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INFESTATION OF COFFEE AND OTHER CROPS BY FIELD  
DODDER (*Cuscuta campestris Yunker*) IN  
KERICHO COUNTY, KENYA

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other crops by Field*




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**DECLARATION**

This thesis is my original work and has not been presented for a degree in any other university or for any other award.


Signature.....  ..... Date..... 23<sup>rd</sup> Feb 2023 .....

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## ABSTRACT

Extensive geographical distribution and variable host range make *Cuscuta campestris* (field dodder) one of the most common and highly destructive invasive flowering plant species. *Cuscuta campestris* is an obligate shoot parasitic weed that hampers growth of plants and causes loss of yield of many crops globally. It has been recorded as one of the worst weed of crops in Turkey and the Democratic Republic of Congo. The rate of spread and destruction in these countries and others is alarming and if this happens in Kenya, crop yields are likely to be reduced. In Kenya the dodder weed is common in counties such as Central, Coast, Nyanza, Western and Rift valley. This study sought to investigate the causes, extent and impact of infestation and potential for management of *C. campestris* in Chilchila ward, Kericho County, Kenya. The study documented crops affected, impact and efforts to manage the weed in the area. A semi-structured questionnaire was administered to 60 farmers to get their views on the impacts of the invasive species and management efforts. Eight plots of 20 x 20 M were established along four, 3.5 km baseline transects in all the four compass directions starting from the point of introduction of field dodder. The plots were laid at 400 m from each other. Data that was collected in each plot included the type of crops affected, levels of infestation on coffee and weight of their berries in coffee at different levels of infestation. The results were summarized using descriptive statistics and presented using tables and charts. Analysis of variance (ANOVA) was used to investigate variation in intensity of infestation of *Cuscuta campestris* on coffee plantations with distance from the point of introduction. The main crops parasitised included coffee which had the highest frequency, followed by bananas and mangoes. This was attributed to the perennial nature of the crops. Besides, the high economic value attached to the coffee necessitates frequent application of fertilizers which also benefit *C. campestris*. The number of infested coffee trees reduced significantly with increasing distance from the point of introduction ( $F= 6.41$ ,  $df = 24$ ,  $p < 0.05$ ). Findings from this study indicated that field dodder infestation led to small berries (29.7%), reduced berry weight (35.9%), falling of leaves (3.9%) low crop yield (13.3%) and death of coffee trees (17.2%). Farmers' management methods included hand picking (49), pruning (25), spraying (26), weeding and uprooting (3). Hand picking at an early stage, timely application of correct proportions of glyphosate, pruning lower branches and uprooting the host was reported by 6.7% of farmers as effective methods of control. On the other hand, 43% of the farmers stated that the methods were not effective, but they appreciated the fact that it lowered the infestation level. Further, 50.3% of the respondents reported that the methods were not effective at all. The findings in this study are crucial in the formulation of strategies to control the spread of *C. campestris*. Farmers are encouraged to get rid of weeds regularly as they were found to be primary hosts for field dodder. Use of monocotyledonous plants such as aloes and bamboo as hedge plants was recommended as these plants apparently defied infestation by the weed.