

VETIVERIM

A Quarterly Newsletter of the Pacific Rim Vetiver Network

Number 73

ISSN 0859 – 8878

July 2015

Editor: Narong Chomchalow
Asst.Editor: Samran Sombatpanit
Advisors: Sumet Tantivejkul
Manoon Mookpradit
Jirapan Davivongs
John Greenfield

Country Representatives:

Australia Paul N.V. Truong
Brunei Nur Judy Abdullah
Cambodia Hong Tuon Van
China Liyu Xu
Cook Islands William Wigmore
Fiji Jai Gawander
Guam Mohammad Golabi
Indonesia David Booth
Japan Tsutomu Fujihara
Lao PDR Boonkong Sengthavon
Malaysia P.K. Yoon
New Caledoni Georges Donskoff
New Zealand Don Miller
Papua New Guinea Rob Shelton
Philippines Edwin A. Balbarino
Samoa Walter Vermullen
Taiwan Yue-Wen Wang
Thailand Weerachai Nanakorn
Tonga Siosuia Halavatau
Vanuatu Henry Kathecau
Vietnam Tran Tan Van

Publisher:

Office of the Royal Development
Projects Board (ORDPB)
2012 Arun Amarin 36
Bang Yi Khan, Bang Phlat
Bangkok 10700, Thailand
Tel.: (66-2) 447 8500
Fax: (66-2) 447 8543
E-mails: vetiver@rdpb.go.th;
Foreign_rdpb@yahoo.com
Homepage: <http://prvn.rdpb.go.th>
Editor's E-mail: narongchc@au.edu

What did we achieve at ICV-6?

The Sixth International Conference on Vetiver (ICV-6) was held from 5-12 March 2015 at the University of Technology in Danang, Vietnam. The theme of ICV-6 is "Vetiver System: Empowering Sustainable Development". The objectives are to review the development on the prospects and potential of vetiver in addressing issues related to the theme. In addition, the conference also aims to provide the latest development on vetiver system applications to underscore its promises and potential in the service of global community while presenting an overview of vetiver ecosystem services as well as continuing the expansion of the networks of the vetiver system users around the world.

At ICV-6, a number of vetiver scientists presented their findings relating to the role of vetiver on sustainable development. In addition, ICV-6 featured a wide range of other VS applications. This has provided an excellent opportunity for scientists, growers, entrepreneurs, industrialists and environmentalists to interact and share their experience on the prospects, potential, and opportunities of VS applications. It is heartening to learn that many of the young participants have gone ahead in finding new uses and applications of the VS, as well as finding new places for which the old applications are the right solution.

As the host of ICV-6, Vietnam has shown the rest of the world her achievements in vetiver R&D and also offered an opportunity for the participants to see vetiver in action at a lot of places observed during the study tour where the participants have an opportunity to observe the application of vetiver at Laguna Lang Co Resort in Hue, Son Tra Peninsular in Danang and along the highway to Ho Chi Minh City. Foreign participants were trilled in having a chance to visit the world heritage sites in the ancient cities of Hoi An and Hwe during this study tour.

In addition to the work highlighted above, the host institute provided most generous hospitality for international as well as domestic participants on a par with all previous ICVs. We all returned home with lots of knowledge and experience in vetiver and fond memories of Vietnam.

Summary Report on the Sixth International Conference on Vetiver (ICV-6) in Vietnam

Between 5-12 May 2015, the Vietnam Vetiver Network (VNVN), with support of the Chaipattana Foundation and the Office of the Royal Development Projects Board (ORDPB) from Thailand, and the Vetiver Network International (TVNI), organized the 6th International Conference on Vetiver (ICV-6) in Da Nang, Vietnam, under the theme of “Vetiver System: Empowering Sustainable Development”. The objectives are to review the development on the prospects and potential of vetiver in addressing issues related to the theme. In addition, the conference aims to provide the latest development on vetiver system applications to underscore its promises and potential in the service of global community while presenting an overview of vetiver ecosystem services as well as continuing the expansion of the networks of the vetiver system users around the world.

To fulfill the royal initiatives of His Majesty the King of Thailand on the development and promotion on the utilization of vetiver, Her Royal Highness Princess Maha Chakri Sirindhorn granted US\$ 15,000 through the Chaipattana Foundation as a contribution to the organization of the conference as well as US\$ 15,000 for the King of Thailand Vetiver Awards and presided over the conference as the Patron of TVNI. The ORDPB as the agency responsible for vetiver activities in Thailand actively participated the event by bringing 90 government officials, practitioners and academics to attend the conference and present papers. In addition, various patterns of handicrafts made from vetiver from the Chaipattana Foundation under the brand “Pat Pat” and the PTT Public Company Limited from Thailand were displayed to make the public know the economic value of vetiver that helps to earn more income in addition to the conservation of soil and water. At the event, a group of Thai experts in handicraft making arranged a training course on handicraft making from vetiver leaves for the interested which was found to attract a lot of participants.

At the opening ceremony, Her Royal Highness the Princess graciously presented the awards to 16 recipients of the King of Thailand Vetiver Awards for the outstanding papers on research, dissemination, and people participation as well as recipients of TVNI awards. Other activities included the plenary sessions, the concurrent sessions, the poster sessions, exhibitions and the training course on vetiver handicraft making by the trainers from PTT Co., Ltd. The concurrent sessions comprised six sessions: (1) Bioengineering and Disaster Mitigation; (2) Environmental Protection; (3) Soil and Water Conservation in Agricultural Land; (4) Socio-Economic Impact on Rural Community; (5) Research and Innovation; and (6) Other Applications. The conference was successfully organized and attended by approximately 206 participants from 15 countries as well as Vietnamese academics and experts in vetiver system application. On this occasion, the participants have an opportunity to have a field trip visit to observe the application of vetiver at Laguna Lang Co Resort in Hue, Son Tra Peninsular in Danang and along the highway to Ho Chi Minh City.

The participation in this conference enabled the international participants to learn more about the development and promotion of vetiver grass in Thailand which have been implemented according to the royal initiatives of His Majesty the King who has continuously granted initiatives on vetiver for nearly 20 years.

So far, it can be said that the implementations in Thailand have been recognized at the international level. Moreover, the academics who attended the conference had a great opportunity to exchange their experiences with the international user of vetiver and learned the successful implementations in Thailand which can be applied elsewhere.

(see photographs of the event on pages 3-10)

Awarding Ceremony and Study Visit for the King of Thailand Vetiver Award Winner

On 19 June 2015, the Office of the Royal Development Projects Board (ORDPB) organized the Awarding Ceremony of the King of Thailand Vetiver Award in the category of Dissemination

Pictorial Report of the ICV-6 in Danang, Vietnam (5 – 12 May 2015)

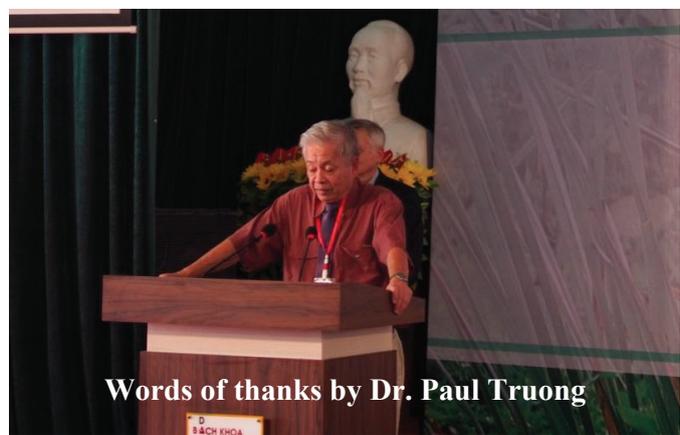
Opening Ceremony on 6 May 2015



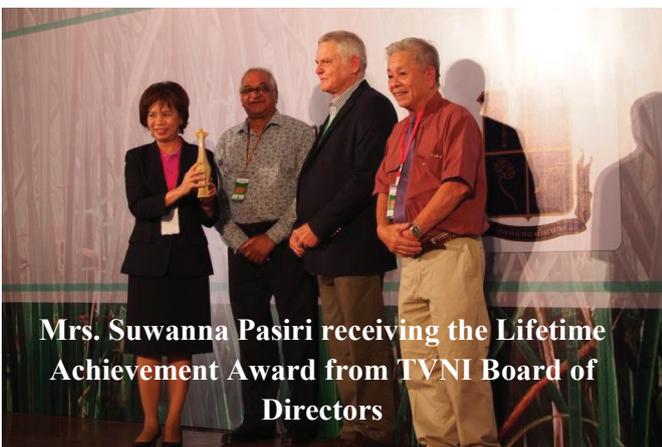
HRH Princess Maha Chakri Sirindhorn giving an inaugural address



Welcome Speech by Mr. Dick Grimshaw, the founder of TVNI



Words of thanks by Dr. Paul Truong



Mrs. Suwanna Pasiri receiving the Lifetime Achievement Award from TVNI Board of Directors



"Tribute to HRH Princess Maha Chakri Sirindhorn" by Dr. Narong Chomchalow



Presentation of the King of Thailand Vetiver Awards



HRH and the winners of the King of Thailand Vetiver Awards



Dr. Narong, 2011 Global Vetiver Champion



Dr. Paul, 2015 Global Vetiver Champion



HRH and the winners of the TVNI Awards



HRH and the TVNI Board Members



Exhibition



Plenary Session



Dr. Ampol Senanarong, Privy Councilor giving lecture on “Structure and Operation of Thailand Vetiver Network”



Presentations by the winners of the King of Thailand Vetiver Awards



Concurrent Sessions



Vetiver Handicraft Training





ICV-6 Participants from Thailand

Site 1: Son Tra Peninsular in Danang

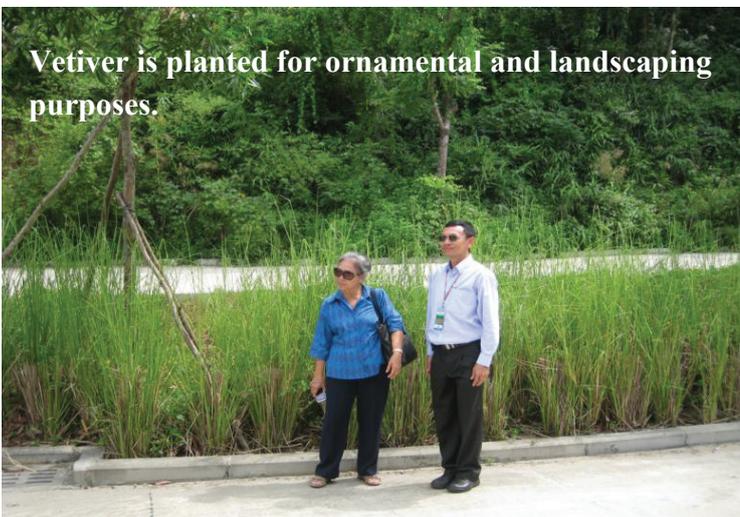


This site showed the extraordinary survival of vetiver under extreme conditions. 8 years after planting, vetiver survived extremely hot and dry weather during the dry season and also frequent salt spray from sea water during storm and sea surges. Vetiver is equally effective as the concrete slaps in stabilising this batter, but at much lower cost.



Site 2: Laguna Lang Co Resort in Hue

Vetiver is planted for ornamental and landscaping purposes.

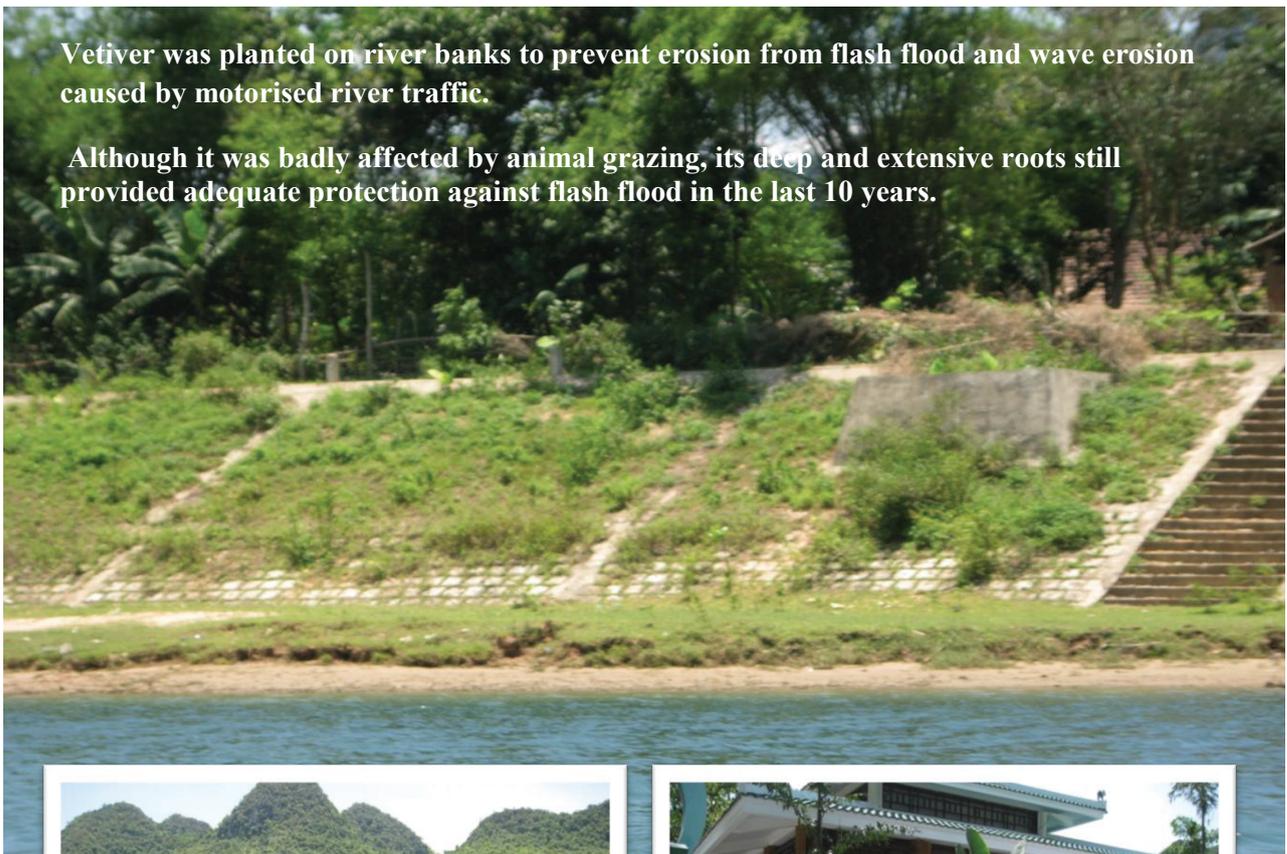


Site 3: Phong Nha National Park

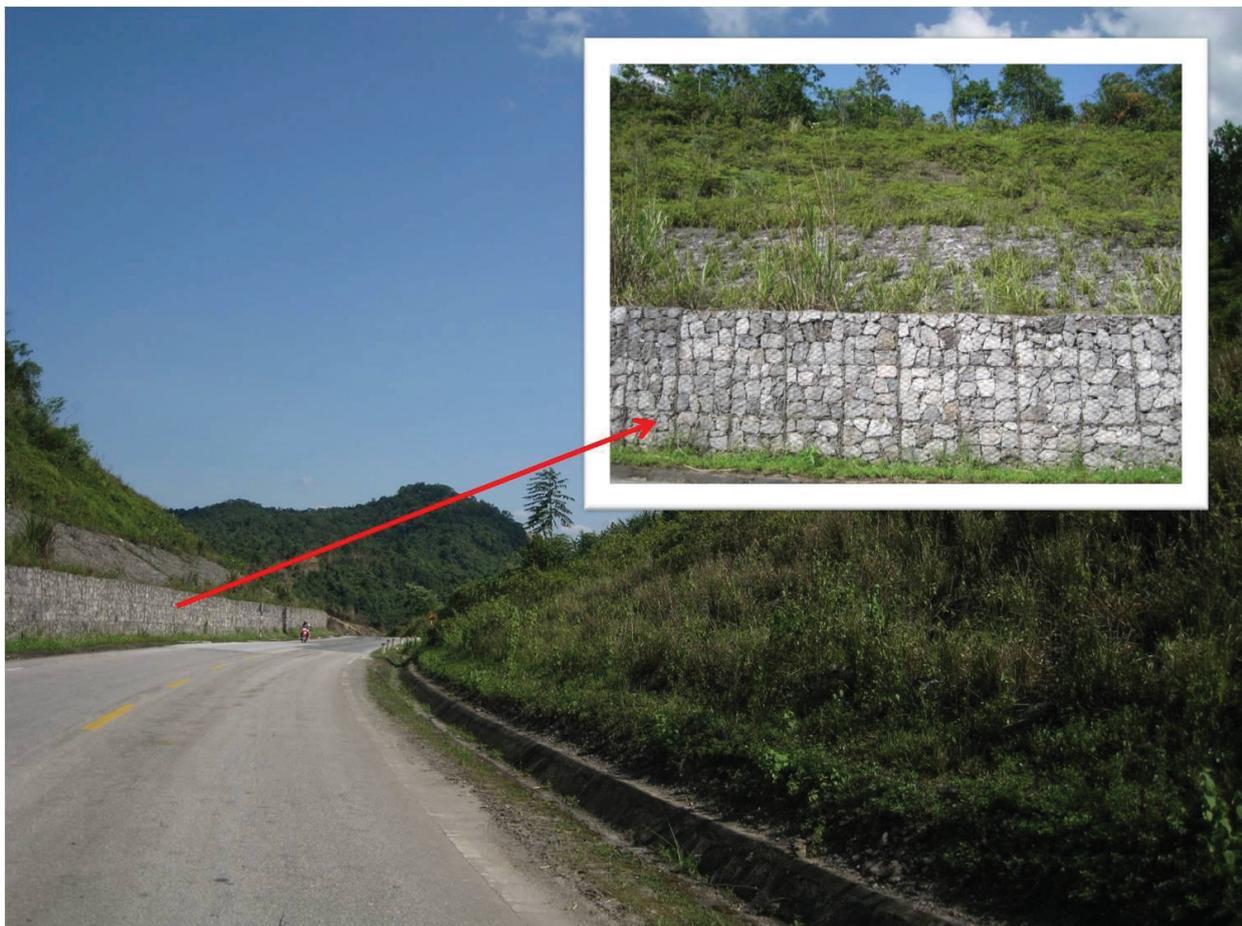


Vetiver was planted on river banks to prevent erosion from flash flood and wave erosion caused by motorised river traffic.

Although it was badly affected by animal grazing, its deep and extensive roots still provided adequate protection against flash flood in the last 10 years.

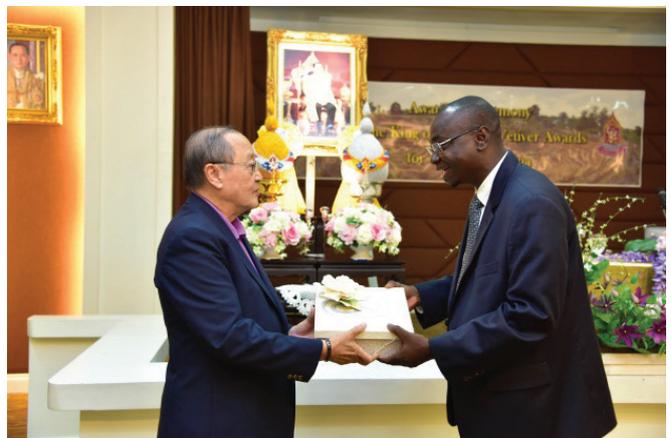


Site 4: Ho Chi Minh Highway



Pictorial Report of the Awarding Ceremony of the King of Thailand Vetiver Awards for Mr. Alain Ndona from the Democratic Republic of Congo and his Study Visits in Thailand during 16 – 19 June 2015

Awarding Ceremony on 19 June 2015



Site 1: vetiver plantation plot of Second Lieutenant Surachai Boonkong, President of the People Love Vetiver Network in the eastern region



Site 2: Prevention of landslide project along the river banks using bioengineering method



Site 3: Utilisation of vetiver grass to remediate water and soil contaminated with phenol and other hazardous substances from illegal dumping at Nong-Nea Subdistrict, Phanom Sarakham District, Chachoengsao Province



Site 4: the Khao Hin Sorn Royal Development Study Centre, Chachoengsao Province



and Application in the field of Dissemination and Technology Transfer to Mr. Alain Ndona from Democratic Republic of the Congo for his paper entitled “Introduction, Adoption and Expansion of the Vetiver System Technology in Congo-Brazzaville and Uganda Republic: Experience Gained from 2003 to 2014” as he could not attend ICV-6 in Vietnam due to

The ceremony was organized at the ORDPB Building with Dr. Sumet Tantivejkul, Secretary-General of the Chaipattana Foundation presenting the award and ML. Jirapan Davivongs, Secretary-General of the Royal Development Projects Board, Ms. Suwanna Pasiri, Deputy Secretary-General of the RDPB and the representatives from the agencies that involve in the utilization of the vetiver grass joining the ceremony. Besides the ORDPB also organized the visit for Mr. Ndona during 16-18 June 2015, as follows:

- On 16 June 2015, the officials from Foreign Affairs Group, ORDPB, accompanied Mr. Ndona to the Grand Palace, the Temple of the Emerald Buddha and Maharaj Pier.

- Then on 17 June 2015, Ms. Suwanna Pasiri, Dr. Narong Chomchalow, the vetiver expert of the ORDPB, Dr. Surapol Sanguankaew, the geology expert of the Department of Highways and ORDPB officials brought Mr. Ndona to observe Second Lieutenant Surachai Boonkong’s farmland. He is the President of the People Love Vetiver Network of the Eastern Region in Kabin Buri District, Prachinburi Province. Here, the vetiver grass is applied in different ways such as planting along the edges of the pond to prevent landslides, to reinforce structure of the pond, and to reduce erosion of the lateritic soil. Vetiver was also planted with fruit trees to solve soil problems, to increase soil moisture, to adjust the soil properties to be appropriate for cultivation and to help reduce the use of chemicals. Then, Second Lieutenant Surachai showed his integrated farming plots where he planted different kinds of vegetation, raised animals and used resources to achieve maximum efficiency. Integrated farming does not just only make the farmers live a sufficient life, but it also makes people have enough food to consume all year round. This meets His Majesty the King’s Philosophy of Sufficiency Economy. Afterwards, the group visited the landslide protection along the river banks project using vetiver grass plantation and bio-engineering. Tires were used to maintain and develop the river banks.

On 18 June 2015, the group went to observe the demonstration and performance assessment project by using vetiver to restore soil and water containing high phenol from industrial residue in Nong-Nae Subdistrict, Phanom Sarakham District, Chachoengsao Province. They were welcomed by Dr. Thanapol Penrat, the instructor of the Faculty of Engineering Naresuan University, a winner of the King of Thailand Vetiver Awards. Nong-Nae was an area that was full of waste legally and illegally landfilled from industry with danger and no danger. One among them is phenol which is a toxic substance that can change into carcinogens and causes serious threat to health of living things. In order to decrease the spreading of phenol and its effect, vetiver was planted in the experimental pond where the water contaminated with phenol was pumped. It can be concluded from the experimentation that vetiver is efficient to disintegrate phenol in water to reach a secure level and can be used for agriculture. In the afternoon, the group visited the Khao Hin Sorn Royal Development Study Centre in Chachoengsao Province and observed the centre’s activities such as integrated farming, the New Theory farming, soil and water development, mushroom cultivation, animal husbandry, herb cultivation and processing, manufacture of local products such as Thai silk, knives, bags and hats made from vetiver’s leaves. The group also visited the vetiver propagation and development work as well as the promotion of vetiver plantation in other areas.

(see photographs of the event on pages 11-14)

Abstracts of Vetiver Research Papers

1. Title: “Phytoremediation Potential of Vetiver System Technology for Improving the Quality of Palm Oil Mill Effluent”

Authors: Negisa Darajeh ^{1/}, Azni Idris ^{1/}, Paul Truong ^{2/}, Astimar Abdul Aziz ^{3/}, Rosenani Abu Bakar ^{4/}, and Hasfalina Che Man ^{5/} [^{1/} Department of Chemical and Environmental Engineering, Faculty of Engineering, Universiti Putra Malaysia, Serdang, Selangor, Malaysia; ^{2/} The Vetiver Network International, Asia and Oceania, Brisbane, Australia; ^{3/} Malaysian Palm Oil Board, Agro Product Unit, Engineering and Processing Division, Selangor, Malaysia; ^{4/} Department of Land Management, Faculty of Agriculture, Universiti Putra Malaysia, Serdang, Selangor, Malaysia; ^{5/} Department of Biological and Agricultural Engineering, Faculty of Engineering, Universiti Putra Malaysia, Serdang, Selangor, Malaysia]

Publishes in: This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. 2014.

Abstract:

Palm oil mill effluent (POME), a pollutant produced by the palm oil industry, was treated by the Vetiver System Technology (VST). This technology was applied for the first time to treat POME in order to decrease biochemical oxygen demand (BOD) and chemical oxygen demand (COD). In this study, two different concentrations of POME (low and high) were treated with vetiver plants for two weeks. The results showed that vetiver was able to reduce the BOD up to 90% in low concentration POME and 60% in high concentration POME, while control sets (without plant) only was able to reduce 15% of BOD. The COD reduction was 94% in low concentration POME and 39% in high concentration POME, while control just shows reduction of 12%. Morphologically, maximum root and shoot lengths were 70 cm, the number of tillers and leaves was 344 and 86, and biomass production was 4.1 kgm⁻². These results showed that VST was effective in reducing BOD and COD in POME. The treatment in low concentration was superior to the high concentration. Furthermore, biomass of plant can be considered as a promising raw material for biofuel production while high amount of biomass was generated in low concentration of POME

Office of the Royal Development Projects Board
2012 Arun Amarin 36, Bang Yi Khan, Bang Phlat
Bangkok 10700, Thailand

To

Vetiverim is an official quarterly newsletter of the Pacific Rim Vetiver Network. It is published by the Office of the Royal Development Projects Board, Bangkok, and distributed free of charge to individuals / institutes working on vetiver of the Network's member countries. Application for membership can be made by writing to the Secretariat, giving name, position, place of work, and mailing address.