

Effects of Different Soilless Growing Media on the Growth and Development of Tobacco Seedlings

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Abstract

To prevent reliance on a single finite source of the medium in raising tobacco nurseries, there arose a need to evaluate alternative media based on materials already available on farms. An experiment was set to evaluate the effects of different soilless growing media on the growth and biomass of flue-cured leaf tobacco seedlings. The design used was a randomized complete block design with three replications. The treatments were 100% pine bark (control), 50% cattle manure + 50% sand, 100% coal rubble, 100% compost manure, 50% pine bark + 50% sand, 100% cattle manure, 75% coal rubble + 25% sand, 75% cattle manure + 25% sand, 50% compost manure + 50% sand, and 75% compost manure + 25% sand. The results showed that increased seed emergence and survival percent were observed in the following media; 50% pine bark + 50% sand, 75% coal rubble + 25% sand, 75% compost manure + 25% sand, 100% coal rubble, 100% compost manure, and 50% compost manure + 50% sand, these treatments were not statistically different from 100% pine bark (control). The stem length and diameter of tobacco seedlings were superior in the medium with 100% compost manure when compared to all other treatments including pine bark. Increased transplantable percent of tobacco seedlings were in 50% pine bark + 50% sand and 100% compost manure, significantly higher than 100% pine bark (control). Most treatments that used cattle manure had significantly lower seed emergence percent, survival percentage, and transplantable percent of tobacco seedlings. Therefore, tobacco growers are recommended to use the growing medium with compost manure and should avoid using cattle manure when raising tobacco seedlings in seed beds.