

DESIGN OF SELECTIVE TEA PLUCKING MACHINE

by

R.P.P. Krishantha

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Dr. M.A.R.V. Fernando



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This thesis was submitted to the Department of Mechanical Engineering of the University of Moratuwa in partial fulfillment of the requirements for the Degree of Master of Engineering in Manufacturing Systems Engineering

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Declaration

This Dissertation paper contains no material which has been accepted for the award of any other degree or diploma in any University or equivalent institution in Sri Lanka or abroad, and that to the best of my knowledge and belief, contains no material previously published or written by any other person, except where due reference is made in the text of this Dissertation.

I carried out the work described in this Dissertation under the supervision of
Dr. M.A.R.V. Fernando.

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Date : 11/07/2006

(Signature of Student)

Name of Student: R.P.P. Krishantha

Reg. No : 02/9639



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The Dissertation Proposal prepared by R.P.P. Krishantha is recommended and forward for onward action please.

Date : 11/07/2006

UOM Verified Signature

(Signature of Supervisor)

Name of Supervisor: Dr. M.A.R.V. Fernando

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R.P.P. KRISHANTHA

Abstract

This thesis focuses on the research project is “Selective Tea Plucking Machine”. According to my literature survey I have found that Tea plucking machines are designed in many countries but they are designed only for plucking and selecting method. These machines are very large and expensive. It is used only for flat land. However this at present is a completely manual process and is responsible for a substantial portion of the cost of tea manufacture.

In manual plucking, plucking tea leaves are retained between fingers till reasonable amount of leaves are collected. Then ‘holding between fingers’ often cause some degree of crushing leading to commencement of premature fermentation. Therefore quality will be reduced. Thus it has become essential to mechanise this process to improve productivity, yet retaining the high quality and accuracy of selective plucking.

Due to above technical and financial restrictions facing with research as well as depth of expected research study to be performed by using own methods to design low cost and portable machine.

In this context is carried out considering selective plucking method. Further, considering the ergonomics aspects are essential for this design, it is useful to operate this machine without fatigue. It is based on less weight of the machine, holding and bag (container) arrangement. It is understood that the given detailed of the cutting mechanism and the tea leaves are transported to the bag (container) with suitable convey system.

This report contains literature survey, field test, design details, and economic feasibilities.

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