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**Preliminary evaluation of legumes for their potential to suppress
*Imperata cylindrica***

M. Sc. Thesis

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5.0 Summary

The slash-and-burn system of agriculture that prevails in West Africa among small-scale farmers is no longer sustainable. This is because with increased population in the region, fallow periods have been shortened leading to a rapid decline in soil fertility with serious implications for food security. This has been compounded by the presence of the noxious weed, *Imperata cylindrica*. Various strategies have been employed to control/suppress this weed but eradication has not been achieved in many areas. Mechanical control in the area where this work was done is too labour intensive and has not been able to control the weed.

Therefore, this study was done with the specific objectives of (1) testing the effects of different legumes on the emergence of *I. cylindrica* shoots, (2) identifying the legume species that best suppress *I. cylindrica* and (3) assessing the effect of a herbicide (glyphosate) on *I. cylindrica* growth and comparing it with that of the tested legumes.

The work was done for three months on land belonging to Wum Prisons in the North West province of Cameroon. The treatments used included four different legume species (*Mucuna pruriens*, *Calopogonium mucunoides*, *Pueraria phaseoloides*, and *Tephrosia vogelii*), *Chromolaena odorata* (an invasive species which is of interest to researchers in the southern part of Cameroon), and the herbicide glyphosate. Data was collected and analysed using the computer program SAS and the Excel software.

The results indicate that the treatments *M. pruriens* and glyphosate were effective in suppressing *I. cylindrica* within the period within which this work was done. An economic analysis shows that glyphosate is a better option for *I. cylindrica* control especially in areas with fertile soils. However, this result is not conclusive because the time frame for this experiment was the period required for the other legume species to establish and so their smothering effect was not evaluated entirely.
