

INVESTIGATION ON DURABLE PLANT MATRIALS AS SOURCES OF MULCH IN TEA NEW CLEARING IN THE UPCOUNTRY INTERMEDIATE ZONE.

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ABSTRACT

With restrictions of chemical herbicides with the increment of health awareness, cultural weed management strategies were more focused Hence, as a eco-friendly method, a field experiment was conducted to investigate the potential of using plant materials as mulches in a tea new clearing in Ury estate under Balangoda plantation PLC , during September to December 2019. Shoots of *Acacia mangium* , *Cassia spectabilis*, *Megathyrsus maximus* and *Gravillea robusta* were used as treatments and *Cymbopogon confertiflorus* was used as the 'Control'. Each mulch was spread on randomly selected plots each sized 0.6×1.2m at a rate of 1 kg dry matter m^{-2} and replicated in three times. The rate of ground exposure as a percentage was visually assessed with the decomposition of each material with the quadrate and weed density (counts per 1 ft^2) was counted at every other weekly. Weed dry weight was measured at four weeks intervals. A bioassay was also carried out to study any allelopathic effect of mulches on the suppression of weeds. Tea plant growth parameters were measured. Soil moisture, soil pH and soil P and Soil C content were measured as soil assessments. *Gravillea robusta* showed the highest weight of bagged mulching sample, lower weed density and weed dry weight. *Gravillea robusta* was found to be more durable and effective than other plant based mulches. The highest soil moisture content percentage and soil pH was recorded for *Cymbopogon confertiflorus*. In addition, *M. maximus* showed some improvement in soil P and soil C.

Keywords: Ground exposure, Mulching materials, Tea, Weed density

Bibilography : Hasanthi Kumudika Wellappili, fresh graduate of Faculty of Animal Science & Export Agriculture, Uva Wellassa University and interest for engaging agriculture researches.Since joining the Uva Wellassa University, Hasanthi Kumudika has been involved with studies as well as entertainment activities related to Tea technology & Value Addition

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