michelle Newell, Director of Public Works provided an update to council on the biosolids Larvae Project handling via the Oberland Process.

Since the information is rather technical, we decided to reproduce the information exactly as presented to council as presented below:

- The County currently produces approximately 300 metric tonnes of biosolids per month. This is a dewatered sludge product which originates from our five sewage treatment plants. The product is currently shipped to a private company for composting and subsequent beneficial use.
- The proposed operating budget for fiscal 2020/21 includes \$345,000 for disposal of biosolids.
- In February of 2020, Council requested that staff seek funding for a pilot project to explore the use of Black Soldier Fly Larvae

(BSFL) for the stabilization of Biosolids. The Oberland Agriscience facility in Halifax is currently exploring the growth of BSFL using organic waste streams and wishes to partner with the County on the pilot project.

- The pilot project will explore the feasibility of using our biosolids as a food source for the BSFL. This approach could reduce disposal costs while also generating a high protein food source.
- In September of 2020, staff advised Council that no funding source had yet been secured for the project. Council subsequently approved a budget of \$40,000 which would fully fund the project and asked that the pilot project proceed. Staff is continuing to explore funding options.
- Staff will be partnering with Oberland Agriscience, Acadia University and Nova Scotia Environment for this project.
- A defined workplan for the pilot project has

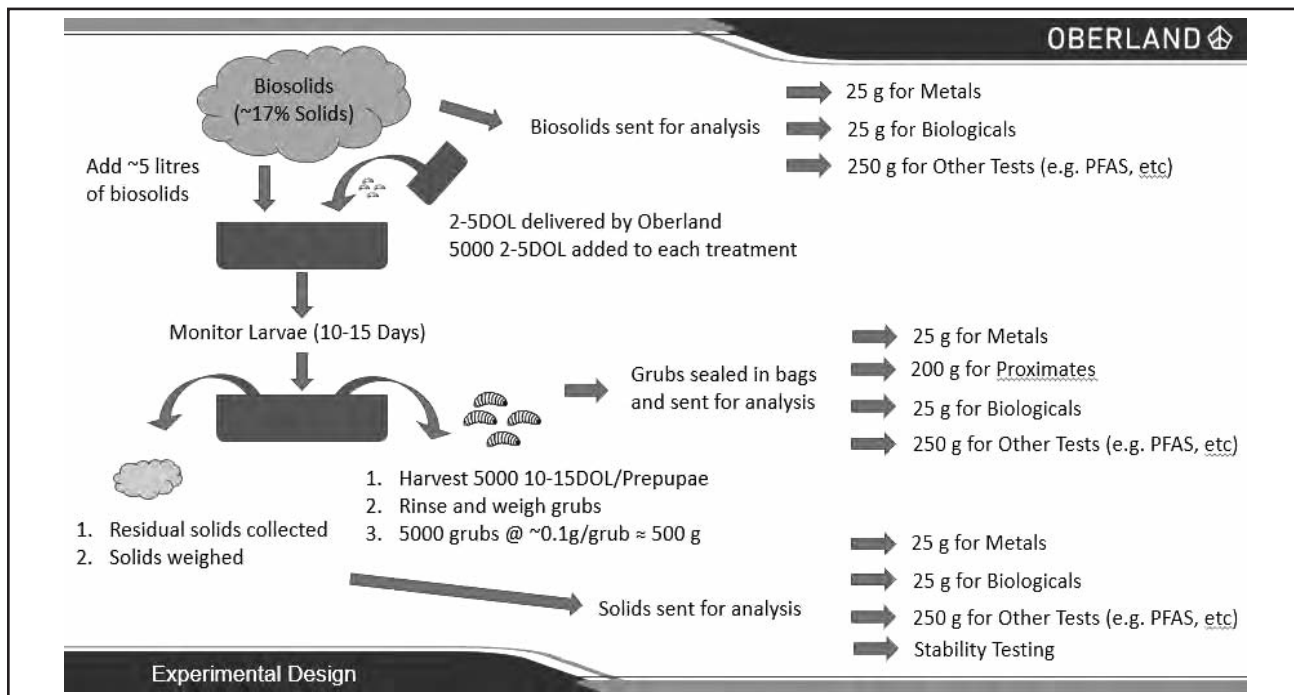
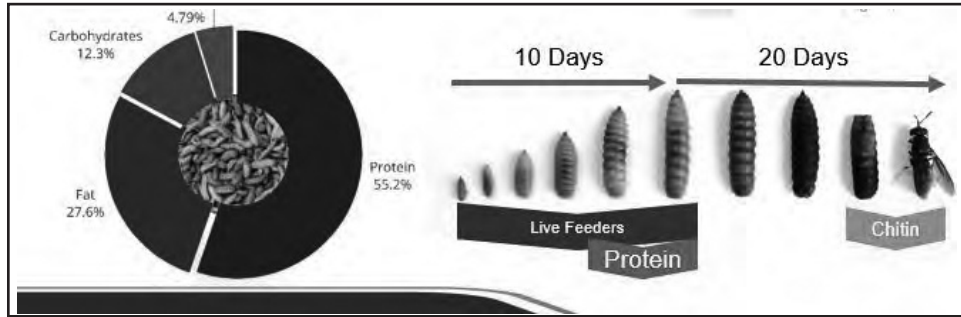
been prepared, as follows: The pilot project will be set up indoors at the Central Colchester Wastewater Treatment Facility (CCWWTF) in Lower Truro. A number of combinations of biosolids and larvae will be set up in plastic bins on site and monitored over the course of 10 to 15 days. Lab analysis will be conducted on the raw biosolids, the final larvae and the remnant biosolids and worm castings. The schematic below illustrates the plan: The project will answer the following questions: Will the larvae be able to grow in the biosolids? Will the larvae retain any of the chemicals found in our biosolids? Will the remaining biosolid product be stable and usable?

- The cost of the pilot mostly consists of lab expenses related to testing of the raw biosolids, the final larvae and the remnant biosolids and castings.
- We have discussed the scope of the project with Oberland Agriscience, as well as Nova Scotia Environment, is also interested in the outcome of this pilot project, and Acadia University is also providing input and support for the work.
- The project would be set up at the County's Lower Truro sewage plant, and would involve growing fly larvae in our dewatered biosolids for a number of weeks, then testing the chemical and physical qualities of the larvae and the biosolids at the end of the growth period. This will result in important information on the larvae's ability to breakdown biosolids. It will also tell us how the chemical nature of the biosolids affects the larvae, if at all.
- In July and August of 2020, Acadia University completed some initial tests with our

biosolids. They looked at the growth of the larvae in pure biosolids, and a mixture of biosolids and brewery mash/chick feed. They found that the larvae grew best in the mixed product, and they noted that our dewatering chemicals may be hurting the larvae growth.

• Staff will set up additional trials at the CCWWTF in the coming months to further assess the larvae growth and the chemical make-up of the resulting products-up of the resulting products.

*Michelle Newell who wrote the update is Director of Public Works, Municipality of County of Colchester.*



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