The Dissemination of Vetiver Grass Technology in Taiwan

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Extended Abstract

Vetiver has been introduced into Taiwan three times in the past century. The first two introductions did not make vetiver a significant impact on the ecosystem and was almost extinct after the introductions. In the 1998, when the author started the collection of vetiver, none could be found in the non-agricultural lands. In five years, seven local accessions were collected in different farmlands in the west part of the island and 20 worldwide representing germplasm was received through the Vetiver Network in four batches. Thirteen accessions of 'wild' seedy vetiver germplasm were also received in 1998 from the NGPS, USDA.

The introduced vetiver germplasm after 1998 has been fully documented and gone through quarantine process and later preserved in an isolated nursery in the Experiment Farm of National Taiwan University, Taipei. Learning from the bitter lessons of failed introduction of various grasses for forage in the past 50 years, the vetiver was evaluated for its weed potential as well as adaptation to various environment conditions before release to the public. The facility of National Taiwan University was used to study the weed potential in three altitudes: sea level, 1000 and 2100 meter. The wild vetiver was found to be a prolific seed producer and should not be released to the public. The method of reproduction of vetiver was investigated after thousands of seeds were harvested in the nursery from the cultivated vetiver germplasm. It was concluded that vetiver is self-incompatible and before true sterile genotype identification, there should be no mixing of genotype in the application.

To prevent the mixing of genotypes, the DNA profiles for the cultivated vetiver germplasm were developed and a genotyping service was provided by the author's lab. Twenty-three locations representing the diverse conditions of climates, soils and adverse environments throughout the island were selected and 10 to 30 plants of the three selected genotypes were planted to evaluate the adaptability of vetiver in Taiwan. After three years of field observation, it was concluded the vetiver can prosper well below altitude 1500 meter in all the environmental conditions evaluated. It is difficult for vetiver to survive above 2000 meter altitude but with full sunlight it may survive.

The promotion of the vetiver grass technology was initiated in 1999 after the devastating earthquake hit Taiwan and preliminary adaptation evaluation of vetiver were done. A website for vetiver in Chinese was open to the public as an information distribution center. The information on the website was also recorded on CD-ROM and delivered to related government agencies and consulting companies. Oral presentations were given in more than 20 seminars in the past three years. More than one thousand attended with an engineering background engaged in the erosion control business. They received ideals and principles for adopting vetiver grass technology. The suggested vetiver grass technology specifications for construction was also proposed in May, 2001. A Chinese version of the vetiver brochure translated from the English version published by TVN was released in Jan. 2002. Three pilot projects for construction were established in 2001. One of them is on the mudstone region, which is the harshest environment for re-vegetation in Taiwan.

The success of the project makes it a demonstration site as well as the other two projects. More than 20 small scale pilot construction projects supported by the Soil and Water Conservation Bureau, the Forestry Bureau and the Water Resources Agency were established in the 2002. The sale of vetiver slips was initiated by the Experiment Farm of National Taiwan University in association with two small farmers in 2002. Two hundred and fifty thousand of slips were sold in the year. A commercial network evolved and started to function in 2003. The progress of dissemination of vetiver grass technology is steady and should boom in the coming years.

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