

14th World Bioenergy Congress and Expo

June 06-07, 2019 | London, UK

Evaluation of the availability of growing media containing woody biomass on experimental slope for slope greening

Jai Hyun Park, Si Young Ha, Ji Young Jung and Jae-Kyung Yang
Gyeongsang National University, South Korea

Many road slopes have been created along with many road works. Since these road slopes have problems of landslides and soil erosion, there are many studies on road slope greening. However, it is difficult to grow plants on a general slope. Generally, growing medium is used to replace soil for plant growth and in recent years, many studies have been conducted to produce the growing medium using various materials such as agricultural by-products and sewage sludge. Since, the study on the road slope greening to use this growing medium is quite limited, we produce the growing media using woody biomass and apply the prepared growing media to the preliminary slope to determine the germination of *Lotus corniculatus*. The growing media was prepared by mixing woody biomass, peat, perlite and sodium nitrate. Soil was used as a control. Soil, soil and growing media mixture (1:1, w/w) and growing media were applied to slope to observe physical and chemical properties and germination of *Lotus corniculatus*. As a result, physical properties (moisture content, bulk density and porosity) were improved by using growing media to compare soil for plant growth. Among the chemical properties, the organic matter, available phosphate and CEC were also higher in the using growing media than soil. However, the germination of *Lotus corniculatus* was the highest in the mixture of soil and growing media followed by the higher in the soil. The lowest germination was in the growing media. In conclusion, when the results of physical and chemical properties and germination, it was confirmed that the mixture of soil and the growing media was most suitable for plant growth on the slope.

Recent Publications

1. Hyung-Tae Jang, Won-Je Park, Nam-Choon Kim and Jong-Min Park (2012) Use of *Arundinaria munsuensis* Y. Lee as revegetation plant materials of damaged slopes. Journal of the Korea Society of Environmental Restoration Technology 15(1):133–140.
2. Atif Riaz, Adnan Younis, Imran Ghani, Usman Tariq and Muhammad Ahsan (2015) Agricultural waste as growing media component for the growth and flowering of *Gerbera jamesonii* cv. hybrid mix. International Journal of Recycling of Organic Waste in Agriculture 4:197–204.
3. J C Ostos, R Lo'pez-Garrido and J M Murillo and R Lo'pez (2007) Substitution of peat for municipal solid waste- and sewage sludge-based composts in nursery growing media: Effects on growth and nutrition of the native shrub *Pistacia lentiscus* L., Bioresource Technology 99:1793–800.
4. Marta Benito, Alberto Masaguer, Roberto De Antonio and Ana Moliner (2005) Use of pruning waste compost as a component in soilless growing media. Bioresource Technology 96(5):597–603.
5. Jeung-Hyun Koh, Young-Jin Hur, Yong-Koo Lee and Nam-Choon Kim (2010) A Study on the Use of Wood Waste for Slope Revegetation Technique. J. Korean Env. Res. Tech. 13(1):47–56.

Biography

Jai Hyun Park is a PhD candidate in Gyeongsang National University, South Korea. His studies are in growing media for growing various plants. He is interested in biomass and bio-ethanol production.

jay2507@gnu.ac.kr