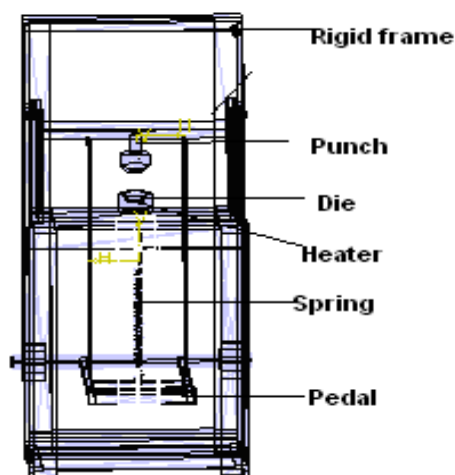


RESEARCH AND DEVELOPMENT

Name of the Researcher	Designation & Department	Research Topic	Year of Completion
Dr. Pravin Potdukhe	Professor & head Department of Mechanical Engineering	Design, Fabrication & Performance Studies On Leaf Plate Making Machine	2008

BRIEF SUMMARY OF THE WORK: A leaf plate making machine (LPMM) was designed and fabricated at Rajiv Gandhi College of Engineering, Research & Technology, Chandrapur (MS) India.

Leaf plates are traditionally made by hand in Indian villages. These are commonly used for serving food at marriages, religious and social functions. The laborious craft can now be converted into machine operation to make these container in elegant shape and size and to make the plates much stronger than the normal one by conventional method of making plates. This machine uses palash leaves which are eco friendly. Hence products are green products. This machine can be boon for rural people and it can be regarded as rural technological green. machine. Machine is very effective in terms of cost, productivity, quality, versatility, space required, and ease of operation for manufacturing of product. Machine minimizes fatigue and can be operated in sitting position. The punch-die assembly of the machine is fitted with a novel design of sliding mechanism that consisted of L shaped M.S. angle and an electric heater made by using electric iron heating elements.. Operating parameters recorded for machine are: punch temperature, 120⁰C; die temperature, 35-45⁰C. Cost of machine is 60% less than that of commercially available machine. Single machine can be used for manufacturing variety of products by interchanging set of die-punch. An efficient cutting process has been developed for cutting of leaf. The machine produces 600 plates per day and can be used as income source amongst the rural households. Palash tree is a medium sized deciduous tree with big, smooth and trifoliate leaves. It is a medium sized dry season-deciduous tree, growing to 15 m tall. The leaves are pinnate, with an 8-16 cm petiole and three leaflets, each leaflet 10-20 cm long. In poorer regions of many parts, for example in Maharashtra, this tree amongst others provides leaves that are used either with many pieced together or singly to make a leaf-plate for serving a meal.



Leaf Plate Making Machine

INDUSTRY RELEVANCE -The above work has got wide application in post harvest process. The farmers & agro processing industries will be greatly benefitted by the work.

RESEARCH OUTCOMES: In the present work, an attempt is made to find suitable leaf, exact wattage of electric heater required, optimum temperature for formation of leaf-plate, and re-engineer the mechanism for ease of operator & to manufacture. The temperature needed for formation of leaf plate has been optimized by experimentation. The final objective of the present study is to investigate performance of the leaf plate making machine. Based on the above work one paper was published in national conference.