Mahatma Phule Krishi Vidyapeeth, Rahuri

All India Coordinated Research Project on Farm Implements and Machinery

1.	**Year of Start**	:	1975
2.	**Contact Details**	:	
	Postal Address	:	Professor and Principal Investigator AICRP on Farm Implements and Machinery Dr. Annasaheb Shinde College of Agricultural Engineering and Technology, Mahatma Phule Krishi Vidyapeeth, Rahuri 413 722
	Phone No.	:	02426-243219
	Fax No.	:	02426-243219
	Email	:	aicfim.mpkv@gov.in , fimmpkv@gmail.com
3.	**Objectives/Mandates**	:	**Objectives** • To identify the present mechanization gaps and future needs for improved farm equipments on the basis of objective analysis of prevailing agro-socio-economic factors, for different crops, cropping patterns and agro-climatic regions • To design, develop, adopt farm tools, implements and machines for rain fed and irrigated farming suitable for animate, mechanical power sources with a view to increase crop production and productivity • To improve the versatility of power tillers by development/adoption of improved implements • To test farm equipments in the laboratory and field for development of new machines and to conduct intensive and extensive trials on the farmers field for evaluation and refinements for finalization of design of new as well as existing farm implements and machinery • To establish linkages with manufacturers by involving them in developmental process of farm machines and their production technology for manufacturing of improved farm implements • To manufacture implements in PMW for their multi-locational feasibility trials and promotional programmes • To conduct feasibility testing on farmers field of prototypes of proven designs of farm implements and machinery, selected from different regions for adoption under local conditions with a view to bridge the identified mechanization gaps • To educate farmers on the significance of use and maintenance of improved farm equipments through various media including trainings and demonstrations

Mandates

- To conduct research and development on farm implements and machinery for different agro-climatic zones of the region comprising of Kolhapur, Sangli, Satara, Solapur, Pune, Ahmednagar, Nashik, Jalgaon, Dhule and Nandurbar districts , Prototype production, feasibility testing and promotion of manufacturing through industrial extension and introduction and popularization of improved farm equipments.

4. Infrastructure :

Laboratories : Farm Implement Testing Laboratory

Advanced facilities : Testing of Farm Implements is carried out with following advanced testing Instrumentation

Sr. No.	Name of Instruments	Utility
1	Electronic Balance	Precision in weight measurement
2	Rockwell cum Brinell Hardness tester	Useful for measurement of hardness of material
3	Digital load cell with indicator	Precision in measuring Draft requirement of the implement
4	Hot air oven	Useful in determining moisture content of soil, crop and grain.
5	Hardness tester for non- conducting metals	Useful for measuring hardness of non conducting material like rubber, leather, etc
6	Polar heart rate monitor	Useful for ergonomic study
7	Eye flicker meter	Useful for ergonomic study
8	Reaction meter	Useful for ergonomic study
9	Emission gas analyser	Useful in exhaust smoke analysis
10	Computerized Universal Testing Machine	Useful in determining strength properties of material.
11	Digital In situ Soil moisture meter	For quick and accurate In situ soil moisture measurement
12	Spray pump Test rig	Useful in evaluation of sprayers
13	Spray Patternator	Useful in evaluation of sprayers
14	Digital Cone Penetrometer	Useful in accurate measurement of soil resistance.

5. Human Resource :

Technical Staff :

SN	Designation	Discipline	Remarks
1	Principal Investigator/ Professor	Farm Power and Machinery	Vacant
2	Associate Professor	Farm Power and Machinery	Filled
3	Assistant Professor	Farm Power and Machinery	Filled
4	Assistant Professor	Farm Power and Machinery	Filled
5	Senior Technical Assistant	Farm Machinery and Power	Vacant
6	Foreman (Workshop)	Agril. Engg/Mechanical Engg.	Vacant
7	Senior Technician (Technical Assistant)	Agril. Engg/Mechanical Engg.	Filled
8	Senior Technician (Mech Supervisor)	Agril. Engg/Mechanical Engg.	Filled
9	Senior Technician (Technical Assistant)	Agril. Engg/Mechanical Engg.	Filled
10	Senior Technician (Technical Assistant)	Agril. Engg	Filled
11	Technician (T-1)	Carpenter	Filled
12	Technician (T-1)	Fitter	Filled
13	Technician (T-1)	Welder	Filled
14	Technician (T-1)	Blacksmith	Filled
15	Technician (T-1)	Blacksmith	Filled
16	Technician (T-1)	Turner	Filled
17	Technician (T-1)	--	Vacant
18	Technician (T-1)	--	Vacant
19	Technician (T-1)	--	Vacant
20	Technician (T-1)	--	Vacant
21	Technician (T-1)	--	Vacant

Non-Technical Staff :

SN	Designation	No of posts	Remarks
1	Draftsman	01	Filled
2	Steno Typist	01	Vacant
3	Senior Clerk	01	Filled
3	Driver (Jeep)	01	Filled
4	Driver cum Mechanic (Tractor)	01	Vacant

6. Research Achievements :

Varieties : Nil

Recommendations : 27

7.	**Ongoing Research**	:	**A) Research & Development** • Design and Development of Tractor Operated Slurry Dispenser For Orchards. • Development and Performance Evaluation of Tractor Hydro-Mechanically Controlled M.B. Plough for Grapes. • Design And Development of Tractor Operated Horizontal Discharge Shredder for Orchards. • Development and Performance Evaluation Of Tractor Hydro-Mechanically Controlled Banana Stem Shredder. **B) Prototype Manufacturing** • Manually Operated Drumstick Harvester (MPKV). • Tractor Operated Phule Sugarcane Transplanted (MPKV) • Power Operated Phule Sugarcane Sett Cutter (MPKV) • Tractor Operated Inter Row-Cum- Intra Row Weeder for Orchards (MPKV) **C) Prototype Feasibility Testing** • Tractor Operated Semi-Automatic Turmeric Rhizome Planter (commercial) • Tractor Operated Roto-Ridger (commercial) • Tractor Operated Vibratory Sub-soiler(commercial) **D) Front Line Demonstration** • Tractor Operated Inter Row-Cum-Intra Row Weeder for Orchards (MPKV) • Tractor Operated Root Crop Harvester