Green Digital Demonstration Program

Program Start: May 19th

Program End: Jun 1st, 2016

Objectives

- To test and document the results of Osimfy® Industrial and Osimfy® DRY
- To reduce the flies and odours at Carnegie Community Centre

Parties Involved

Bokoeco Partners Inc.

Vancouver Economic Commission

Carnegie Community Centre

Presented By

Will Jung | Founder | Bokoeco Partners Inc.

EXECUTIVE SUMMARY

On May 19th 2016, Bokoeco started the Green Digital Demonstration Program. It was a two-week project aimed to document the results of using Osimfy® Industrial and Osimfy DRY to minimize the amount the flies and reduce the odours at Carnegie Community Centre. The areas of concern were the cafeteria and the refuse area in the basement.

The first week of the project was to establish a baseline. Each day from May 19th – May 25th, 2016 Bokoeco used fly strips to help document the number of flies in the areas of concern. Fly strips were changed each day to ensure an accurate daily total.

The second phase was train the Building Service Workers (BSW) on the proper use of Osimfy® Industrial and Osimfy® DRY and to document the results.

Objective #1: Controlling odours from organic waste bins

Objective #2: Repel and reduces the number of flies from the organic waste collection bins

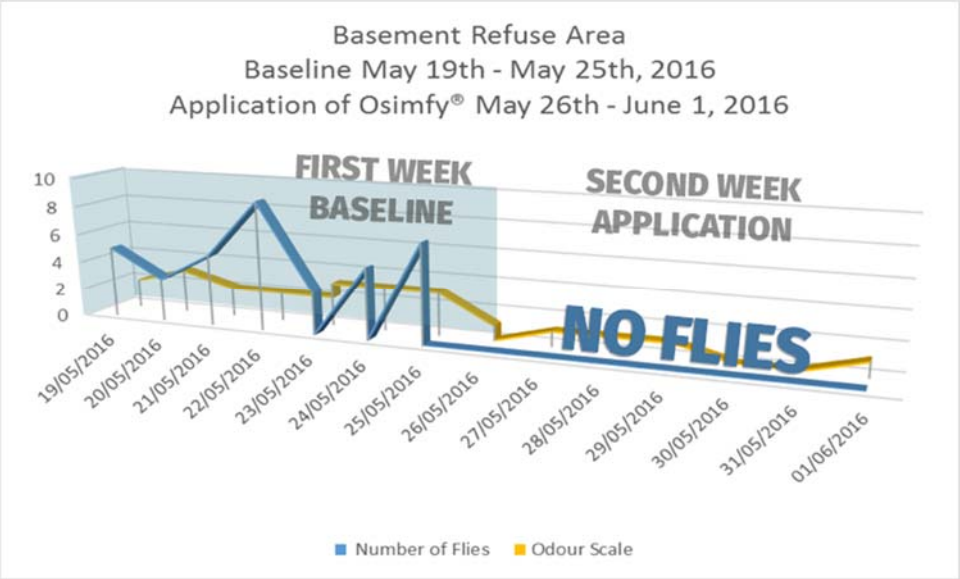

Figure 1.

Starting May 26th, 2016 (Application Phase of Osimfy® Industrial & Osimfy DRY) the graph will show that there are no files in proximity of the organic Bins and Odours are also virtually nullified.

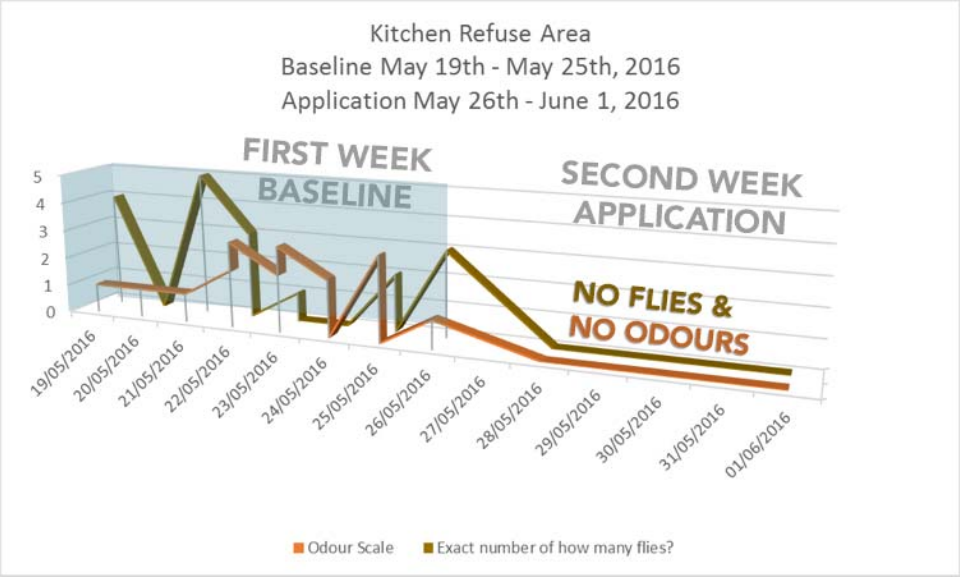

Figure 2.

Starting May 26th, 2016 (Application Phase of Osimfy® Industrial & Osimfy DRY) the graph will show the starting point where the number of files are decreasing. **Odours are also beginning to be nullified. By the end of the second week there were no files and virtually no odours.**

THE OBJECTIVE

To use ***Osimfy®*** **DRY** and **Industrial** to control odours and reduce the number of flies in the areas of concern which are main cafeteria and basement refuse areas.

Objective #1: Controlling odours from organic waste bins

Objective #2: Repel and reduces the number of flies from the organic waste collection bins

When the ***Osimfy®*** products are used in the green organic waste bins, the number of flies will be reduced around the bins and the odours will be controlled. The ***Osimfy®*** products will create an environment that flies does not like which repels them from the bins. There should be little to no flies in the kitchen refuse area and there should be barely to no odours with the continual use of ***Osimfy®*** **DRY** and **Industrial**. The same should occur in the basement refuse area; whereas there should be very little flies to no flies on the front fly strip and more flies on the back fly strip as the flies are repelled from the green bins.

PRODUCTS: OSIMFY® INDUSTRIAL & DRY

- Osimfy® Industrial will be sprayed in and on the waste bins to reduce the number of flies and amount odours.
- Bokoeco will recommend the kitchen staff empty the smaller organic waste containers into the large organic bins in the kitchen refuse area. Sprinkled in ½ cup with Osimfy® DRY at the bottom of the bin, then with every 6-8 inches of organics that is added to the bin Osimfy® DRY must be applied again.

BASELINE / CONTROL PROCEDURES

The control stage will start May 19th, 2016 and end May 25th, 2016. Each day at 9pm Bokoeco will document the number of flies that are collected by the fly strip. Two fly strips will be placed in the basement. The first (Front Fly Strip) is in close proximity to the organic waste bin, the second (Back Fly Strip) is placed 15 meters away from the organic waste bin. Additionally, a fly strip will also be place the kitchen refuse area.

- Fly strips will be switched out daily to ensure accurate count.
- Odours intensity will also be observed by using a scale of 0 to 5 as seen in Figure A.
- Fly strips will be used to help document and establish the baseline.

BASELINE / CONTROL PROCEDURES (Continued)

Scale	Odour intensity	Perceptibility range
0	No odour	Not perceptible to anyone
1	Barely perceptible odour	Perceptible to less than 50% of those examined
2	Very weak (threshold) odour	Perceptible to 50% of those examined
3	Weak odour	Perceptible to more than 50% of those examined and noxious to the minority of them
4	Strong odour	Perceptible to all and noxious to the majority
5	Very strong odour	Perceptible to all and noxious to all

Figure A: Odour Intensity Scale

AREAS OF CONCERN

BASEMENT REFUSE AREA

- The first fly strip is place near the organic green bins at the entrance of the hallway to measure the number of flies attracted to organic waste in the green organic waste bins. The second fly strip is placed further into the hallway near the exit doors to measure the number of flies furthest away from the green organic waste bins.

KITCHEN REFUSE AREA

- Another fly strip is place right above the organic green bin by the exit door to measure the number of flies attracted to odours in the green organic waste bin.

OBSERVATIONS

Baseline/Control Data Collection: Starting May 19, 2016 to May 25, 2016

On the first day of data collection was very warm and as a result there was some odour; even with very weak odours from the organic bins in the basement where the organic bins are stored, it was still enough to attract a high number of flies. As the week progressed the daily temperature was lowered with rain which kept the odour levels down but there still had some flies lingered in the area of the bins.

As the Victoria Day weekend approached the daily temperature increased as well as the temperature in the basement creeped up as well which created more odours from other recycling bins along with the organic waste bins. The number of flies increased correlating to the amount of organic material in the green organic waste bins and dirty tins in the recycling bins until the waste hauler came by to empty the organics and recycling bins on May 23rd.

As the bins are filled again the odour level starts to go up again along with the flies being attracted organic bins; shown on the front fly strip on Figure C.

OBSERVATIONS (Continued)

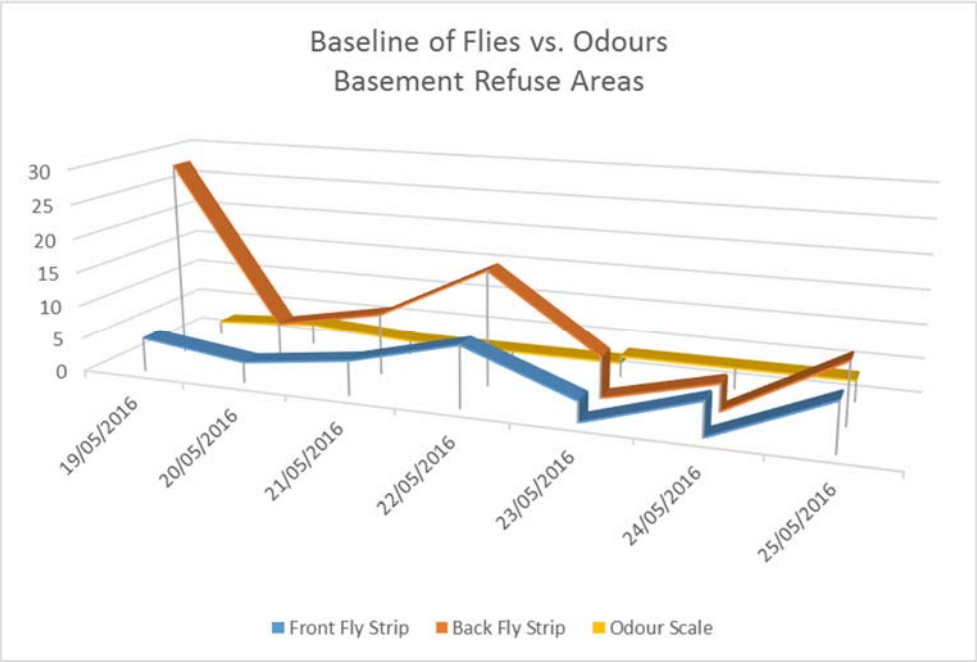

Figure C

The kitchen refuse area was well ventilated in the effort to keep flies and odours levels down but odours are still detected and there are still flies as shown in Figure D.

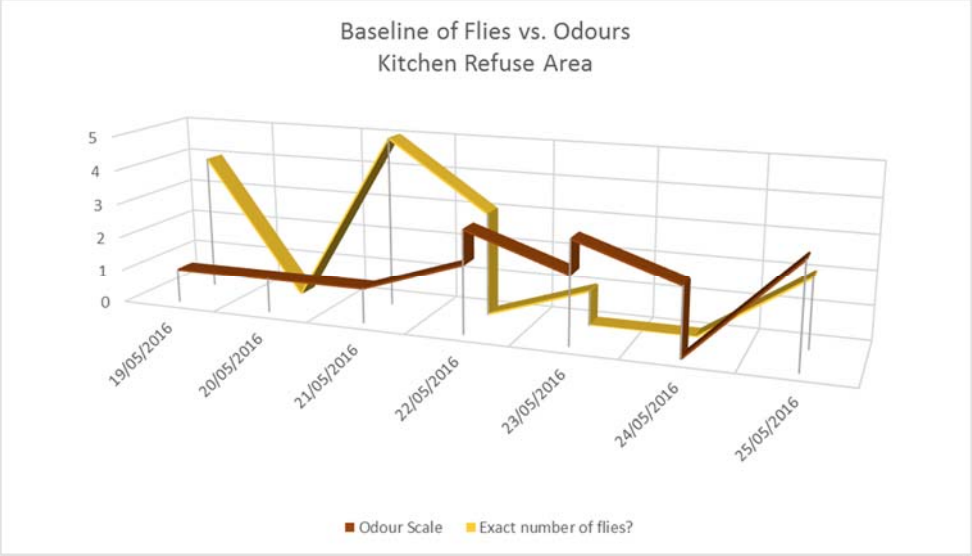

Figure D

The spike in fly count and odour level was due to the organic bins stored in the kitchen refuse area over the Victoria Day weekend.

Each time the organic waste gets hauled away, the Building Service Workers (BSWs) would wash the empty bins and then insert a clean bin liner. This procedure has close to no effect on reducing the odours.

OSIMFY® APPLICATION PROCEDURES

The application stage started May 26th, 2016 and ended June 1st, 2016. Each day at 9pm Bokoeco will document the number of flies that are collected by the fly strips. Fly strips will be placed in the same places as in the baseline/control stage and switched out on a daily basis. Documenting odours will be the same as the baseline/control stage.

AREAS OF CONCERN

BASEMENT REFUSE AREA

- ***Osimfy®* Industrial** will be sprayed in a fine mist onto the exterior and interior of the organic waste bins after each time the organic bin is emptied and washed before the bin liners are inserted.

KITCHEN REFUSE AREA

- Two ¼ cup scoops of ***Osimfy®* DRY** is sprinkled into the organic waste bin every 8 to 10 inches (20 to 25cm) or 3 orange buckets from the kitchen is emptied into bin. The ***Osimfy®* DRY** material is layered with the organic waste.

APPLICATION STAGE: STARTING MAY 26th, 2016 - JUNE 1st, 2016

On May 25th the Bokoeco trained the Building Service Workers (BSWs) on the application of ***Osimfy®* Industrial** and kitchen supervisor and dishwasher on the application of ***Osimfy®* DRY**.

Within a day of application of ***Osimfy®* Industrial** the odours were reduced on the organic waste bins. There were no flies around the bins as all flies were repelled to the back fly strip as shown on Figure E. As each day passed with each application of ***Osimfy®* Industrial** on the organic waste bins the odours became less to no smells and all flies were repelled from the bins to the back fly strip, 15m away, in the Basement refuse area.

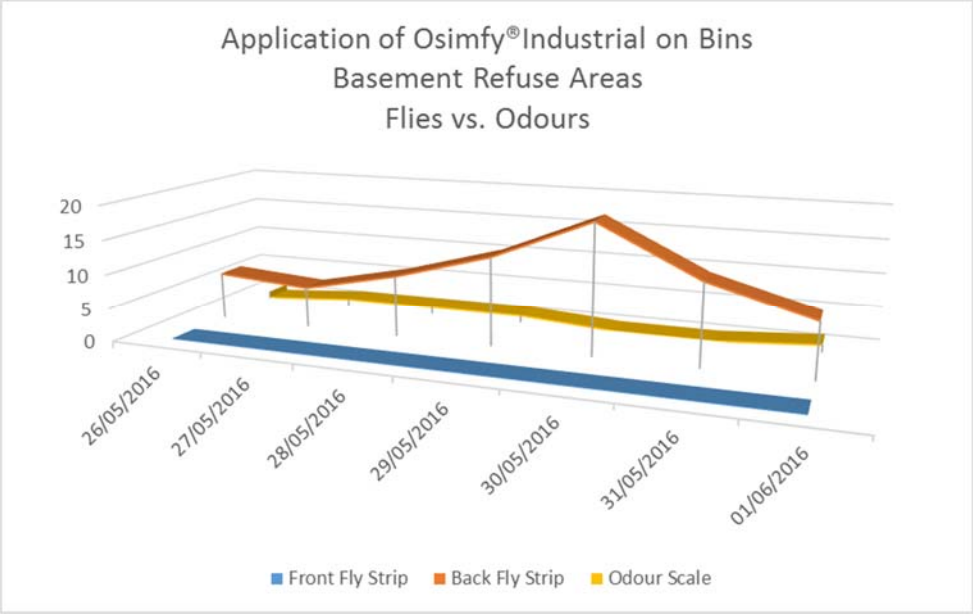

Figure E

APPLICATION STAGE: STARTING MAY 26th, 2016 - JUNE 1st, 2016

On the first day of the application stage the afternoon kitchen staff used ***Osimfy® Dry*** to control the flies and odours coming from the organic waste bin. As shown in Figure F with the introduction of ***Osimfy®* Dry** odours begin to lessen and by the end of the application stage there were no detectable odours.

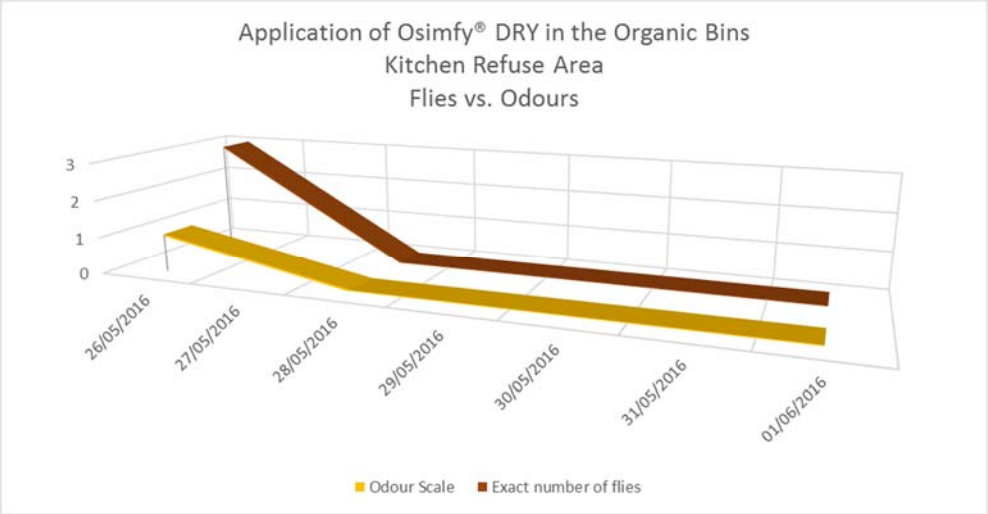

Figure F

CONCLUSION

As shown in the Figure G you can see that there were a varying number of flies during the baseline/control stage. If you were to follow the Blue Line (Front Fly Strip) you will see the results of prolonged use of Osimfy® Industrial.

The flies were being repelled from the area because of Osimfy® Industrial to an area meters away that was not treated with Osimfy® Industrial. As Figure G will show that Orange Line (Back Fly Strip) has an increased number of flies and in contrast the Blue Line (Front Fly Strip) shows that there were no flies during the same period.

The Yellow Line (Odour Scale), shows odours becoming nearly undetectable because of the use of Osimfy® Industrial. This is during by the second week or Application Stage of Osimfy® Industrial.

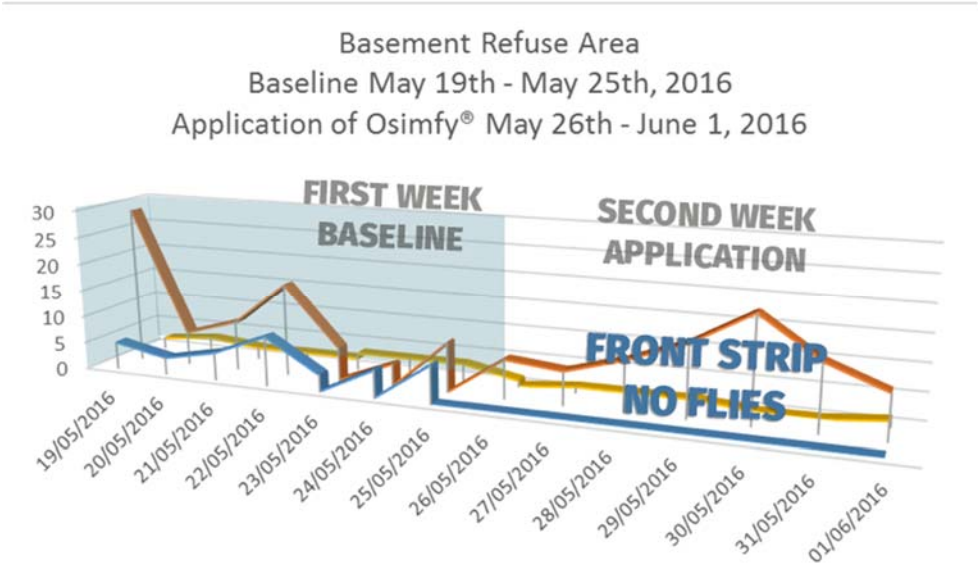

Figure G

CONCLUSION (continued)

In the Kitchen Refuse Area Figure H will show on May 19th – May 25th the number of flies and odour levels during the control stage of the project. Once Osimfy® DRY was applied there were no flies and no detectable odours.

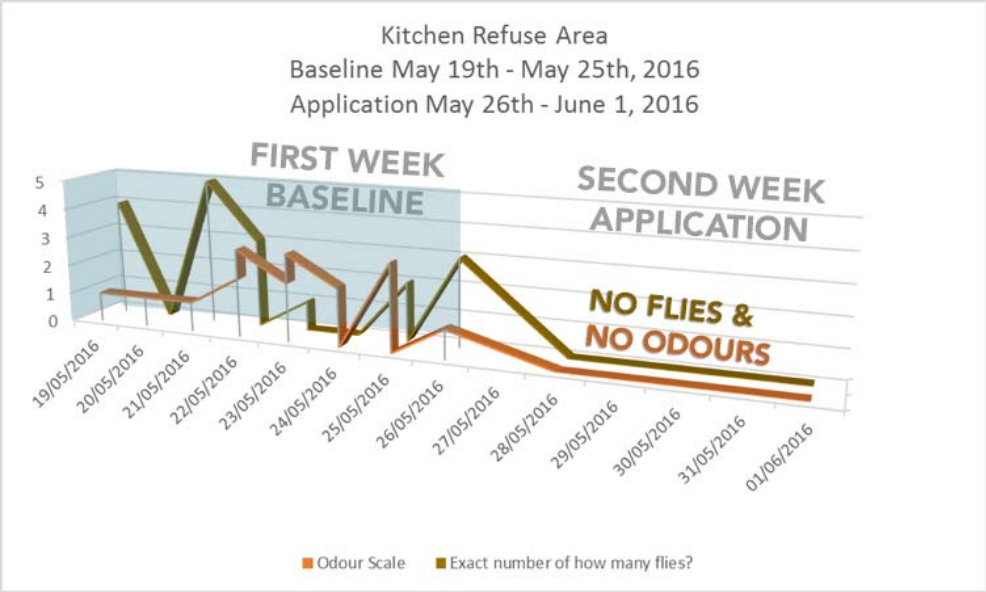

Figure H

In conclusion, based on the documented results which are verified by the testimony of the Carnegie Community Centre's staff, this project to use Bokoeco's ***Osimfy® Industrial*** and ***Osimfy® Dry*** reduce the flies and odours was a success.

Osimfy® family of products can be scaled to meet any size of business.

We at Bokoeco thank the Vancouver Economical Commission for their role in this project and all of Carnegie Community Centre's staff for their time and efforts.