**Microbial Methane Oxidation at Cover Soil Layer of Waste Landfill**

**Tomonori Ishigaki1\*, Masato Yamada1, Noppharit Sutthasil 2**

1: National Institute for Environmental Studies, 16-2 Onogawa, Tsukuba, Ibaraki 305-8506, Japan

2: Kasetsart University, 50 Thanon Ngam Wong Wan, Lat Yao, Chatuchak, Bangkok 10900 Thailand

\*corresponding author: tomoishi@nies.go.jp

**Keywords:** methane oxidizing bacteria, greenhouse gas, landfill cover soil *(3-5 keywords)*

...............................................................................................................................................................................

*Instructions to authors:*

*Authors should prepare this Abstract with 2 pages by following this format and the “Guidelines for abstract preparation and submission”. You can include Figures and Tables in your abstract.*

*All submissions of Abstract must be made electronically in a PDF file format through the online abstract submission system. No revisions can be made after the submission deadline.*

*The organizing committee reserves the right to withdraw submissions that are in violation of our policies and guidelines, such as those that have been previously published or presented, have been deemed scientifically unsound, are intended to be a commercial advertisement, or have been found to include inaccurate data, etc.*

...............................................................................................................................................................................

**INTRODUCTION**

It has been well recognized that a waste landfill is major emission source (IPCC, 2000)....... .......................

**MATERIALS AND METHODS**

**Subjected landfill site**

A waste landfill site where municipal solid waste had been disposed of for 25 years was selected for investigation. The details of the landfill was shown in Table 1. .........................................................................

**Table 1 Details of landfill subjected in this study**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Waste type | duration | Capacity | Others |
| Landfill AM | MSW | 1980-1995 | 750,000m3 | Mountain |
| Landfill AN | MSW | 1988-2000 | 900,000m3 | Plain |
| ---------- |  |  |  |  |

**Microbial DNA extraction**

Fifty grams of soil sample was suspended in 450 ml of distilled water for 30 minutes. Supernatant was applied to gene extraction kit ..............................................................................................................................

*!!Do not put page number in the abstract by yourself!!*

**RESULTS AND DISCUSSION**

**Distribution of methane emission and oxidation in the landfill surface**

Figure 1 shows the relationship between the methane emission from the surface of landfills and the methane oxidation ………………………………………………………………………………………………

**Figure 1 Relationship of methane emission and oxidation**



**Population of methane-oxidizing bacteria in the landfill cover soil**

Population of methane-oxidizing bacteria in the landfill surface is shown in Table 2. Relationship between the population and methane emission was also shown in ..................................................................................

..............................................................................................................................................................................

**CONCLUSIONS**

This study aimed to propose a practical methodology for estimating the methane oxidation behavior of waste landfills. ................................. In this sense, we should continue to establish area-, region-, or at least country-specific activity and kinetic parameters on methane oxidation in landfills beyond the case study.

**ACKNOWLEDGEMENT**

This research was supported by Global Environment Research Fund (B-071) by MOE, Japan

**REFERENCES**

Intergovernmental Panel on Climate Change, Good practice guidance and uncertainty management in National greenhouse gas inventories, 2000.

Ishigaki, T., Yamada, M. et al., Estimation of methane emission from whole waste landfill site using correlation between flux and ground temperature, Environmental Geology, 48, 7, 845-853, 2005.

United Nations Framework Convention on Climate Change, Kyoto Protocol to the United Nations Framework Convention on Climate Change, FCCC/CP/1997/L.7/Add.1, 1997.

*References should be included in the text using Authors’ surnames followed by the year of publication (Pivato and Ferguson, 2008). If there are more than two authors, the surname of the first two authors could be mentioned, followed by “et al” (ex: Cossu R., Raga R. et al., 2008). Please use Normal style (not Italic).*