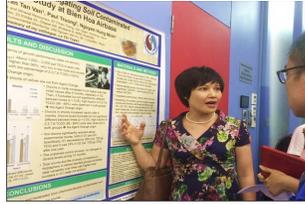




BỘ TÀI NGUYÊN VÀ MÔI TRƯỜNG

MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT OF THE SOCIALIST REPUBLIC OF VIETNAM



Vetiver grass has the potential to reduce dioxin contamination (28/05/2018)

Dioxin contamination from herbicides during the Vietnam War has been going on for many years and people are finding many ways to handle such as physical, chemical and biological methods... A group of scientists at the Vietnam Institute of Geosciences and Mineral Resources has initially noted that vetiver grass has the ability to stop spreading dioxin to surrounding land, thus reducing dioxin contamination in the land affected by the consequences of the war.

* Vetiver Grass can solve soil contamination

Vietnam is one of the areas most severely affected by dioxin contamination due to the widespread use of Agent Orange as an herbicide during the war years (1961-1971). The most polluted areas in Vietnam are at airbase sites where large amounts of Agent Orange were stored or processed. Today, these areas are still posing huge risks to the environment and human health.

According to Dr. Ngo Thi Thuy Huong, Deputy Director of Vietnam Center on Karst and GeoHeritage (under the Vietnam Institute of Geosciences and Mineral Resources), no effective phytoremediation technology with low cost has been researched and developed recently in order to fix, reduce and restore large areas of low-to-medium dioxin contaminated land.

In 2014, the research team of Dr. Ngo Thi Thuy Huong began to study the possibility of mitigating dioxin from vetiver grass. This is a MONRE-level project funded by the Government.

The vetiver grass which is considered "miracle grass" by the scientific community can adapt to the soil with high acidity, salinity and alum. The grass has a large root system but the roots are very small and smooth (average diameter is only about 0.5-1.0mm) which is very favorable for the growth of bacteria and fungi; it is necessary for absorbing the decomposition of pollutants. Vetiver grass can be used for many purposes such as anti-erosion of traffic and construction works; disaster mitigation, infrastructure protection... especially Vetiver grass is used in soil treatment, waste water treatment and environmental protection.

The project has achieved good and promising results when initially it was possible to demonstrate that vetiver grass has the ability to stop spreading dioxin to surrounding land, thus reducing dioxin contamination in the land affected by the consequences of the war.

* Understand the mechanism of vetiver grass for dioxin treatment

After completing the research in Vietnam, Dr. Huong submitted her topic to the Partnerships for Enhanced Engagement in Research (PEER) Program of United States. In 2017, the United States Agency for International Development (USAID) announced that the project had received a grant of \$300,000.

With this funding, the team would carry out further research on dioxin mitigation of vetiver grass together with conducting experiments to identify and clarify the issues that had existed in previous studies on contaminant fixation and treatment of plants. At the same time, fieldwork would be expanded to help re-evaluate the results of research in the laboratory.

According to Dr. Huong, the treatment technology of Vetiver grass will significantly reduce the cost of dioxin remnants after the war; it can be applied in many areas of the airports as well as areas of low-to-medium dioxin contaminated land in localities. At the same time, this approach can be easily applied on a broad scale and commercialized, accessible and applicable to disadvantaged groups, especially vulnerable individuals with low income.

"By commercializing the treatment technology of Vetiver grass, the project can bring more jobs to disadvantaged groups" said Dr. Huong.

This project will benefit about 135,000 people living around the airport areas, and especially for staff working at the 935th Fighter Regiment at Bien Hoa Airport by minimizing the potential health risk due to dioxin exposure.

Besides, the results of this project will contribute significantly to the development of phytoremediation technologies.

In addition to dealing with dioxin contamination, the successful project will add a dioxin-preventive strategy with a friendly environmental technology; the results and recommendations of the project also help policymakers and researchers on environmental protection and management in decision making and future research.

Practical measures will simultaneously help local, regional and national policymakers, as well as non-governmental organizations, develop short-term mitigation solutions, develop and evaluate long-term treatment activities, and finally conduct effective measures.

* United States supports research work

Dr. Ngo Thi Thuy Huong said that U.S. partners were responsible for promoting professional research in addition to financial aid.

In order to be able to implement and complete this research project, the U.S. Geological Survey will collaborate and assist the research team in designing and arranging experiments from laboratory experiments to fieldworks.

In addition, the U.S. Government's support partners are also involved in the implementation and evaluation of laboratory and field experiments; providing tools and analytical results for monitoring the dioxin absorption of plants by the Solid Phase Micro Extraction (SPME) method.

The partners also provide a laboratory for testing dioxin samples and assist in the compilation of materials for human resource training and workshops

Ngan Giang



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