

Cost Effective farm Machineries and Farm Implements

University of Horticultural Sciences, Bagalkote

1.

1) **Title of technology:** Aloe Gel Extraction Machine

2) **Category classification:** Equipment

3) **Year of release:**

4) **Technology source/acknowledgements:**

Maharana Pratap University of Agricultural & Technology, Udaipur , Rajasthan

5) **Technology description:** Aloin-free clear aloe gel without rind is required for making all kind of health drink/beverages and cosmetic/medicinal products. A gel extraction machine was developed which consisted of three pairs of stainless steel roller arranged in vertical plane. The front pair has more clearance than the rear pairs. The front pair just compresses the leaf while rear pairs helps in extraction. The clearance between rollers can be adjusted with the help of nuts provided on top frame according to the thickness of leaves. Maximum gel recovery could be obtained at roller speed 75-90 rpm. The machine has capacity for extracting 40-50 kg/h leaf. Two units have been supplied to a SHG village Oгна (Forest deptt).

6) **Recommended practices/process:**

* Input/raw material: Aloe vera leaves * Overall dimension: 950 mm x 550 mm x 850 mm

* Weight: 77 kg * Prime mover: Electric motor

* Plant & Machinery: Gel extractor, pulper/grinder

* Power: 3 hp Single phase power connection * Man power: 1 unskilled labour

* Investment: Rs 70,000/- * Land: 50 Sqm

7) **Intended outcome and expected results:** Output capacity: 100-150 lit /day.

8) **Specific advantages:**

* Efficiency: 90% * Unit cost of operation: Rs 30/lit * Operational efficiency: 70%

* Machine has application for extracting clear gel from aloe vera leaf. It has use for small entrepreneurs.

9) **Limitations if any:** Suitability for crops/commodity: Aloe vera.

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**

2.

1) Title of technology:

Safety device for coconut climbing machine

2) Category classification: Farm implements and Equipment

3) Year of release:

4) Technology source/acknowledgements: Central Plantation Crops Research Institute, Kasargod

5) Technology description: When attached the safety device provides fool proof safety to the person climbing coconut using the Chemberi model coconut climbing machine. Unit cost: Rs.250/- (excluding the cost of body harness)

6) Recommended practices/process:

7) Intended outcome and expected results:

8) Specific advantages:

- * When attached the safety device provides fool proof safety to the person climbing coconut using the Chemberi model coconut climbing machine.
- * Unit cost: Rs.250/- (excluding the cost of body harness)

9) Limitations if any: Suitability for crops: coconut

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:



3.

1) **Title of technology:** Snow Ball Tender Nut Machine

2) **Category classification:** Farm implements and Equipment

3) **Year of release:**

4) **Technology source/acknowledgements:**

Central Plantation Crops Research Institute, Kasargod

5) **Technology description:** Application: To produce snowball tender nut from tender coconut
Unit cost : Rs.20,000/- Output capacity: Ten snowball tender nuts per hour.

6) **Recommended practices/process:**

7) **Intended outcome and expected results:** Output capacity: Ten snowball tendernuts per hour.

8) **Specific advantages:**

* To produce snowball tender nut from tender coconut

9) **Limitations if any:** Suitability for crops: coconut.

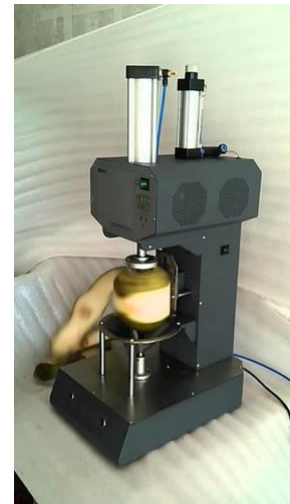
10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**



4.

1) **Title of technology:** Tender nut punch and cutter

2) **Category classification:** Farm implements and Equipment

3) **Year of release:**

4) **Technology source/acknowledgements:**

Central Plantation Crops Research Institute, Kasargod

5) **Technology description:** Application/Use: For drinking tender nut water.

Unit cost: Rs.3500/-. Output Capacity: 150 – 200 nuts/hr.

6) **Recommended practices/process:**

7) **Intended outcome and expected results:** Output Capacity: 150 – 200 nuts/hr.

8) **Specific advantages:**

* For drinking tender nut water.

9) **Limitations if any:** Suitability for crops: coconut.

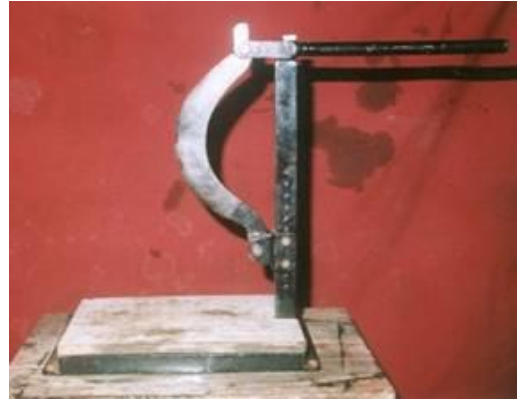
10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**



5.

1) **Title of technology:** Low-cost Ginger storage structure

2) **Category classification:**

3) **Year of release:**

4) **Technology source/acknowledgements:** ICAR Research Complex NEH Region, Barapani, Meghalaya

5) **Technology description:** Ginger is the major rhizomatous crop grown by almost every farmer of the north-eastern region. Ginger is sown in NEH region during April & May. Crop matures in 8-9 months and harvesting is done during December and January. Depending upon the prevailing demand, the green ginger (tender rhizome) is also harvested after 6 months of sowing for preservation, pickling and consumption. The mature crop is harvested and rhizome material is separated from the marketable ginger. Subsequently farmers have to dispose of the ginger immediately into the market and accept the lowest rate of their produce because at the time of harvest, the farmers do not get remunerative price. Farmers prefer to store the ginger and its propagative material. The rhizomes storage is essential for the next cultivation

6) **Recommended practices/process:** Ginger is the major rhizomatous crop grown by almost every farmer of the north-eastern region. Ginger is sown in NEH region during April & May. Crop matures in 8-9 months and harvesting is done during December and January. Depending upon the prevailing demand, the green ginger (tender rhizome) is also harvested after 6 months of sowing for preservation, pickling and consumption.

7) **Intended outcome and expected results:** Crop matures in 8-9 months and harvesting is done during December and January. Depending upon the prevailing demand, the green ginger (tender rhizome) is also harvested after 6 months of sowing for preservation, pickling and consumption. The mature crop is harvested and rhizome material is separated from the marketable ginger.

8) **Specific advantages:**

*. Subsequently farmers have to dispose of the ginger immediately into the market and accept the lowest rate of their produce because at the time of harvest, the farmers do not get remunerative price.

*Farmers prefer to store the ginger and its propagative material.

*The rhizomes storage is essential for the next cultivation

9) **Limitations if any:**

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**

6.

1) **Title of technology:** Animal Drawn Patela harrow

2) **Category classification:** Farm Implements and Machinery of Seedbed propagation equipment

3) **Year of release:**

4) **Technology source/acknowledgements:** AICRP on Farm Implements and Machinery, Bhopal

5) **Technology description:** It is secondary tillage equipment for clod crushing, stubble or trash collection, leveling and smoothening of land surface before seeding. It consists of a sal wood plank, trash collection hooks, cog wheel and lever for lifting. It is available in working width of 1.5 and 2.0 m. The frame carries a bar to which curved and pointed hooks are attached. The bar can be raised or lowered by means of the lever having a slotted sector to lock its position. It costs Rs. 6000/- and cost of operation is Rs. 560/ha. The field capacity of the equipment is 0.3 ha/h and labour requirement is 3-4 man-h/ha.

6) **Recommended practices/process:**

*cog wheel and lever for lifting.

*It is available in working width of 1.5 and 2.0 m.

*The frame carries a bar to which curved and pointed hooks are attached.

7) **Intended outcome and expected results:**

* cost of operation is Rs. 560/ha.

* The field capacity of the equipment is 0.3 ha/h.

8) **Specific advantages:**

* labour requirement is 3-4 man-h/ha.

* The field capacity of the equipment is 0.3 ha/h.

9) **Limitations if any:** Seedbed propagation.

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**

7.

1) **Title of technology:** Power Tiller with Rotary Attachment

2) **Category classification:**

Farm Implements and Machinery of
Seedbed propagation equipment

3) **Year of release:**

4) **Technology source/acknowledgements:** AICRP on Farm Implements and Machinery, Bhopal

5) **Technology description:** It is a single axle power unit to till the fields in dry condition and puddle the fields for rice crop. With other attachments, it can plough fields, make ridges and interculture in crops. It can renovate pastures, cut grasses, and level fields, dig potatoes, spray insecticides, pump water and haul up to 1.5 t load. This implement is commercially available in the country and costs about Rs. 1,50,000/- The cost of operation of rotary tiller is Rs. 1100/ha.

6) **Recommended practices/process:**

It is a single axle power unit to till the fields in dry condition and puddle the fields for rice crop. With other attachments, it can plough fields, make ridges and interculture in crops.

7) **Intended outcome and expected results:** The cost of operation of rotary tiller is Rs. 1100/ha.

8) **Specific advantages:**

- *It can renovate pastures,
- *cut grasses,
- *and level fields,
- *dig potatoes,
- *spray insecticides

9) **Limitations if any:** Seedbed propagation.

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

- i. **Investment analysis:**
- ii. **Is it suitable for custom hiring or actual purchase:**
- iii. **Others, if any:**



8.

1) Title of technology: Mould Board Plough

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:



5) Technology description:

F ƒÉÁV°ƒAzÀ G¼ÄÄÉÄ ªÀiÁrzÀ °ÉÆ®zÀ ªÄZsÀªªsÁUÀzÀ°è ,ÀtÚ PÁ®ÄÉ °ÁUÄÄ ªÉÆzÀÄUÀ¼ÁUÄÄªÀ ,ÁzsÀªvÉUÀ¼ÄÄ °ÉZÄÄÑ. DzÀgÉ PÁ¼É ªÄvÄÄÛ PÀ,ÀPÀrØ °ÉÆzÀ-ÁzÀ ¥AzÁxÀØUÀ¼ÄÄ ªsÀÆªAiÄÄ PÉ¼ÄªsÁUÀPÉÌ ªÉÆgÀ-ÁUÄÄªÄzÀjAzÀ PÉ¼ÉvÄÄ UÉÆ§âgÀªÁUÄÄvÄÛzÉ, EzÀjAzÀ ªÄtÁÚƒÀ ¥sÀªªvÄÛvÉ °ÉZÄÄÑ®Ä CƒÄÄPÀÆ®ªÁUÄÄvÄÛzÉ.

6) Recommended practices/process:

ªsÀÆªAiÄÄƒÄÄß D¼ÄªÁV G¼ÄÄÉÄ ªÀiÁqÄÄªÄzÀ®èzÉ, ªÄtÚƒÄÄß ªÄÄUÄÄª °ÁPÄÄvÄÛzÉ.

7) Intended outcome and expected results:

ƒÉÁV®ÁUÀ¼Á PÉëÁvÄæ ,ÁªªxÀªªªª 0.18 jAzÀ 0.2 °ÉPÉÖÄgi¥Àæw UÀAmÉUÉ EgÄÄvÄÛzÉ.

8) Specific advantages:

*¥À°Ö ƒÉÁV®ÁUÀ¼ÁƒÄÄß ,ÁªiÁƒÄªªªÁV D¼ÄªÁzÀ JgÉÄ ªÄtÁÚƒÀ°è °ÁUÄÆ PÀ§Äª ªÉ¼ÉAiÄÄªªÀ UÀzÉYUÀ¼Ä°è G¥ÀAiÉÆÄV,À§°ÄzÄÄ.

*¥À°Ö ƒÉÁV°ƒÀ §¼ÀPÉAiÄÄ CƒÄÄPÀÆ®ªÉAzÀgÉ °ÉÆ®zÀ ªÄZsÀªªzÀ°è PÁ®ÄÉ (Furrows) DUÀzÉÄ ªÄtÁÚƒÄÄß ,ÁªiÁAvÀgÀªªV ªiÁqÄÄvÄÛzÉ °ÁUÄÆ ªÄZsÀªªªsÁUÀzÀ°è ,ÀtÚ PÁ®ÄÉ °ÁUÄÄ ªÉÆzÀÄUÀ¼ÁUÄÄªÀ ,ÁzsÀªvÉUÀ¼ÄÄ EgÄÄªªªç®è.

*F ƒÉÁV°ƒÀ ªÄÄRª CA+ªªÉAzÀgÉ ƒÄÉÁV°ƒAzÀ ªÄtÁÚƒÄÄß MAzÉÄ çQÌƒÀ°è gÉPÉÌUÀ¼ÄÄ ,ÀÛ¼ÁAvÀj,ÀÄvÄÛvÉ ªÄvÄÄÛ G¼ÄÄªªª ¥AzÀPwAiÄÄ°è mÁæöªPÄÖgi ¥ÁPÀìçAzÀ ¥ÁPÀìzÀ ,Áªª°èAiÉÄÄ ZÀ°,ÄªªªzÀjAzÀ ,ÁªªAiÄÄ °ÁUÄÆ EAzsÀƒÄzÀ G½vÁAiÄÄªÁUÄÄvÄÛzÉ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

9.

1) Title of technology: Disc Plough

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:



5) Technology description: vÀmÉÖÀ £ÉÁV@ÄUÀ¼À vÀmÉÖAiÀÄ ºÁ,ÀªÀÄ 30-45 ,ÉA. «ÄÄ. °ÉÆAçzÄÄÝ, EªÀÄUÀ¼À£ÀÄß çAr£À ºÉÄÄ-É °ÉÆAç¹gÄÄvÁÛgÉ. F vÀmÉÖ £ÉÁV@ÄUÀ¼À£ÀÄß JgÀqÄÄ vÀmÉÖAiÀÄ £ÉÁV@Ä ºÁUÀÆ §ºÄÄ vÀmÉÖAiÀÄ £ÉÁV@ÄUÀ¼Àv ºÄVÄðPÀj¹zÁÝgÉ. F £ÉÁV@ÄUÀ¼ÀÄ MAzÉÄ zÀAr£À ºÉÄÄ-É, ,ÀÖqi gÉÆÄ®gi ºÉÄjAUÿUÀ¼À ºÉÄÄ-É vÀmÉÖUÀ¼À£ÀÄß °ÉÆAç¹gÄÄvÁÛgÉ.

6) Recommended practices/process:

* ºÄÄtÁÚ£À vÉªªAA±À PÀrªÉÄ EzÀÝºè ºÁUÄÄ ºÄÄtÁÚ£Àºè ,ÀtÚ PÀ®ÄèUÀ½zÀÝgÉ F £ÉÁV@Ä GÿÀAiÉÆÄV,ÀÄªÀÄzÄÄ ,ÀÆPÀÛ.

7) Intended outcome and expected results:

* F vÀmÉÖAiÀÄ £ÉÁVº£À PÉëÄvÄæ ,ªªÄxÀãðªª ,ªªÀiÁ£ÀªªÁV 0.18-0.22 °ÉPÉÖÄgi ÿÄæw UÀAmÉUÉ.

8) Specific advantages:

* °ÉÆ®zÀºègÄªªÀ ºÀj-É UÉÆ§âgÀ ºÄÄtÁÚUÉ ,ÉÄj,ÀÄªªºè §ºÀ¼À GÿÀAiÀÄÄPÀÛªªVgÄÄvÀÛzÉ.

* F GÿÀPÀgÀt ºÀj-É PÀ,ªªÀ£ÀÄß vÀmÉÖAiÀÄ ºÉÆtaªAzÀ PÀvÀÛj¹ ºÄÄtÁÚUÉ ,ÉÄj,ÀÄªªºè °ÉZÄÄÑ ,ªªÀiÁxÀãð °ÉÆAçzÉ.

9) Limitations if any:

* F £ÉÁV@ÄUÀ¼À£ÀÄß GÿÀAiÉÆÄV,À®Ä 40 C±Àé±ÀQÛ ºÉÄÄ®ÀlÖ mÁæöâPÀÖgÀUÀ¼ÀÄ CªÀ±ÀâPÀªªVgÄÄvÀÛªª.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

10.

1) Title of technology: Tractor Operated Balram Plough

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:

6) Recommended practices/process:

* EzÀgÀ gÀZÀ£ÉAiÀÄÄ MAZÉÄ ¥sÉæÄ«Ä£À°è 5 vÁ½£À §®gÁªÀiiªÀiÁZÀjAiÀÄ £ÉÄV®ÄUÀ¼À£ÀÄß eÉÆÄr¹gÄÄvÁÛgÉ.

7) Intended outcome and expected results:

* EzÄÄ 18-20 ,ÉA. «ÄÄ. D¼ÄzÀªgÉUÉ °ÁUÀÆ 25-30 ,ÉA. «ÄÄ. (MAZÄÄ vÁ½UÉ) CUÀ®ªV G¼ÄÄªÉÄAiÀÄ£ÀÄßªÀiÁqÄÄvÁÛzÉ.

* F G¥ÀPÀgÀtzÀ PÉëÄvæ ,ªªÄxÀãªÄÄ 0.28 jAzÀ 0.32 °ÉPÉÖÄgi¥Àæw UÀAmÉUÉ.

8) Specific advantages:

* F G¥ÀPÀgÀtªÀ£ÀÄß J- Áè vÀgÀªzÀ °ÀUÀÄgÀªÄtÁUªAzÀ gÀZÀ£É-ÄgÀªª °ÉÆ®UÀ¼À°è G¥ÀAiÉÆÄV,À§ªÄzÄÄ.

* EzÀgÀ E£ÉÆBAZÄÄªÉ²µÄÖªÉAzÀgÉªÄtU£ÄÄß °ÉZÄÄÑ ,ÀÜ¼ÁAvj,ÄªªÄª®è.



9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

11.

1) Title of technology: Tractor operated chisel plough

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:

6) Recommended practices/process:

* EzÀjAzÀ ðÃgÀÄ EAUÀÄ«PÉ °ÁUÀÄ ,À,ÀâUÀ¼À "ÉÃgÀÄUÀ¼À "É¼ÀªÀtÂUÉUÉ ,À°ÁAiÀÄªÁUÀÄvÀÛzÉ.

7) Intended outcome and expected results:

* EzÀ£ÀÄß ,ÁªiÁ£ÀªªÁV 0.6 jAzÀ 0.9 «ÄÄ. D¼AzÀªªÁgÉUÉ "sÀÆ«ÄAiÀÄªªè H¼ÄªªªÀ PÉ® ,ªªÀ£ÀÄßªªiÁqÀ®Ä G¥ÀAiÉÆÄV ,ÄªvÁÛgÉ.

8) Specific advantages:



* F "sÀÆ«ÄAiÄÄ UÀnÖ M¼Ä¥AzÀgÀ£ÄÄß bÉÃç¹ ºÄÄtÚ£ÄÄß ,Àr@UÉÆÄ½,Ä@Ä agÀhÄ¯i
£ÉÄV@£ÄÄß G¥ÄAiÉÆÄV,ÄÄvÁÛgÉ.

9) Limitations if any:

* F G¥ÀPÀgÀtªÀ£ÄÄß G¥ÄAiÉÆÄV,ÄÄ 60 C±Àé±ÀQÛ ºÉÄÄ@àlÖ mÁæöâPÀÖgï
¯ÉÄPÁUÄÄvÀÛzÉ.

* F agÀhÄ¯i £ÉÄV@£ÄÄß ¥Äæw 1.0 jAzÀ 1.5 «ÄÄ. CAvÀgÀzÀºè ¥ÄæxÄÄªÄÄ
ªÄµÀðzsÁgÉAiÄiÁzÀ £ÄAvÀgÀ G½ªÉÄ ºÄiÁqÀ¯ÉÄPÄÄ.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

12.

1) Title of technology: Cultivators

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description: mÁæöâPÀÖgï ZÁºvÀ PÀºÖªÉÄlgïUÄ¼Äºè JgÀqÄÄ ¥ÄæPÁgÀUÄ½ªÉ
CªÄÅUÄ¼ÉAzÀgÉ :

- 1. ¯ÜgÀ mÉÉ£i PÀºÖªÉÄlgïUÄ¼ÄÄ (Rigid tyne Cultivator) ºÄÄvÄÄÛ
- 2. ¯çAUï mÉÉ£i PÀºÖªÉÄlgïUÄ¼ÄÄ (Spring tyne Cultivator).

6) Recommended practices/process:



* F GÿÀPÀgÀtªÀÀ 1.9 jAzÀ 2.0 «ÄÃlgï CUÀ® °ÁUÀÆ 0.5 «ÄÃlgï GzÀÝ EzÀÄÝ MAzÀÄ PÀ°ÖªÉÃlgï mÉÊËAzÀ E£ÉÆBAzÀPÉÌ ,ÄªªiÁgÀÄ 20 jAzÀ 22 ,ÉA.«ÄÄ. CAvÀgÀ«gÀÄvÀÛzÉ.

7) Intended outcome and expected results:

* F PÀ°ÖªÉÃlgïUÀ¼À PÉëÄvÀæ ,ÁªÄxÀãð 0.40 jAzÀ 0.42 °ÉPÉÖÃgï ÿÀæw UÀAmÉUÉ °ÉÆAçgÀÄvÀÛzÉ.

8) Specific advantages:

* EzÀÄ 5 jAzÀ 8 ,ÉA.«ÄÄ. D¼ÀªÁV G¼ÀÄªÉÄªªiÁqÀ®Ä GÿÀiÉÆÄV ,À§ªÄzÀÄ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

13.

1) Title of technology: Blade Harrow

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:

* F PÄÄAmÉUÀ¼À£ÄÄß ,ÁªiÁ£ÄªªÁV 35 C±Àé±ÀQÛªÉÄÄ®älÖ mÁæöªPÀÖgiUÀ½AzÀ £ÀqÉ ,À§ªÄzÀÄ.



4) Technology source/acknowledgements:

5) Technology description:

* F GYÀPÀgÀt^ÀÀ KPÀPÁ@zÀ`è ^ÀÀÆgÀÄ §UÉAiÀÄ G¼ÀÄ^ÉÄ PÉ®, ÀUÀ¼À£ÀÄß PÉÊUÉÆ¼ÀÄÄvÀÛzÉ. C^ÀÀUÀ¼ÀÄ^ÉAzÀgÉ

*°ÀgÀUÀÄ^À PÉ®, À,

*^ÀÄtÚ£ÀÄß ¥ÀÄr^ÀiÁr °ÉÆ@zÀ`ègÀÄ^ÀÀ PÀ, ÀPÀrØUÀ¼À£ÀÄß ¥ÀÄr ^ÀiÁr ^ÀÄtÂÚ£À eÉÆvÉ ,Éj, Ä^ÀÄzÀÄ °ÁUÀÆ

*^ÀÄtÚ£ÀÄß ,^ÀÄvÀmÁÖV ^ÀiÁr, CAw^ÀÄ^ÁV ©Äd ©vÀÄÛ^À °ÀAvÀPÉÌ °ÉÆ@UÀ¼À£ÀÄß vÀAiÀiÁgÀÄ ^ÀiÁqÀ§°ÀÄzÁVzÉ.

6) Recommended practices/process:

* F GYÀPÀgÀt^ÀÀ£ÀÄß mÁæöâPÀÖj£À !.n.M ±Áâ¥sÀÖçAzÀ wgÀÄV, À^ÁUÀÄvÀÛÛzÉ. ,^ÀÄiÁ£ÀÄ^ÁV mÁæöâPÀÖj£À !.n.M ±ÁâüÖ£À ^ÉÄUÀ 540 CxÀ^Á 1000 Dgì.!.J^Àiï (RPM) EgÀÄvÀÛzÉ. F ^ÉÄUÀPÉÌÀ C£ÀÄUÀÄt^ÁV gÉÆÄm^ÉÄlgÀUÀ¼À£ÀÄß DAiÉÄi^ÀiÁqÀ`ÉÄPÀÄ.

7) Intended outcome and expected results:

8) Specific advantages:

* EzÀjAzÀ mÁæöâPÀÖj£À EAzsÀ£À G¼vÁAiÀÄ, G¼ÀÄ^ÉÄAiÀÄ ,^ÀÄÄAiÀÄ °ÁUÀÄ PÉËÄvÀæ vÀAiÀiÁjPÉAiÀÄ ^ÉZÀÑ^À£ÀÄß PÀr^ÉÄ ^ÀiÁqÀ§°ÀÄzÀÄ.

9) Limitations if any:

* F GYÀPÀgÀtZÀ MAzÀÄ £ÀÆâ£ÀÄvÉ JAzÀgÉ §°À¼À^ÁV °ÁUÀÄ ðgÀAvÀgÀ^ÁV G¼ÀÄ^ÉÄUÉ G¥ÀAiÉÆÄV¼zÀgÉ ^ÀÄtÂÚ£À PÉ¼À¥ÀzÀgÀÄ UÀnÖAiÀiÁUÀÄ^À ,ÁzsÀävÉ EgÀÄvÀÛzÉ.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

15.

1) Title of technology: Disc Harrows

2) Category classification: Farm Machineries and Implements

3) Year of release:



4) Technology source/acknowledgements:

5) Technology description: F PÄÄAmÉAiÄÄ PÄAiÄÄð°ÉÊPÀjAiÄÄÄ ZÄ°,ÄÄªÄ çQIUÉ MgÉAiÄiÁV EgÄÄvÄÛzÉ °ÁUÄÄ r¹Ï£Ä çAr£Ä PÉÆÄ£ÄªÄ£ÄÄß 40° jAzÄ 45° UÉ °ÉÆAç¹gÄÄvÁÛgÉ. ªÄÄÄÄ·sÁUÄzÄ r,ÄÏ çAqÄÄ °ÁUÄÆ »A·sÁUÄzÄ r,ÄÏ çAqÄÄUÄ¼Ä ªÉÄÄ-É MAzÄgÄ »AzÉ ªÄÄvÉÆÛAzÄÄ «gÄÄzÄP©ü ªÄÄÄRªÁV r,ÄÏ vÄmÉÖUÄ¼Ä£ÄÄß °ÉÆAç¹gÄÄvÁÛgÉ.

6) Recommended practices/process:

* F r,ÄÏ GÏÄPÄgÄtUÄ¼Ä£ÄÄß ¹AUÄ-ÿ AiÄiÁPÄæfi (Single action) ªÄÄvÄÄÛ qÄ§-ÿ AiÄiÁPÄæfi (Double action) PÄÄAmÉUÄ¼ÄÄ JAzÄÄ «AUÄr,Ä-ÁVzÉ.

7) Intended outcome and expected results:

** F GÏÄPÄgÄtªÄÄ CAzÄdÄ 250-275 PÉ.f vÄÆPÄ °ÉÆAçgÄÄvÄÛzÉ °ÁUÄÄ EzÄ£ÄÄß £ÄqÉ,Ä®Ä 35 QIAvÄ °ÉZÄÄÑ C±Äé±ÄQÛ °ÉÆAçgÄÄªÄ mÁæöâPÄÖgi£Ä CªÄ±Äª«gÄÄvÄÛzÉ.

8) Specific advantages:

* F GÏÄPÄgÄtªÄÄ çéwÄAiÄÄ G¼ÄÄªÉÄ GÏÄPÄgÄtªÄVzÄÄÝ EzÄ£ÄÄß ªÄÄtÄÛ ÏÄÄr ªÄiÁqÄ®Ä GÏÄAiÉÆÄV,ÄÄvÁÛgÉ

*·ÉÄj£Ä PÄÄ¼ÉUÄ¼Ä£ÄÄß QvÄÄÛ°ÁPÄ®Ä GÏÄAiÉÆÄV,ÄÄvÁÛgÉ.

* r¹Ï£Ä ZÄÆÏAzÄ ªÄÄÄRçAzÄ ·ÉÄgÄÄUÄ¼Ä£ÄÄß PÄvÄÛj¹ ªÄÄtÄÛ£ÉÆ¼ÄUÉ PÄÆr,Ä®Ä C£ÄÄPÄÆ®ªÁUÄÄvÄÛªÉ.

* F GÏÄPÄgÄtªÄÄ E£ÉÆßAzÄÄ ªÉÊ²µÄªÖªAzÄgÉ vÉÆÄIUÄ¼Äªè VqÄUÄAmÉUÄ¼Ä£ÄÄß ªÄÄtÄÛ£Äªè,ÉÄj,Ä®Ä GÏÄAiÉÆÄV,ÄÄvÁÛgÉ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

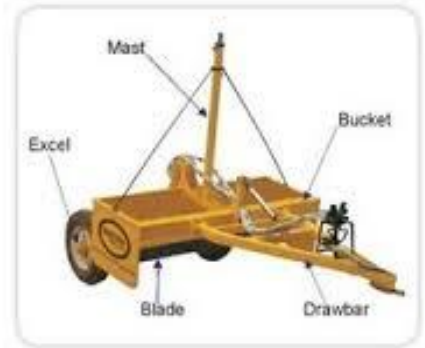
16.

1) Title of technology: **mÁæöâPÀÖgî ZÁ°vÀ -ÉÃ,Àgî -Éª]**

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:



5) Technology description: mÁæöâPÀÖgî ZÁ°vÀ -ÉÃ,Àgî -ÉªÉ®ègî£À°è ªÀÄtÄÚ J¼ÉAiÀÄªªÀ §gÀr 2-3 «ÄÄ GzÀÝ«zÀÄÝ °ÉÉqÀæ°Pî gÁªªÀÄÜÉ eÉÆÄr¹ J¼ÉAiÀÄªªÀ-ÁUÀÄvÀÛzÉ. -ÉÃ,Àgî QgÀtUÀ¼À£ÀÄß °ÉÆgÀ,ÀÆ,ÀÄªªÀ ªzsÀ£ÀªÀ£ÀÄß wæ¥Áç (ªÄÆgÀª PÁ°£À ªÄÄtÄAiÀÄ) ªÉÄÄ-É ¢è¹ QgÀtUÀ¼À£ÀÄß £ÉÄgÀªV °ÉÆgÀ°ÉÆªªÄªªAvÉ ªAiÁqÀ-ÁUÀÄvÀÛzÉ. F QgÀtUÀ¼ÀÄ ªÄªAiÁgÀª 700 «ÄÄ zÀÆgÀzªªgÉÜÉ ZÀzÀÄgÀÄvÀÛÉ. -ÉÃ,Àgî QgÀtUÀ¼À£ÀÄß ¥ÀqÉAiÀÄªªÀ ªzsÀ£À (j¹ªªgî) ªÄ ªÉÄgÉ ªÉÄgÉ çPÀÄÛUÀ½AzÀ §AzÀ -ÉÃ,Àgî QgÀtUÀ¼À£ÀÄß ¥ÀqÉzÀª ¢AiÀÄAvÀæt ¥ÉmÉÖÜÉÜÉ gÀªª,ÀÄvÀÛzÉ.

6) Recommended practices/process: j¹ªªgÀ£ÀÄß ªÄÄtÄÚ J¼ÉAiÀÄªªÀ §gÀrUÉ eÉÆÄr¹zÀ PÀA\$PÉÌ C¼ªªÀr,À-ÁVgÀÄvÀÛzÉ. E°ègÀªªª ¢AiÀÄAvÀæt ªªªª,ÉÜAiÀÄªª ªsÀÆ«Ä-ªAzÀ §gÀqÉÜÉ EgÀªªª JvÀÛgÀªª£ÀÄß ¢AiÀÄAwæ,ÀÄvÀÛzÉ. F JvÀÛgÀªª£ÀÄß ªéAiÀÄª °ÉZÀÄÑ PÀrªÉª ªAiÁr JvÀÛgÀzÀ ¥ÀæzÉªª±ÀçAzÀ ªÄÄtÜ£ÀÄß vÀÄA©PÉÆAqÀª vÀUÀÄÏ ¥ÀæzÉªª±ÀzÀ°è °ÀgÀqÀÄvÀÛzÉ. ¢AiÀÄAvÀæt ¥ÉnÖÜÉAiÀÄªª ªAPÉªvÀUÀ¼À£ÀÄß j¹ªªgÀªªzÀ ¥ÀqÉzÀª, ªA,Àj¹ªªÄtÄÚ J¼ÉAiÀÄªªªª §gÀr JµÀÄÖ JvÀÛgÀzÀ°èzÉ JAzÀª vÉÆÄj,ÀÄvÀÛzÉ.

7) Intended outcome and expected results:

8) Specific advantages:

- *ªsÀÆ«ÄAiÀÄ£ÀÄß -ÉÃ,Àgî vÀAvÀæeÁÖ£ÀçAzÀ -ÉªÉ-ªªAiÁrzÀ ªÉÄÄ-É ¢ÄgÀª GtÁ,À®Ä ªtÚ ªtÚ ªÄÄrUÀ¼À §zÀ-ÁV zÉÆqÀØ ªÄÄrUÀ¼À£ÀÄß ªAiÁqÀªªzÀjAzsÀ ªUÀÄªª½UÉ °ÉZÀÄÑ PÉèÄvÀæ ®ªªªªªUÀÄvÀÛzÉ.
- *-ÉÃ,Àgî -Éªªª°AUª¥ÄzÀÝwAiÀÄ£ÀÄß C¼ªªÀr¹PÉÆAqÀ°è PÀrªÉª ¢Äj£À ¥ÀæªAiÁt §¼ÁPÉ-ªAzÀ PÁ®ªªÉAiÀÄ PÉÆ£ÉAiÀÄ gÉÉvÀjUÀÆ ¢ÄgÀ£ÀÄß MzÀV,À§ªªzÀ.
- *ª,Àª ¥ÉÆªª±ÀPÁªªUÀ¼À ªzÀª¼ÁPÉ, ªªªªªªPÀðPÀ PÀ¼É ¢AiÀÄAvÀæt °ÁUÀÆ °ÉÄÑ£À GvÀzÀ£É ¥ÀqÉzÀªPÉÆ¼Àªªªª

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

17.

1) Title of technology: **mÁæöåPÀÖgi ZÁ°vÀ jdÓgi**

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:



6) Recommended practices/process:

EzÀjAzÀ °ÉÆÃzÀÄ ªÄvÄÄÛ KgÄÄªÄÄr ªÄiÁqÀ§°ÄÄzÄÄ.

7) Intended outcome and expected results:

*EzÀ£ÄÄß §¼Ä¹ ¥Äæw UÄAmÉUÉ 0.40 °É. ¥ÄæzÉÄ±ÄªÄ£ÄÄß G¼ÄÄªÉÄ ªÄiÁqÀ§°ÄÄzÄÄ.

8) Specific advantages:

* EzÀjAzÀ °ÉÆÃzÀÄ ªÄvÄÄÛ KgÄÄªÄÄr ªÄiÁqÀ§°ÄÄzÄÄ.

* EzÀ£ÄÄß §¼Ä¹ ¥Äæw UÄAmÉUÉ 0.40 °É. ¥ÄæzÉÄ±ÄªÄ£ÄÄß G¼ÄÄªÉÄ ªÄiÁqÀ§°ÄÄzÄÄ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

18.

1) Title of technology: **μάχαιρα Πάογι Ζάοvά Ψάε'ÖPì °ÉÆçPÉ °A**

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:

F GΨÀPÀgÀtçAzÀ 20 jAzÀ 30 °ÉÄÊPÁæfi zÀΨÀàVξÀ Ψάε'ÖPì °Á¼ÉAiÀÄ£ÀÄß °ÉÆçPÉ °ÁPÀ§°ÄÄzÄÄ.



6) Recommended practices/process:

7) Intended outcome and expected results:

* F AiÀÄAvÀæçAzÀ Ψάæw UÀAmÉUÉ 0.30 °ÉPÉÖÃgi ΨάæzÉÄ±ÀPÉì Ψάε'ÖPì °ÉÆçPÉ °ÁPÀ§°ÄÄzÄÄ.

8) Specific advantages:

*Ψάε'ÖPì °ÉÆçPÉ °ÁPÀÄªAzÀjAzÀ ϰÃgÄÄ D«AiÀiÁUÄÄªÀ ΨάæªAiÁt PÀrªÉÄAiÀiÁV, UÉÆ§âgªÀÀ£ÄÄß , ÀjAiÀiÁzÀ ΨάæªAiÁtzÀ°è °É¼ÉUÀ¼ÄÄ »ÃjPÉÆ¼ÄÄªªÀª.

* PÀ¼ÉAiÀÄ£ÄÄß °É¼ÉAiÀÄzÉ EgÄªªªAzÀjAzÀ PÀ¼ÉUÀ¼ÄÄ ϰAiÀÄAwæ, ÄªªÀ CªÀ±ÀâPÀvÉ EgÄªªªÄªç®è.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

19.

1) Title of technology: **mÁÛöâPÀÖgï ZÁ°vÀ UÄÄArUÄ¼Ä¼ GYÄPÀgÀt**

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:

F GYÄPÀgÀtªÄÄ mÁæöâPÀÖgï !,n.N. ±ÁYsiÖ °ÁUÀÆ 3- ¥Á¬ÄÄI °APÉÄei£À ,°ÁAiÄÄçAzÀ PÁAiÄÄð ¢ªÀð»,ÄÄvÀÛzÉ.

6) Recommended practices/process:

F GYÄPÀgÀtçAzÀ 200 «Ä.«ÄÄ. ¢AzÀ 300 «Ä.«ÄÄ.£À ªÁÄ,ÄzÀ UÄÄArUÄ¼Ä£ÄÄß vÉUÉAiÄÄ§°ÄÄzÄÄ.

7) Intended outcome and expected results:

* mÁæöâPÀÖgï£À ,ÁªÄÄxÄäð ªÄÄvÄÄÛ DUÀgï£À C¼ÄvÉUÀ£ÄÄUÄÄtªÁV ¥Äæw UÄAmÉUÉ ,ÄÄªAiÁgÄÄ 12 jAzÀ 15 UÄÄArUÄ¼Ä£ÄÄß vÉUÉAiÄÄ§°ÄÄzÄÄ.

8) Specific advantages:

* F GYÄPÀgÀtªÄÄ ,°ÁAiÄÄçAzÀ ªÁ¼É £Án ªAiÁqÀ®Ä UÄÄArUÄ¼Ä£ÄÄß °ÁUÀÆ zÁæQè ZÄYÀgÀPÉÌ UÄÄArUÄ¼Ä£ÄÄß vÉUÉAiÄÄ®Ä GYÄAiÉÆÄV,À¬ÁUÄÄvÀÛzÉ.



8) Specific advantages:

* °ÀtÂÚ£À VqÀUÀ¼ÁzÀ ªÀiÁªÀÀ, aPÀÄÌ, ªÀÄvÀÄÛ vÉÆÃÏÀnÖ ªÉ¼ÉUÀ½UÉ F GÏÀPÀgÀt ,ÀÆPÀÛªÁVzÉ.

9) Limitations if any:

F GÏÀPÀgÀtªÀÀ£ÀÄß GÏÀAiÉÆÃV,À®Ä 55 °ÉZi.!.VAvÀ ªÉÄÃ®àlÖ mÁæöâPÀÖgiUÀ¼À£ÀÄß §¼À,À- ÁUÀÄvÀÛzÉ.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

21.

1) Title of technology: qÀæªÀü ¹ÃqÀgi

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:

* F GÏÀPÀgÀt FgÀÄ½Û ªÉ¼ÉUÀ¼À°è §¼À,À§°ÀÄzÁVzÀÄÝ ªÀiÁ£ÀªÀ °ÁUÀÆ JvÀÄÛUÀ¼À ,À°ÁAiÀÄçAzÀ ZÁ°vÀªÁVzÉ.

* 10 Q. UÀæA vÀÆPÀ«zÉ.

6) Recommended practices/process:



7) Intended outcome and expected results:

* EzÀgÀ ,ÁÀÄxÀð ¥Àæw çfÀPÉÌ ,ÄÀÀiÁgÀÄ 1.00 °ÉÃPÀÖgi ¥ÀæzÉÃ±À £Án^aÀiÁqÀ§°ÀÄzÁVzÉ.

8) Specific advantages:

* F G¥ÀPÀgÀtzÀ G¥ÀAiÉÆÄUÀçAzÀ ,À¹UÀ¼À ,ÁAzÀævÉ
¤AiÀÄAwæ ,À§°ÀÄzÀÄ^aÄvÄÄÛ ©ÃdUÀ¼À ¥Àæ^aÀiÁt^aÀ£ÀÄß ,À°À
vÀVÎ ,À§°ÀÄzÁVzÉ.

9) Limitations if any:

F G¥ÀPÀgÀt FgÀÄ½î °É¼ÉUÀ¼À°è §¼À ,À§°ÀÄzÀÄ.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

22.

1) Title of technology: mÁæöâPÀÖgi ZÁ°vÀ £Án^aÀiÁ

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:

F AiÀÄAvÀæzÀ ,À°ÁAiÀÄçAzÀ 1.20 «ÄÃ. CUÀ®zÀ °ÁUÀÆ 15 ,ÉA.«ÄÃ.
JvÀÛgÀzÀ KgÀÄ^aÄr^aÀiÁqÀ§°ÀÄzÀÄ.



6) Recommended practices/process:

vÀgÀPÁjAiÀÄ ,À¹ ´É¼ÉçgÀÄªÀ mÉæÃAiÀÄ£ÀÄß mÉæÃ ,ÁÖöâAr£À°è
EqÀ´ÉÃPÀÄ. ¥ÀAZi «íÃ¬i ¢AzÀªÀiÁrgÀÄªÀ ¥ÀAZi/UÀÄArUÀ¼À°è PÉÊ¬ÄAzÀ
,À¹UÀ¼À£ÀÄß °ÁPÀ´ÉÃPÀÄ. ,À¹UÀ¼À £ÀqÀÄ«£À CAvÀgÀªÀ£ÀÄß 30, 45
CxÀªÀ 60 ,ÉA.«ÄÃ.£À°è C¼ÀªÀr,À§°ÀÄzÀÄ.

7) Intended outcome and expected results:

F AiÀÄAvÀæªÀ ¥Àæw UÀAmÉUÉ 1.3 Q.«ÄÃ. ¢AzÀ 1.6 Q.«ÄÃ.ªÉÃUÀzÀ°è
ZÀ° ,ÄvÀÛzÉªÀÄvÀÄÛ CzÀgÀ PÉëAvÀæ ,ÁªÀÄxÀãªÀ ¥Àæw UÀAmÉUÉÉ
0.12–0.16 °ÉPÉÖÃgi EgÀÄvÀÛzÉ.

8) Specific advantages:

£ÁnªÀiÁqÀÄªÀ G¥ÀPÀgÀtzÀ ,À°ÁAiÀÄçAzÀªÉÄt¹£ÀPÁ¬Ä, zÉÆtÚ
ªÉÄt¹£ÀPÁ¬Ä, mÉÆªÀiÁãmÉÆ, J´ÉPÉÆÃ,ÄªÀªvÀÄÛ §zÀ£É ,À¹UÀ¼À £Án
ªÀiÁqÀ§°ÀÄzÀÄ. AiÀÄAvÀæzÀ ,À°ÁAiÀÄçAzÀ D®ÆUÀqÉØ, UÁèrAiÉÆÃ®,i
ªÀvÀÄÛ ,ÄUÀAzsÀgÀd UÀqÉØUÀ¼À £ÁnªÀiÁqÀ§°ÀÄzÀÄ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

23.

1) Title of technology: ¥ÀªÀn®ègÀ ZÁ°vÀ KQìAiÀÄ¬i ¥sÉÆèÃ ¥ÀA¥i

2) Category classification: Farm Machineries and Implements

3) Year of release:



4) Technology source/acknowledgements:

5) Technology description:

F GÿÀPÀgÀt^aÀÀ ÿÀ^aÀgì n®èj£À ,À°ÁAiÀÄçAzÀ ZÀ° ,ÀÄvÀÛzÉ.

6) Recommended practices/process:

EzÀgÀ vÀÆPÀ^aÀÀ 26 Q.UÁæA £À¶ÖzÉ.

7) Intended outcome and expected results:

F GÿÀPÀgÀtzÀ 3.00 «ÄÃ. D¼ÀçAzÀ ÿÀæw µ«ÄµÀPÉÌ ,ÀÄ^aÀiÁgÀÄ 2500 °Ãgì µÃgÀ£ÀÄß ^aÉÄÃ-ÉvÀÛ§°ÀÄzÀÄ.

8) Specific advantages:

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

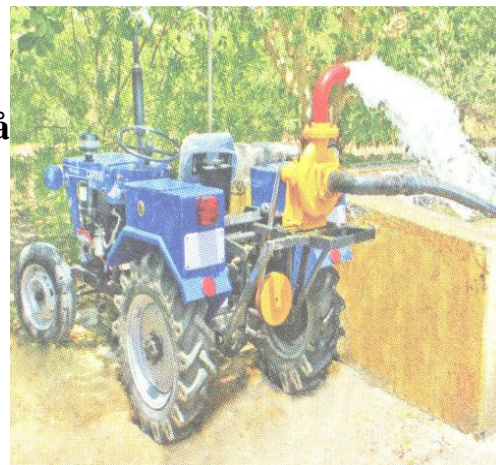
- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

24.

1) Title of technology: mÁæöåPÀÖgì ZÁ°vÀ ,ÉAlæÿsÀÄå

2) Category classification: Farm Machineries and Implements

3) Year of release:



4) Technology source/acknowledgements:

5) Technology description:

F GÿÀPÀgÀt^aÀÅ mÁæöåPÀÖgÀ£À !.n.M. ,À°ÁAiÀÄçAzÀ PÁAiÀÄð^aÀð»,ÀÄvÀÛzÉ.

6) Recommended practices/process:

,ÉPÀi£i ¥ÉÉ¥ÀÄ 2.5 jAzÀ 3.0 EAZÀÄ ^aÁå,À«zÀÄÝ ^aÄvÀÄÛ qÉ^{oa}Àj ¥ÉÉ¥ÀÄ 2.5 EAZÀÄ ^aÁå,ÀzÀ «£Áå,ÀzÀ^oè zÉÆgÉAiÀÄÄvÀÛzÉ

7) Intended outcome and expected results:

,ÄÄ^aÀiÁgÀÄ ¥Àæw ,ÉPÉArUÉ 9 jAzÀ 49 °Álgi ðÄgÀÄ °ÉÆgÀ °ÁPÀÄ^aÀ ,Á^aÄÄxÀâð °ÉÆAçgÀÄvÀÛzÉ.

8) Specific advantages:

MIÄÖ 21 jAzÀ 29 «ÄÄ D^{1/4}ÀçAzÀ ðÄgÀ£ÀÄß ^aÉÄÄ⁻ÉvÀÛ§^oÄÄzÀÄ.

9) Limitations if any:

F¥ÀÄ¥À£ÀÄß 35-45 JZi. !. mÁæöåPÀÖgÀ£À ,À°ÁAiÀÄçAzÀ ZÀ^o,ÀÄ§^oÄÄzÀÄ.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

1) Title of technology: **ᵛÄÄvÄÄgÄ °Äᵛ ᵛÄgÄÄj ᵛÄzÄᵛw °ÄUÄÆ GᵛÄPÄgÄtUÄ¼ÄÄ**

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:



5) Technology description:

ᵛÄÄvÄÄgÄ °Äᵛ ᵛÄgÄÄj ᵛÄzÄᵛwAiÄÄ°è ᵛÄgÄÄÄÄᵛ ᵛÄÄvÄÄgÄ °Äᵛ gÄÆᵛÄzÄ°è °É¼ÉUÄ½UÉ PÉÆqÄ§°ÄÄzÄÄ.

6) Recommended practices/process:

EzÄÄ £ÉÊ, ÄVØPÄ °ÄÄ¼É gÄÆᵛÄzÄ°è VqÄUÄ½UÉ ᵛÄgÄÄ PÉÆIÖAvÉ DUÄÄvÄÛzÉ. F ᵛÄzÄᵛwAiÄÄÄÄÄÄ C¼Ä°ÄÄr, Ä®Ä, Ä°ÄÄvÄmÄÖzÄ °sÄÆ«ÄAiÄÄ C°Ä±ÄâPÄvÉ EgÄÄ°ÄÄç®è,

7) Intended outcome and expected results:

PÄÆ° PÄ«ÄðPÄgÄ °ÉZÄÑ°ÄÄÄÄᵛ PÄr°ÉÄ °ÄiÄqÄ§°ÄÄzÄVzÉ

8) Specific advantages:

- * EzÄÄ UÄÄqÄÄØUÄqÄÄ ᵛÄæzÉÄ±ÄzÄ°è nÄ, PÄüÄ °ÄÄÄvÄzÄ °É¼ÉUÄ½UÉ, ÄÆPÄÛ°ÄVzÉ
- * ÄÄᵛÄæzÄÄPÄ ᵛÄgÄÄj ᵛÄzÄᵛwUÉ °ÉÆÄ°zÄgÉ, °ÄÄtÄUÉÄ Ä°ÄPÄ½AiÄÄÄÄÄᵛ ᵛÄiÄÄAwæ, Ä§°ÄÄzÄÄ.

9) Limitations if any:

F ᵛÄzÄᵛwAiÄÄÄÄÄÄ UÄ½AiÄÄ °ÉÄUÄ 15 Q. «ÄÄ ᵛÄæw WÄAmÉVAvÄ PÄr°ÉÄ EgÄÄ°ÄÄUÄ §¼Ä, Ä°ÉÄPÄÄ

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

27.

1) Title of technology: **mÁæöäPÀÖgï ZÁ°vÀ UÉÆ§âgÀ °ÀgÀqÄÄªÀ G¥ÀPÀgÀt**

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:

F G¥ÀPÀgÀtªÀ mÁæöäPÀÖj£À ±ÀQÛAiÄÄ ,À°ÁAiÄÄçAzÀ ZÀ° ,ÄÄvÀÛzÉ.

6) Recommended practices/process:

7) Intended outcome and expected results:

EzÀgÀ PÉëÃvÀæ ,ÁªÄÄxÀðªÀ ¥Àæw WÄÄAmÉUÉ 0.6 jAzÀ 1.0 °ÉPÉÖÃgï EgÄÄvÀÛzÉ.

8) Specific advantages:

F G¥ÀPÀgÀtAzÀ ,À°ÁAiÄÄçAzÀ UÉÆ§âgÀªÀ£ÄÄß FgÄÄ½îªÀÄÄvÄÄÛ EvÀgÀ vÀgÀPÁj ·É¼ÉUÀ½UÉ °ÁPÀ§ªÄÄzÄÄ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

iii. Others, if any:

29.

1) Title of technology: **PEÉ ZÁ°vÀ PÀ¼É vÉUÉAiÀÄÄª**

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:

F ÁzsÀ£ÀçAzÀ ªÉÄÄ@àzÀgAzÀ°è ªÉÄgÄÄ ©qÄÄªÀ Á®ÄUÀ¼Ä°è ªÉ¼ÉçgÄÄªÀ PÀ¼ÉUÀ¼Ä£ÄÄß vÉUÉAiÀÄÄ§°ÄÄzÄÄ °ÁUÀÆ EzÀ£ÄÄß DgªÄÄzÁAiÀÄPÀªÁV PÁAiÀÄÄðªÄð» ÄÄªÄAvÉ «£ÁªÄUÉÆ½ÄªÁVzÉ.



6) Recommended practices/process:

F ÁzsÀ£ÀªÄð°ÄuÉUÉ M§ªªÄÄ£ÄÄµÄª ªÉÄPÁUÄÄvÁÛÉÉ.

7) Intended outcome and expected results:

EzÀgÀ PÉëÄvÄæ ÁªÄÄxÄªðªÄª ¥Äæw UÄAmÉUÉ 0.05 °ÉPÉÖÄgi EgÄÄvÄÛzÉ.

8) Specific advantages:

EzÄÄ MªÉÄ ÁAiÄÄªÄÄvÄÄÛ vÉÆÄªÄÄUÀ¼Ä ªÉ¼ÉUÀ½UÉ ÄÆPÄÛªÁVzÉªÄÄvÄÄÛªÄÄtÄU£Ä vÉÄªÄª±Ä±ÉÄ. 8 jAzÀ 10 gÄ°è GvÄÛªÄªªÁV PÁAiÄÄðªÄð» ÄÄvÄÛzÉ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

30.

1) Title of technology: "ÉÊ¹PÀ-ï PÀ¼É ¼AiÀÄAwæPÀ

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:

F ,ÁzsÀ£ÀÀÀ ªAiÁ£ÀÀ ZÁ°vÀÁVzÀÄÝ, "ÉÊ¹PÀ-ï£À "sÁUÀUÀ¼À£ÀÄß G¥ÀAiÉÆÄV¹ EzÀ£ÀÄß vÀAiÀiÁj,À-ÁVzÉ.



6) Recommended practices/process:

EzÀgÀ ªÄÄRå "sÁUÀUÀ¼ÉAzÀgÉ "ÉÊ¹PÀ-ï ZÀPÀæ, °ÁåAqÀ-ï ªÄvÀÄÛ PÀ¼É ¼AiÀÄAvÀæPÀ ,ÁzsÀ£ÀÀ£ÀÄß M¼ÀUÉÆArgÀÄvÀÛzÉ. ZÀ°,À®Ä ,ÄÄ®"sÀÁVzÀÄÝ vÀgÀPÁj °ÁUÀÆ °ÀÆ«£À "É¼ÉUÀ½UÉ ,ÀÆPÀÛªÁVzÉ. F ,ÁzsÀ£ÀÀÀ 3 jAzÀ 5 ,ÉA. «ÄÄ D¼ÀzÀ°è ZÀ°,ÄÄvÀÛzÉ.

7) Intended outcome and expected results:

PÉëÄvÀæ ,ÁÄÄxÀðªÀÀ ¥Àæw WÀAmÉUÉ 0.07 jAzÀ 0.10 °ÉPÉÖÄgi EgÀÄvÀÛzÉ.

8) Specific advantages:

F_{1/2}vÁAiÀÄ^aÀiÁqÀ§°ÄÄzÄÄ (,ÁA¥ÄæzÄ-ÄPÀ ¥ÄzÀPwUÉ °ÉÆÄ°₁zÁUÀ)

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

31.

1) Title of technology: mÁæöâPÀÖgi ZÁ°vÀ KgÄÄ^aÄÄ

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:

mÁæöâPÀÖgi ZÁ°vÀ KgÄÄ^aÄÄr PÀ¼É æAiÄÄAvÀæPÀ£ÄÄß °ÉÄt¹£ÄPÁ-Ä^aÄÄvÄÄÛ EvÀgÉ vÀgÄPÁj °É¼ÉUÀ¼À°è PÀ¼É æAiÄÄAwæ,Ä®Ä C©ü^aÀÈçPUEÆ½,Ä-ÁVzÉ.

6) Recommended practices/process:

7) Intended outcome and expected results:

PÀ¼É æAiÄÄAvÀæPÄzÀ PÉëÄvÄæ ,ÁÄÄxÄäð ¥Äæw UÀAmÉUÉ 0.20 °ÉPÉÖÄgi EgÄÄvÄÛzÉ.

8) Specific advantages:



EzÄÄ ·ÉÆÃzÄÄ ªÄÄvÄÄÛ ,Á°£Ä ªÄÄzsÄÄzÄ°ègÄÄªÄ PÄ¼ÉUÄ¼Ä£ÄÄß QÄ¼ÄÄvÄÄÛzÉ

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

32.

1) Title of technology:

mÁæöäPÄÖgï ZÄ°vÄ §°ÄÄ ,Á®Ä gÉÆÃlj PÄ¼É ¢AiÄÄAvÄæPÄ G¥ÄPÄgÄt

2) Category classification:

Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:



5) Technology description:

PÄ¼É ¢AiÄÄAvÄæPÄªÄ£ÄÄß JgÄqÄÄ ,Á®ÄUÄ¼Ä ªÄÄzsÄÄzÄ°è ·É¼ÉçgÄÄªÄ PÄ¼É ¢AiÄÄAwæ,Ä®Ä ªÄÄvÄÄÛ CÄvÄgï ·ÉÃ,ÁAiÄÄ ªÄiÁqÄ®Ä G¥ÄAiÉÆÄV-ÁUÄÄvÄÄÛzÉ.

6) Recommended practices/process:

7) Intended outcome and expected results:

ΓΥΠΡΑΠΟΓΑΤΖΑ ΠΑΙΑΙΔΩΝ ΠΑΡΕΜΒΕΣΕΩΣ ±Ε.71, ΠΕΕΑΒΑΕ, ΑΑΧΑΔ ΞΑΕW €ΠΑΡΕΙ 2.0
°ΕΠΕÖÃgi EgΑΑvΑÛzÉ.

8) Specific advantages:

ΠΑ¼É ρΑΙΑΑΑvΑæt ΑΑvΑÛ ΑΑtΑÚ£Α KgΑΑ ΑΑrΑΙΑΑ£ΑΑΒ MAzÉÃ
ΑΑΑΙΑΑzÀè ΑiÁqÀ§°ΑzΑ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

33.

1) Title of technology: ΟμΑçü ΑΨΑgΑuÉ

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:

ΑiÁgΑΠΑmÉÖΑΙΑ°è vÁgΑΠΑj Ε¼ΕUÀ½UÉ ΑΑΠΑÛΑzÀ ««zsÀ
ΑiÁzÀjΑΙΑ ΟμΑçü ΑΨΑgΑuΑ ΓΥΠΡΑΠΟΓΑΤΖΑ¼ΑΑ ©sΑå«ΑÉ. ΑΑiÁ£ΑåΑV
ΑiÁ£ΑΑ ZÁ°vÀ £ΑΨi,ÉåPi ΕαçΑΙΑΑgi£ΑΑΒ vÁgΑΠΑj Ε¼ΕUÀ¼Α°è
ΓΥΑΙΑiÉÆΑV,ΑΑvΑÛgÉ



6) Recommended practices/process:

7) Intended outcome and expected results:

„Á^aÀiÁ£Àã^aÁV F „ÉàçÃAiÀÄgiUÀ¼À PÉëÃvÀæ „Á^aÀÄxÀãð^aÀÅ ¥Àæw ç£ÀPÉÌ
0.20 jAzÀ 0.40 °ÉPÉÖÃgi EgÀÄvÀÛzÉ.

8) Specific advantages:

PÁ®Ä ZÁ^ovÀ gÁPÀgi „ÉàçÃAiÀÄgi£ÀÄß °ÀtÂÚ£À ·É¼ÉUÀ½UÉ
G¥ÀAiÉÆÄV „ÄvÁÛgÉ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

34.

1) Title of technology: „Á^alj ZÁ^ovÀ £Áã¥i „ÁpPi „ÉàçÃAiÀ

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:



F GÏÀPÀgÀt^ÀÀ òÁàlj ZÁ°vÀ^ÁVzÀÄÝ 6 ^ÉÇÃ@Ö£À jZÁeÉð§-i òÁàljAiÀÄ
_°ÁAiÀÄçAzÀ PÁAiÀÄðªÀð»_ÄÄvÀÛzÉ.

6) Recommended practices/process:

EzÀgÀ vÀÆPÀ^ÀÄ _ÄÄ^ÀiÁgÀÄ 17 Q. UÁæA

7) Intended outcome and expected results:

PÉëÃvÀæ _Á^ÄÄxÀð^ÀÄ ÷Àæw ç£ÀPÉÌ 0.50 °ÉÃPÀÖgi ÷ÀæzÉÃ±ÀzÀ°è eËµÀçü
¹AÏÀgÀuÉ ^ÀiÁqÀ§°ÄÄzÁVzÉ.

8) Specific advantages:

EzÀÄ vÀgÀPÁj òÉ¼ÉUÀ½UÉ °ÉZÀÄÑ _ÀÆPÀÛ^ÁVzÉ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

35.

1) Title of technology: òÁàlj ZÁ°vÀ £ÀÆª^ÀiÁnPi ^PI

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:



5) Technology description:

„ÄÄ®“sÄÁV ZÄ°Ä®Ä qÄ§-i DâQÖAUi |,ÄÖfi£Ä£ÄÄß C¼ÄªÄr,Ä-ÁVzÉ. ÄÄÆ® ¹PÉÄZÄgi GzÄÝ 26 ,ÉA.«ÄÄ. ÄÄvÄÄÛ 685 UÁæA. vÄÆPÄçÝgÄÄvÄÛzÉ. ÄÄgÉ ÄÄgÉ JvÄÛgÄUÄ½UÉ ZÁltÄ ÄÄiÁqÄ®Ä 60 ,ÉA.«ÄÄ. CxÄªÄ 120 ,ÉA.«ÄÄ. CxÄªÄ 150 ,ÉA.«ÄÄ. C¼ÄvÉÄiÄÄ «,ÄÛgÄuÁ PÄÄ©ÄiÄÄ£ÄÄß C¼ÄªÄr,Ä§°ÄÄzÄÄ.

6) Recommended practices/process:

ÄÄlj ZÁ°vÄ ¹PÉÄZÄgi£Ä PÄvÄÛj,ÄÄªÄ ,ÄªÄxÄäð 30 «ÄÄ.«ÄÄ. ÄÄvÄÄÛ vÄÆPÄ ,ÄÄªÄiÁgÄÄ 820 UÁæA. ÄÄlj C¼ÄªÄr¹gÄÄªÄ ¥ÄÁPi ,ÄÄªÄiÁgÄÄ 1.8 PÉ.f. vÄÆPÄ«zÄÄÝ ÄÄvÄÄÛ PÄÄiÄÄðªÄð°ÄuÁ ,ÄPÄÆäðmi£ÄÄß M¼ÄUÉÆÄrgÄÄvÄÛzÉ.

7) Intended outcome and expected results:

F ÄÄljÄiÄÄÄ 44:4 ÄÉÇÄ-ïÖ÷i, ÄgÄ,Äj ±ÄQÛ 150 ÄÄmiï, MAzÄÄ vÄ¹UÉ £Ä®ÄÏ DÄA¥Ägi ÄÄvÄÄÛ MAzÄÄ ç£ÄzÄ PÄÄiÄÄðªÄð°Ät ,ÄªÄxÄäð °ÉÆAçgÄÄvÄÛzÉ. ÄÄlj ZÁdð DUÄ®Ä ,ÄÄªÄiÁgÄÄ 5 UÄAmÉ ,ÄªÄÄiÄÄ ÄÄPÄUÄÄvÄÛzÉ.

8) Specific advantages:

- * EzÄ£ÄÄß ÄÄiÁªÄªÄzÉÄ jÄwÄiÄÄ ZÁltÄUÉ G¥ÄÄiÉÆÄV,Ä§°ÄÄzÄÄ.
- * £ÄÆªÄÄiÁnPi ¹PÉÄZÄgi ,ÄÄ®“sÄÁV ,ÄV,Ä§®è 7 PÉ.f./ZÄ,ÉA.«ÄÄ.£Ä MvÄÛqÄzÄ Kgi PÄA¥Éæ,Äigi£Ä ,ÄªÄiÄÄçAzÄ PÄÄiÄÄðªÄð°Ä»ÄÄvÄÛzÉ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:



1) Title of technology: °ÉqÀÓ næªÀÄägi

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:

°ÉqÀÓ næªÀÄägi £ÀÄß °ÉÃ°UÉ °ÉZÁÑV °É¼ÉçgÀÄªÀ mÉÆAUÉUÀ¼À£ÀÄß PÀvÀÛj¹ªÀÄvÀÄÛ DPÁgÀªÀ£ÀÄß ¢ÃqÀ®Ä G¥ÀAiÉÆÄV,À-ÁUÀÄvÀÛzÉ, F PÀvÀÛj,ÀªªÀ ¸ZsÀ£ÀªÀ JzÀÄgÀÄ §zÀÄgÀÄ ZÀ°,ÀªªÀ °ÉèÃqÀUÀ¼À£ÀÄß °ÉÆAçgÀÄvÀÛzÉ.

6) Recommended practices/process:

PÉ®ªÀ °ÉqÀÓ næªÀÄägiUÀ½UÉ GzÀÝªAzÀ PÀA©AiÀÄ£ÀÄß (2.4 «ÄÄ. GzÀÝzÀªgÉUÉ) C¼ªªÀr,À-ÁVgÀÄvÀÛzÉªÀÄvÀÄÛ PÀvÀÛjAiÀÄ PÉÆÄ£ÀªÀ£ÀÄß JvÀÛgÀzÀ °ÉÃ°AiÀÄ ¥ÉÆzÉ,ÀjAiÀiAzÀ DPÁgÀPÉÌ §gÀªªÀAvÉ eÉÆÄr,À-ÁVgÀÄvÀÛzÉ.

7) Intended outcome and expected results:

8) Specific advantages:

F G¥ÀPÀgÀªªÀ 22 jAzÀ 25¹¹, 7500 DgÀ.!.JªÀi. ¥ÉmÉÆæÃ-ï ZÀ°vÀ JAffÀ CxªªÀ 18ªÉÇÃ-ïÖ, 1.5 J.JZi. °Álj-ªAzÀ ZÀ°,ÀÄvÀÛzÉ. °ÉèÃqÀ£À GzÀÝ 43 jAzÀ 70,ÉA.«ÄÄ. EgÀÄvÀÛzÉ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

37.

1) Title of technology: **Jafñi ZÁ°vÀ ,ÀgÀÏÀtÂ UÀgÀ**

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:



5) Technology description:

F GÏÀPÀgÀtªÀ£ÀÄß ZÀ° ,À®Ä MÏâª ªÀÄ£ÀÄµÀâ£À CªÀ±ÀâPÀvÉ-ÀzÉ. EzÀÄ ,ÀgÀÏÀtÂAiÀÄ£ÀÄß °ÉÆAçzÀÄÏ, 2 C±Àé±ÀQÛ Jafñi ,À°ÁAiÀÄçAzÀ PÁAiÀÄðªÀð» ,ÀÄvÀÛzÉ.

6) Recommended practices/process:

7) Intended outcome and expected results:

EzÀÄ 830X240X200 «ÄÄ. «ÄÄ C¼ÀvÉAiÀiÁVzÀÄÏ, vÀÆPÀ 3.90 Q.UÁæA, 400 «ÄÄ. «ÄÄ GzÀÏzÀªÀgÉUÉ PÀvÀÛj ,ÀÄvÀÛzÉ.

8) Specific advantages:

EzÀ£ÀÄß MtVzÀªÀÄvÀÄÛ gÉÆÄUÀ !ÄrvÀ mÉÆAUÉUÀ¼À£ÀÄß PÀvÀÛj ,À®Ä GÏÀAiÉÆÄV ,À-ÁUÀÄvÀÛzÉ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

38.

1) Title of technology: **የአገልግሎት ማረጋገጫ ለሥራ ለማድረግ የሚያገለግል ስልጠና**

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:



5) Technology description:

የሥራ ለማድረግ የሚያገለግል ስልጠና ለሥራ ለማድረግ የሚያገለግል ስልጠና ነው። የሥራ ለማድረግ የሚያገለግል ስልጠና 400X636X1665 ማለት ነው። ስልጠናው ለሥራ ለማድረግ የሚያገለግል ስልጠና ነው። ስልጠናው ለሥራ ለማድረግ የሚያገለግል ስልጠና ነው።

6) Recommended practices/process:

የሥራ ለማድረግ የሚያገለግል ስልጠና ለሥራ ለማድረግ የሚያገለግል ስልጠና ነው። የሥራ ለማድረግ የሚያገለግል ስልጠና ለሥራ ለማድረግ የሚያገለግል ስልጠና ነው። የሥራ ለማድረግ የሚያገለግል ስልጠና ለሥራ ለማድረግ የሚያገለግል ስልጠና ነው።

7) Intended outcome and expected results:

የሥራ ለማድረግ የሚያገለግል ስልጠና ለሥራ ለማድረግ የሚያገለግል ስልጠና ነው። የሥራ ለማድረግ የሚያገለግል ስልጠና ለሥራ ለማድረግ የሚያገለግል ስልጠና ነው።

8) Specific advantages:

* 65% የሥራ ለማድረግ የሚያገለግል ስልጠና ለሥራ ለማድረግ የሚያገለግል ስልጠና ነው። የሥራ ለማድረግ የሚያገለግል ስልጠና ለሥራ ለማድረግ የሚያገለግል ስልጠና ነው።

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

39.

1) Title of technology: **mÁæöåPÀÖgì ZÁ°vÀ Cj±Àt °Á^aÉð,ÀÖgì**

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:

F G¥ÀPÀgÀt^aÀÀ mÁæöåPÀÖgì ZÁ°vÀ^aÁVzÀÄÝ, °ÉèÃqÀÄ^aÀÄvÀÄÛ LzÀÄ °Ágì ¥Á-ÀAIUÀ¼À£ÀÄß °ÉÆAçzÉ.

6) Recommended practices/process:

EzÀÄ 35-45 °ÉZi | mÁæöåPÀÖgìÀ£À^a °ÁAiÀÄçAzÀ PÁAiÀÄð^aÀð»ÀÄvÀÛzÉ. EzÀgÀ CUÀ® 120^aÉA. «ÄÃ. DVzÀÄÝ,

7) Intended outcome and expected results:

¥Àæw ç£ÀPÉÌ 1.6 °ÉÃPÀÖgì ¥ÀæzÉ±ÀzÀ°è Cj²tzÀ °ÉÃgÀÄUÀ¼À£ÀÄß CUÉAiÀÄ§°ÀÄzÁVzÉ.

8) Specific advantages:

* EzÀjAzÀ 70% Rað£À G½vÁAiÀÄ^aÁUÀ°zÀÄÝ, 90%^a ÀÄAiÀÄ G½vÁAiÀÄ^aÁUÀÄvÀÛzÉ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

40.

1) Title of technology: **ÀiÁâAUÉÆ °Á^aÉð,ÀÖgi**

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:



5) Technology description:

F GYÀPÀgÀt^aÀ£ÀÄß J¼ÉAiÀÄÄ^aÁUÀ, °ÀtÚ£ÀÄß ^aÉÄvÀÛV£À ¥sÉæÃ^aÀii
^aÄÄvÀÄÛ PÉÆÃ[°]£À ^aÄÄzsÀâzÀ[°]è »rAiÀÄ[·]ÉÄPÀÄ ^aÄÄvÀÄÛ [·]ÉèÃqÀÄ
°ÀtÁÚ£À vÀÄA\$£ÀÄß 1-2 ,ÉA.«ÄÃ. zÀÆgÀzÀ[°]è PÀvÀÛj,ÄÄ^aAAvÉ »rzÄÄ
PÉÆAiÀÄÄè ^aÀiÁqÀ⁻ÁUÄÄvÀÛzÉ. eÁ½UÉUÉ 3-4 °ÀtÁÚUÀ¼ÄÄ
,ÀAUÀæ[°]À^aÁzÁUÀ eÁ½UÉ-ÄAzÀ °ÀtÚ£ÀÄß °ÉÆgÀ vÉUÉzÀÄ SÁ[°]
^aÀiÁqÀ[·]ÉÄPÀÄ. ¥sÉæÃ^aÄÄÄ ±ÀASÁPÁgÀ«gÄÄ^aÄÄzÀjAzÀ ^aÄÄgÀzÀ
^aÉÄÄ®InÖ£À[°]è ,ÄÄ®[·]sÀ^aÁV vÀ¼ÄÄî§[°]ÄÄzÄÄ.

6) Recommended practices/process:

^aÀiÁâAUÉÆ °Á^aÉð,ÀÖgi^aÄÄ ,ÁA¥ÀæzÁ-ÄPÀ PÉÆAiÀÄÄèè ^aÀiÁqÀÄ^aÄÄ
GYÀPÀgÀtQIAvÀ ,ÄÄzsÁj,À®ànÖzÁYVgÄÄvÀÛzÉ ^aÄÄvÀÄÛ vÀÄA\$Ä
,Ä»vÀ^aÁV °ÀtÚ£ÀÄß PÉÆAiÀÄÄèè ^aÀiÁqÀÄ§[°]ÄÄzÄÄ. °ÀtÚ£ÀÄß ¥sÉæÃ^aÀii
^aÄÄvÀÄÛ C®Äâ«ÄAiÀÄÄ PÉÆÃ®Ä (£Émí) £À ^aÄÄzsÀâzÀ[°]è E½AiÀÄÄ^aAAvÉ
^aÀiÁqÀ[·]ÉÄPÀÄ.

7) Intended outcome and expected results:

PÉÆ-Äè£À ,Á^aÄÄxÀâð^aÄÄ ¥Àæw UÀAmÉUÉ 95 Q.UÁæA EgÄÄvÀÛzÉ.

8) Specific advantages:

À,ÀzÀ zÀæªÀ gÀ,À ÉÆÃgÀÄªÀç®èªÄvÀÄÛ 3-4 ç£ÀUÀ¼ªÀgÉUÉ ±ÉÄRgÀuÁ,ªªÄxÀðªÀ£ÀÄß °ÉaÑ,À§ªÄzÀÄ. L.L.JZi.Dgi. °ÁªÉð,ÀÖgiUÉ °ÀUÄgÀªÄvÀÄÛ PÉÆAiÀÄª®Ä PÀrªÉÄ ±ÀQÛ ·ÉÄPÁVgÀªªÄzÀjAzÀ EzÀgÀ,ªªÄxÀðªÀ,ªªÄÿæzÀ-ÄPÀ PÉÆAiÀÄèªiÁqÀªªÀ GÿÀPÀgÀtQÌAvÀ °ÉZÁÑVzÉ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

41.

1) Title of technology: **aPÄÄÏªÄvÀÄÛ ¥ÉÄgÀ® PÉ.**

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:



5) Technology description:

PÉÆAiÀÄªªªÀ ¥sÉæªªÀiiUÉ °ÀtÄÚUÀ¼À£ÀÄß »rçlÄÖPÉÆ¼Äî®ÄªÉvÀÛ£ÉAiÀªªÉÆ¼ÉUÀ¼À£ÀÄß C¼ªªÀr,À-ÁVzÉ.

6) Recommended practices/process:

G½zÀ ¥ÄPÀªªÁUÀzÀ °ÀtÄÚUÀ¼Äªª °ÁUÉAiÉÄªªªgÀzÀè G½zÀÄPÉÆ¼ÄªªvÀÛªªÉ.

7) Intended outcome and expected results:

PÉÆ-Äè£À,ªªÄxÀðªÀªª ¥Àæw UÀAmÉUÉ 50-100 Q.UÁæA. EgÀvÀÛzÉö.

8) Specific advantages:

PÉªª® ·ÉÄPÁzÀ UAvÀæzÀ °ÀtÄÚUÀ¼À£ÀÄß PÉÆAiÀÄªªªªªzÀÄ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

42.

1) Title of technology: °A`É PÉÆAiÀÄÄãªÀ G¥ÀPÀgÀt

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:

°A`É PÉÆAiÀÄÄãªÀ G¥ÀPÀgÀtªÀÀ 10 ,ÉA.«ÄÃ. ªÁª,ÀzÀ ,ÀtÚ ¥ÉnÖUÉ-ÄzÀÄÝ CzÀgÀ GzÀÝ 20 ,ÉA.«ÄÃ. CzÀPÉÌ »r¼ÉÉ C¼ÀªÀr,À-ÁVzÉ.

6) Recommended practices/process:

F G¥ÀPÀgÀtªÀÀÆÄß ªÄgÀzÀ ªÉÄÃ®InÖ£Àºè ,ÀgÁUªªÁV vÀ¼Àî§ºÄÄzÀÄ, ºÀtÄÜ »r-ÄAzÀ vÉUÉAiÀÄ§ºÄÄzÀÄ. G¥ÀPÀgÀt J¼ÉAiÀÄªªªÁUÀ PÉÆAiÀÄÝ ºÀtÄÜ ¥ÉnÖUÉAiÀÄºè ,ÀAUÀªºªªÁUÀÄvÀÛzÉ.

7) Intended outcome and expected results:

PÉÆ-Äè£À ,ªªÄxÀãªªª ¥Àæw UÀAmÉUÉ 15-20 Q.UÁæA. EgÄÄvÀÛzÉ.



8) Specific advantages:

„ÄäàÀiÁgÄÄ 8-10 °ÀtÄÚUÀ¼ÄÄ ,ÄAUÀæ°ÀÁzÁUÀ ¥ÉnÖUÉ¬ÄAzÀ °ÀtÄÚUÀ¼Ä£ÄÄß SÁ° àÀiÁqÀ·ÉÏPÄÄ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

43.

1) Title of technology: vÉAV£Ä àÄÄgÄ °ÀvÄÄÛàÀ G¥ÀP

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

vÀ«Ä¼ÄÄ£ÁqÄÄ PÄÈ¶ «±Äé«zÁå®AiÄÄ

5) Technology description:

vÉAV£Ä àÄÄgÄ °ÀvÄÄÛàÀ G¥ÀPÀgÀtªÀ£ÄÄß PÉÃgÀ¼ÄzÀ ²æÃ eÉÆÄ,É¥sì JA§ÄªÄgÄÄ «£Áå,ÀUÉÆ½¹zÁÝgÉ.

6) Recommended practices/process:

àÄÄgÄ °ÀvÄÄÛàÀªÀ£Ä vÀÆPÀçAzÀ F ¥sÉæÃªÀiüUÀ¼ÄÄ àÄÄgÀPÉÌ CAnPÉÆArgÄÄvÀÛzÉ.



7) Intended outcome and expected results:

vÉAV£À ºÄÄgÀ °ÀvÄÄÛª G¥ÀPÀgÀtzÀ vÀÆPÀªÄ 9 Q.UÁæA. EgÄÄvÀÛzÉ.

8) Specific advantages:

F G¥ÀPÀgÀtzÀ ºè JgÀqÄÄ PÁ®ÄUÀ½UÉ °ÁPÀ®Ä JgÀqÄÄ
¥sÉæÃªÄiiUÀ½gÄÄvÀÛªÉ.CzÀgÀ ,À°ÁAiÄÄçAzÀ ®A§ªÁVªÄÄgÀ
ºvÀÛ§ºÄÄzÄÄ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

44.

1) Title of technology: CrPÉ ,ÄÄ°AiÄÄªªÄzÄÄ

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:

Mt CrPÉUÀ¼Ä£ÄÄß ,ÄÄ°AiÄÄªªÄ G¥ÀPÀgÀtªÄÄ 1 °ÉZi | «zÄÄåvªªÉÆÄlgª
ZÁºvªªÁVgÄÄvÀÛzÉ 1660X600X1615 «ÄÄ. «ÄÄ C¼ÄvÉAiÄÄzÁÝVzÄÄÝ

6) Recommended practices/process:



7) Intended outcome and expected results:

EzÀgÀ ,ÁÀÄxÀðÀÀ ¥Àæw UÀAmÉUÉ ,Ä°AiÀgÀÄ 100-150 Q.UÁæA DVgÀÄvÀÛzÉ.

8) Specific advantages:

,ÁÀÄxÀðÀÀ ¥Àæw UÀAmÉUÉ 300-400 Q.UÁæA. °À¹ CrPÉAiÀÄ£ÀÄß ,Ä°AiÀÄÄªÀ G¥ÀPÀgÀtªÀÀ MAzÉÆAzÉÃ PÁ-ÄAiÀÄ£ÀÄß Dj¹ JgÀqÀÄ °À®ÄèUÀ¼À ,À°ÁAiÀÄçAzÀ ,Ä°AiÀÄÄvÀÛzÉ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

45.

1) Title of technology: vÉAV£ÀPÁ-Ä ,Ä°AiÀÄÄªÀÄzÀÄ

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:

PÉÊ ZÁ°vÀ vÉAV£ÀPÁ-Ä ,Ä°AiÀÄÄªÀÄ G¥ÀPÀgÀtzÀ vÀ



6) Recommended practices/process:

7) Intended outcome and expected results:

„ÄÄxÄäðÄÄ ¥Äæw UÄAmÉUÉ „ÄÄÄiÁgÄÄ 70 jAzÄ 110 PÄ-ÄUÄ¼ÄÄ.

8) Specific advantages:

EzÄgÄ PÄAiÄiðPÄëÄÄvÉ ±ÉÄ.91 DVgÄÄvÄÛzÉ.

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

46.

1) Title of technology: **AiÄiÁAwæPÄ vÉAV£ÄPÄ-Ä „ÄÄ°Ai**

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

5) Technology description:

F G¥ÄPÄgÄtÄÄ 2 C±Äé±ÄQÛ «zÄÄävÄÒQÛ ªÉÆÄljfÄ „Ä°ÁAiÄÄçAzÄ PÄAiÄÄðÄÄ»ÄÄvÄÛzÉ.



6) Recommended practices/process:

7) Intended outcome and expected results:

vÉAV£ÀPÁ¬Ä ,ÄÄ°AiÄÄÄªÄ ,ÁªÄÄxÄäðªÄÄ ¥Äæw WÄAmÉUÉ 150
PÁ¬ÄUÄ¼ÄÄ.

8) Specific advantages:

9) Limitations if any:

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

47.

1) Title of technology: PKV Chilli Seed Extractor

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

Dr. Punjabrao Deshmukh Krishi Vidyapeeth,
Krishi Nagar, AKOLA, Maharashtra



5) Technology description: Chilli is grown on about 58,700 ha in Vidharbha, which requires about nine tones chilli seed for raising seedling. Presently the chilli seed is extracted by filling in bags and beating with wooden sticks. This is a tedious method. Inhalations of fine particles result in continuous sneezing and irritation of labor's body. Due to this, it is difficult to get the labor for this operation. The problem becomes more severe on large scale i.e. in seed processing plants, seed companies, etc. This method has low output and efficiency. To avoid this drudgery, a chilli seed extractor was developed with 100-125 kg/h capacity operated by 2.0 hp single phase electric motor. The recovery of seed from chilli fruits is about 94-99% at 9-10% m.c. (wb) with no deterioration on seed germination. It being a closed system minimizes the sneezing and body irritation. The cost of machine is Rs. 43000/-.The unit is commercially available.

6) Recommended practices/process:

- *Input/raw material: Red dried chilli,
- *Weight: 413 kg,
- *Man power: 1 skilled and 1 unskilled,
- *Output capacity: 100-125 kg/h.
- *Overall dimension: 1.42 X 2.44 X 1.78 m,
- *Prime mover: 2 hp single phase electric motor,
- *Investment: Rs. 43,000/-,

7) Intended outcome and expected results: Output capacity: 100-125 kg/h.

8) Specific advantages:

- * Extraction of seeds from dried red chilli pods. *Efficiency: 94-99% seeds from chilli fruits.
- * To avoid this drudgery.
- * Developed with 100-125 kg/h capacity. operated by 2.0 hp single phase electric motor.

9) Limitations if any: Man power: 1 skilled and 1 unskilled.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

48.

1) Title of technology: PDKV Fruit grader.

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

Dr. Punjabrao Deshmukh Krishi Vidyapeeth,
Krishi Nagar, AKOLA, Maharashtra



5) Technology description: The roller type fruit grader having four pairs of rollers (PVC pipes) of 100 mm diameter and 1500 mm length rotating (opposite and outward) at 80 rpm with adjustable diverging gap between each pairs of roller has been developed. The grader is useful for grading Nagpur mandarin, Sweet lime and sapota (spherical varieties) into 3 to 4 grades with 70 to 85 % grading efficiency.

6) Recommended practices/process:

*Input/raw material: Not graded spherical fruits, *Overall dimension: 2.30 X 1.50 X 1.50 m,
*Weight: 365 kg, *Prime mover: 1 hp single phase electric motor,
* Man power: 2 unskilled, *Investment: Rs. 57,500/-,
*Suitability for crop/ commodity: Grading of spherical fruits (Mandarin, sweet lime and sapota)

7) Intended outcome and expected results: Output capacity: 10 - 12 tonnes/day

8) Specific advantages:

*Grading of spherical fruits(Mandarin, sweet lime and sapota)
* Efficiency: 70-80% grading efficiency (3 to 4 grades).

9) Limitations if any: Suitability for crop - Grading of spherical fruits(Mandarin, sweet lime and sapota)

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

49.

1) Title of technology: Turmeric slicer

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

Dr. Punjabrao Deshmukh Krishi Vidyapeeth,
Krishi Nagar, AKOLA, Maharashtra

5) Technology description: The power operated turmeric cutting cum slicing machine has been developed using locally available materials as shown in Plate 3.1. The machine consists of the feeding unit, slicing mechanism, driving mechanism, frame and the housing. Centrifugal action principle with fix SS blade is adopted. The washed turmeric rhizomes fed through hopper are subjected to centrifugal force and strikes on the stationary SS blade fixed on the casing. The machine cuts the turmeric rhizomes into slices of desired thickness from (2 to 5 mm). The slices are collected through outlet provided below the blade. The components of the machine include striking unit, rhizome cutting unit and frame & power transmission unit.

6) Recommended practices/process:

Input/raw material:

* Overall dimension (L x B x H mm): 610 (L) x 458 (W) x 1205 mm (H) mm.

* Weight: 70 kg. * Prime mover: Motor operated.

* Power (hp): 1 hp * Man power: 1

* Investment: Rs. 60,000/-.

7) Intended outcome and expected results: Output capacity: 380 kg/h.

8) Specific advantages:

* Slicing/cutting of turmeric rhizomes, potato, ginger into slices

* Suitability for crop: Turmeric rhizomes, potato, ginger

* Efficiency: 74.74%. * Unit cost of operation: Rs. 22/q OR Rs. 220/ton

9) Limitations if any: Suitability for crop: Turmeric rhizomes, potato, ginger

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

i. Investment analysis:

ii. Is it suitable for custom hiring or actual purchase:

iii. Others, if any:

50.

1) Title of technology:

Pricking machine for Petha preparation

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

AICRP on PHT at Hisar and Aligarh centres

5) **Technology description:** In petha industry, most of the operations such as cutting, pricking, etc. are done manually which is labour intensive, time consuming, and also involves drudgery. Besides, manual cutting and pricking is unhygienic and shelf life is short. With the background, Hisar and Aligarh centres have developed jointly petha cutting and pricking machine using stainless steel needles. Suitable mould/ dies are required for uniform shape and size of petha sweet. This machine is helpful in increasing the capacity of production besides maintaining quality and hygienic conditions.

6) **Recommended practices/process:**

- * Overall dimension: 1220mm x 610mm x 990mm
- * Weight: 100 kg
- * Prime mover: 1.5 h.p. single phase motor with gear box
- * Man power: One
- * Land: Depends on the project scale of operation
- * Investment: Depends on the project scale of operation

7) **Intended outcome and expected results:** Output capacity: 200 kg/h

8) **Specific advantages:**

- * Ease the process of pricking of petha for petha sweet preparation
- * Efficiency: Pricking efficiency 95%
- * Unit cost of operation: Rs 1.50/kg

9) **Limitations if any:** Suitability for crop: Petha

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

51.

1) **Title of technology:** White Pepper Machine

2) **Category classification:**

Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**



5) **Technology description:** The machine removes outer pericarp from steeped fresh mature pepper berries (also from black pepper) to get white pepper kernels. It consists of a rotor shaft attached with 4 nylon brushes that rub the steeped pepper berries against the perforated metallic concave cylinder. During the operation continuous water supply is provided to the pulping chamber so that the loosened pulp (pericarp) is washed away by water through the sieve and the natural white pepper kernels are collected at the far end. The product should be further dried to the storable moisture content. All the contact parts of the machine where the pepper move are made up of food grade materials.

6) **Recommended practices/process:**

- * Input/raw material: Fresh green pepper berries soaked in water for 4-5 days/Black pepper berries steeped in water with microbial culture for a week.
- * Overall dimension: 83x74x105 cm
- * Weight: 45 kg.
- * Power: Electric motor, 0.5 hp
- * Prime mover: One skilled and one unskilled person
- * Land: Building (100 sft)
- * Investment: Rs. 75,000 but depends on quantity of to be processed

7) **Intended outcome and expected results:** Output capacity: 125-150 kg/h

8) **Specific advantages:**

- * Production of white pepper corns from freshly harvested mature green pepper berries; Can also be used for black pepper with additional microbial retting technique.
- * Unit cost (per machine): Rs 25,000 (without motor)

9) **Limitations if any:** Suitability for crops/commodity: White pepper

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

52.

1) **Title of technology:** Manual Arecanut Dehusker

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**



5) Technology description: It is a manually operated unit where four persons can dehusk arecanuts simultaneously. The unit is made of mild steel body mounted on angle iron stand. The dehusking assembly consists of two sharp edged blades, one being stationary and the other movable, operated by a pedal through a linkage mechanism. The unit has a hopper to hold 20 kg raw nuts and the raw nut freely flows to the dehusking tray by gravity. The outer shell of freshly harvested nut is pierced by pressing the nut against the sharp edge of the blade and the leg pedal is operated to split the husk. About 2-3 strokes are required to completely dehusk a nut.

6) Recommended practices/process:

*Input/raw material: Freshly harvested mature green arecanuts

* Overall dimension: 68 x 68 x137 cm

* Weight: 40 kg

* Power: Manual

* Man power: Two labours

* Investment: Rs. 4500/-

7) Intended outcome and expected results: Output capacity: 160 kg raw nut per day / person

8) Specific advantages:

* Suitable for dehusking freshly harvested mature green areca nut.

*Developed to replace the traditional dehusking tool which involves drudgery.

* Unit cost (per machine): Rs.4500/-

9) Limitations if any: Suitability for crops/commodity: Arecanut

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

i. Investment analysis:

ii. Is it suitable for custom hiring or actual purchase:

iii. Others, if any:

53.

1) Title of technology: Tamarind Dehuller-Cum-Deseeder

2) Category classification:

Farm Machineries and Implements

3) Year of release:



4) Technology source/acknowledgements:

AICRP on PHT,
University of Agricultural Sciences, BANGALORE

5) Technology description: This is a composite unit consisting of a tamarind dehulling unit and a deseeding unit. The dehulling unit consists of serrated mild steel rings mounted on two parallel shafts which rotate in opposite directions. Small pins welded on to the surface of the rings act as beaters to break and separate the brittle tamarind shell. The deseeder consists of a rotating fluted stainless steel roller and a stationary rasp bar. When the dehulled dry tamarind fruits pass between the fluted roller and the rasp bar, the seeds are squeezed out of the tamarind pulp. The expelled seeds are then separated manually.

6) Recommended practices/process:

*Input/raw material: Freshly harvested and well dried tamarind fruits

* Overall dimension: 68 x 68 x137 cm

* Weight: 40 kg

* Power: Manual

* Man power: One labour

* Investment: Rs. 4500/-

7) Intended outcome and expected results: Output capacity: Dehulling - 600 kg/h or Deseeding - 45 kg/h

8) Specific advantages:

* Dehulling of freshly harvested matured dry tamarind fruits and then expelling seeds from dehulled fruits.

9) Limitations if any: Suitability for crops/commodity: Tamarind.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

i. Investment analysis:

ii. Is it suitable for custom hiring or actual purchase:

iii. Others, if any:

54.

1) Title of technology: Pedal Operated Coconut Dehusker

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:



5) **Technology description:** The dehusking assembly consists of two sharp edged blades, one being stationary and the other movable - operated by a foot pedal through linkage mechanism. The twin-blades are mounted on a tubular stand. The unhusked coconut is pierced on the wedge like blade and then the foot pedal is pressed to split open and separate a portion of the husk. The operation is repeated 3-4 times until complete dehusking is done.

6) **Recommended practices/process:**

*Input/raw material: Coconuts

*Overall dimension: 45 x 15 x 85 cm

* Weight: 6 kg

* Power: Manual

* Man power: One labour

* Investment: Rs. 600/-

7) **Intended outcome and expected results:** Output capacity: 50-60 nuts /h

8) **Specific advantages:**

* For dehusking coconut with ease and minimal effort;
Can be conveniently used both by men and women.

9) **Limitations if any:** Suitability for crops/commodity: Coconut

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**

55.

1) **Title of technology:** Mango Harvester

2) **Category classification:**

Farm Machineries and Implements

3) **Year of release:**



4) Technology source/acknowledgements:

Research Engineer,
AICRP on PHT, University of Agricultural Sciences, BANGALORE

5) Technology description: The gadget is a simple and maintenance free unit comprising of a metal ring with a fixed knife edge at one end for cutting the petiole of the fruit. Nylon net is fixed to the metal ring to hold the plucked fruits. The unit needs to be fixed to a long pole of suitable length to reach the fruits on the tree.

6) Recommended practices/process:

* Input/raw material:

* Overall dimension: 37 x 24 x 2 cm

* Weight: 0.40 kg.

* Power: One labour

* Investment: Rs. 90/-

7) Intended outcome and expected results: Output capacity: 750 fruits / h

8) Specific advantages:

* To pluck mango fruits from the tree without fruit damage.

* Unit cost (per machine): Rs. 90/-

9) Limitations if any: Suitability for crops/commodity: Mango

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

i. Investment analysis:

ii. Is it suitable for custom hiring or actual purchase:

iii. Others, if any:

56.

1) Title of technology: Sapota Harvester

2) Category classification:

Farm Machineries and Implements

3) Year of release:



4) Technology source/acknowledgements:

AICRP on PHT, University of Agricultural Sciences, BANGALORE

5) Technology description: The gadget is a simple and maintenance free unit comprising of a metal ring with a fixed knife edge at one end for cutting the petiole of the fruit. Nylon net is fixed to the metal ring to hold the plucked fruits. The unit needs to be fixed to a long pole of suitable length to reach the fruits on the tree.

6) Recommended practices/process:

* Input/raw material:

* Overall dimension: 35 x 17 x 3 cm

* Weight: 0.35 kg

* Power: Manual

7) Intended outcome and expected results:

8) Specific advantages:

* To pluck Sapota fruits from the tree without fruit damage.

9) Limitations if any: Suitability for crops/commodity: Sapota

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

i. Investment analysis:

ii. Is it suitable for custom hiring or actual purchase:

iii. Others, if any:

57.

1) Title of technology: Cardamom Dryer.

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

AICRP on PHT, University of Agricultural Sciences, BANGALORE, Karnataka

5) Technology description: It is basically a convective dryer. The vertical drying chamber is made-up of wood with wooden drying trays / racks. Hot air generated with electrical heaters is pushed through the trays containing freshly harvested cardamom capsules from bottom of the dryer using an electrical blower. The exhaust is at the top for the moisture laden air. With this drier, it is possible to reduce the moisture content of fresh cardamom capsules from 90% to 12% in about 10 hours.

6) Recommended practices/process:

*Input/raw material: Freshly harvested cardamom capsules.

*Overall dimension: 165 x 105 x 225 cm (including heat bank, air blower with motor)

*Power: Electrical blower - 0.5 hp; Electrical heaters - 3 kW.

*Man power: One labour

*Investment: Rs. 30,000/-

*

7) Intended outcome and expected results: Output capacity: Dries 10 kg of fresh cardamom capsules.

8) Specific advantages: To dry freshly harvested cardamom capsules in cardamom plantations.

9) Limitations if any: Suitability for crops/commodity: Cardamom.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

i. Investment analysis:

ii. Is it suitable for custom hiring or actual purchase:

iii. Others, if any:

58.

1) Title of technology: Multipurpose Poly house Solar Dryer.

2) Category classification:

Farm Machineries and Implements

3) Year of release:



4) Technology source/acknowledgements:

AICRP on PHT, University, Bapatla, AP

5) Technology description: The dryer essentially consists of an arch type poly house to hold chillies on two different tiers. The tiers are made of wire mesh trays fitted to a frame assembled by nuts and bolts. 2.5 tons capacity poly house solar dryer having a size of 12 x 7.8 x 2.4 m (L x B x H), arch type model with a tray area of 1600 sft (147 m²) has been developed. The whole frame structure is covered with a UV stabilized 150-gsm cross-laminated semi transparent polyethylene sheet. The poly sheet is provided with suitable ventilators both at the bottom and top to facilitate movement of air. Temperature of about 15-17°C higher than the ambient temperature was observed inside the dryer. Drying of hybrid such as BJ 304 can be completed in 6 to 7 days compared to 13-14 days in open yard sun drying (OYSD) method. The drying of LCA-334 variety was only 4 to 5 days in poly house when compared to 10 days in OYSD. The moisture was reduced from an initial value of 78-80% to 10% (w b). The color of the pods is much superior than that dried in the open yard method. The percentage white pods are only 2-3% in comparison to 8-9% in OYSD. Poly house can be used to raise nursery during July to October by replacing the poly sheet with 50% shade net and dismantling the trays.

6) Recommended practices/process:

*Input/raw material: Chilli

*Overall dimension: 12000 x 7800 x 2400 mm.

*Power: One person.4

7) Intended outcome and expected results: Output capacity: 7 qtl. dry chillies / batch.

8) Specific advantages: Drying of quality chillies- free from external contamination, unforeseen rains. Nursery raising and production of leafy vegetables can also be taken up in off season.

9) Limitations if any: Suitability for crop: Chilli.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

59.

1) Title of technology: Mobile Steam Boiler for Turmeric.

2) Category classification:

Farm Machineries and Implements

3) Year of release:



4) Technology source/acknowledgements:

AICRP on PHT, Agricultural University, Bapatla, AP

5) Technology description: Turmeric steam boiler consists of four drums each having a capacity of 125 kg of turmeric rhizomes per batch, a water tank diesel burner, boiler, feed pump and a control panel for regulating water, pressure, and temperature. All the components are fixed on a tractor trolley to move the equipment from field to field. The water gets heated with diesel burner and the steam with a pressure of 2 kgf/cm² is sent to the drums. At a time the steam can be supplied to two drums, it takes 7 to 10 minutes to boil the rhizomes and the valves are changed to divert the steam into next two drums. In this way one ton rhizomes can be cooked in an hour.

6) Recommended practices/process:

* Input/raw material: Raw Turmeric rhizomes

* Overall dimension: 4500x1800x4500

* Prime mover/ machine: 1 hp for boiler feed pump, ¼ hp for diesel burner.

* Man power: Four persons.

* Investment: 6 lakh.

7) Intended outcome and expected results:

*Output capacity: 2 tons/ h (cooked rhizomes) 300 kg/ h (final dried produce).

8) Specific advantages:

* Efficiency: 100% (cooking efficiency).

* Improved Quality turmeric rhizomes with good colour, high curcumin, aroma and product free from microbial load, physical contamination. Blackening of the rhizomes can be avoided and subsequent drying time can be reduced significantly due to steam cooking in comparison to traditional method.

9) Limitations if any: Suitability for crop/ commodity: Turmeric.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

i. Investment analysis:

ii. Is it suitable for custom hiring or actual purchase:

iii. Others, if any:

60.

1) Title of technology: Barn Drying of Chillies

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

AICRP on PHT, Agricultural University, Bapatla, AP.

5) Technology description: Ten to twelve quintals of ripe chillies can be loaded in the existing tobacco barns to dry chillies. The barn can be converted to dry chillies by small modifications such as providing GI trays on the existing tiers of the barn. Galvanized iron wire mesh trays of size 105x75x7.5 cm (LBH) are suitable to hold chillies on the existing tiers of the barn. About 100 to 120 trays are required to load chilli depending upon the size of the barn, initial moisture content and type of chilli. The output of the dried produce is about 3 quintals per batch. Drying time required to reduce moisture from 75 to 9%(w.b) varied depending upon whether the chilli is hybrid or variety. Hybrid chillies require about 50 hours to dry whereas the other varieties require about 40 hours. The temperature and ventilator operation regimes are important to get good quality uniform dried produce. The operating regimes are optimized to dry both hybrids and varieties of chillies.

6) Recommended practices/process:

- * Input/raw material: Ripe Chilli
- * Overall dimension: 6000x6000x7500
- * Prime mover/ machine: Existing tobacco barns
- * Man power: One person

7) Intended outcome and expected results:

*Output capacity: 300 kg of dried chilli / batch.

8) Specific advantages:

* Drying of quality chillies, free from external contamination, protection from unforeseen rains.

9) Limitations if any: Suitability for crop: Chilli.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

61.

1) Title of technology: Turmeric/Ginger Washer

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

AICRP on Post harvest Technology, Orissa University of Agriculture and Technology, Bhubaneswar.

5) Technology description: Vertical cylindrical chamber having rotating base and provision of water spray through a perforated pipe fitted at the inside of the chamber.

6) Recommended practices/process:

* Input/raw material: M.S.Angle, M.S.Flat,G.P.Sheet

* Overall dimension: 1 h.p. Single Phase A.C.Motor.

* Prime mover: 1 HP.

* Man power: One.

*Investment: Rs. 15,000/-

7) Intended outcome and expected results: Output capacity: 3 q/h.

8) Specific advantages:

* Efficiency: 90%

* Washing of turmeric/ginger

9) Limitations if any: Suitability for crops/commodity: Ginger, Turmeric.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

i. Investment analysis:

ii. Is it suitable for custom hiring or actual purchase:

iii. Others, if any:

62.

1) Title of technology: Dehumidified Air Dryer.

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

AICRP on Post harvest Technology, Orissa University of Agriculture and Technology, Bhubaneswar.

5) Technology description: Samples can be dried at low temperature and low humidity condition to maintain the quality. The dryer is associated with heat pump to remove the moisture from exhaust air at the evaporator surface and recirculating the air to the dryer after heating to the desired level at the condenser.

6) Recommended practices/process:

*Input/raw material: M.S.Angle, M.S.Flat, G.P.sheet, Thermocoal Sheet

* Overall dimension: Compressor, Condensor, Evaporator, Heaters etc

* Weight: 1kW

* Man power: One

* Investment: Rs. 1,10,000/-

7) Intended outcome and expected results: Output capacity: 20kg/batch

8) Specific advantages:

* Efficiency: 90%

* Unit cost of operation: Rs.2 to3/- per kg (depending on product)

* Drying of high value fruits and vegetables

9) Limitations if any:

*Suitability for crops/commodity: Fruits, vegetables, spices, aromatic and medicinal plants.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

i. Investment analysis:

ii. Is it suitable for custom hiring or actual purchase:

iii. Others, if any:

63.

1) Title of technology: Hand Operated Low Cost Aloe-Vera Gel Extractor

2) Category classification: Farm Machineries and Implements

3) Year of release:



4) Technology source/acknowledgements:

AICRP on Post harvest Technology,
Orissa University of Agriculture and Technology, Bhubaneswar.

5) Technology description: The unit consists of one pair of wooden rollers with S.S. lining. Each roller is fixed tightly with the help of bush and frame arrangement on both the sides. The rollers are tapered continuously from one end to other with a slope in order to have varying clearance to allow the leaves of varying thickness to be squeezed properly. The rollers are rotated with the help of a handle attached to the shaft. The bottom roller moves in clockwise direction and 2 numbers of wooden rollers while upper roller in anticlockwise direction. The whole assembly is fixed on a base frame which supports the unit during operation.

6) Recommended practices/process:

- * Input/raw material: M.S.Angle, flat, M.S.Sheet
- * Man power: one

7) Intended outcome and expected results: Output capacity: 20 kg/ hour.

8) Specific advantages:

- * Efficiency: 95%
- * Unit cost of operation: Rs. 0.60 per kg.
- *To extract aloe-vera gel for further processing

9) Limitations if any: Suitability for crops/commodity: Aloe-vera leaves.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

64.

1) Title of technology: Fluidized Bed Dryer for Mushroom

2) Category classification:
Farm Machineries and Implements

3) Year of release:



4) Technology source/acknowledgements:

Agricultural Machinery Research Centre, Tamil Nadu Agricultural University, Coimbatore.

5) Technology description: The fluidized bed dryer consists of a centrifugal blower, holding bin, heating coils, motor and thermostat control. The blower is run by a 3 hp, three phase motor. The delivery of the blower is connected to the heater drum, provided four numbers of fin type electrical heaters of each 500 watts and controlled through a stem type thermostat. At the other end of the heater drum, the drying chamber is placed. Hot air of 50 to 90°C temperature at a flow rate of 9 to 32 m³ / minute can be obtained in this dryer. The whole assembly is placed on a suitable frame made of mild steel.

6) Recommended practices/process:

- *Input/raw material: Milky/ Button Mushroom
- * Power: 3 hp electric motor; 2000 W for heaters
- * Man power: 1 person

7) Intended outcome and expected results: Output capacity: 6 kg/batch

8) Specific advantages:

- * Unit cost of operation: Rs.50/kg of dry mushroom.
- * To dry the oyster and milky mushroom

9) Limitations if any: Suitability for crops/commodity: Mushroom.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

65.

1) Title of technology: Improved Farm Level Turmeric Boiler

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

Agricultural Machinery Research Centre, Tamil Nadu Agricultural University, Coimbatore.

5) **Technology description:** It consists of one rectangular, larger size, solid outer container, made out of 20 SWG thick galvanized iron sheet to hold water and two to three inner containers to hold rhizomes. Washed rhizomes are loaded in the inner cylinder and required quantity of water is added in the outer required quantity of water is added in the outer cylinder. Rhizomes are boiled by the steam liberated from the boiling water. Sodium bicarbonate is added in the boiling water to ad colour. The inside containers which hold turmeric can easily be taken out without wasting boiling water, which can be reused and thereby fuel requirement can be considerably reduced.

6) Recommended practices/process:

- *Input/raw material: Turmeric Rhizomes
- * Plant and Machinery: Turmeric boiler
- * Power: 10 kg. of fire wood / batch
- * Man power: Three person
- * Investment: Rs.14, 000

7) **Intended outcome and expected results:** Output capacity: 225 kg per batch.

8) Specific advantages:

- * Unit cost of operation: Rs.6/h
- * To boil the turmeric rhizomes under hygienic condition.

9) **Limitations if any:** Suitability for crops/commodity: Turmeric.

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

66.

1) Title of technology:

Aonla Pricking Machine (Manually operated)

2) **Category classification:** Farm Machineries and Implements



3) Year of release:

4) Technology source/acknowledgements:

Dept. of Agril. Processing and Energy, CCS Haryana Agricultural University, Hisar.

5) Technology description: Aonla fruits are highly perishable in nature, and most difficult to store or transport over long distances. Still in industry, traditional method of hand tools are being used. This existing method of pricking is tiresome, time consuming and costly. Preparation of aonla preserve (Murabba) is very common practice to use and enhance shelf life. For making the preserve (Murabba), the pricking of aonla fruits is carried out. This is operated by pushing the handle manually.

6) Recommended practices/process:

*Input/raw material: Input/raw material

* Overall dimension: 400 mm x 220 mm x 400 mm

* Machinery: Aonla Pricking Machine

* Weight: 15 kg

* Power: Manual

* Man power: One

* Investment: Rs. 10000/-

7) Intended outcome and expected results: Output capacity: 15-20 kg/h.

8) Specific advantages:

* Operational efficiency: 90%

* Efficiency: Pricking efficiency 95% with 2mm thick needles.

* Unit cost (per machine): Rs. 5000- 6000

* Unit cost of operation: Rs. 1.50 (when the cost of labour is Rs. 150 per day).

* It has application in pricking of aonlas for the preparation of murabba (preserves).

9) Limitations if any: Suitability for crops/commodity: Aonla.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

i. Investment analysis:

ii. Is it suitable for custom hiring or actual purchase:

iii. Others, if any:

68.

1) Title of technology: Continuous Carrot Washer (Bahabalpur)

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

Dept. of Agril. Processing and Energy, CCS Haryana Agricultural University, Hisar.

5) Technology description: Carrots are removed from earth and hence not safe for consumption. For its consumption the sellers clean/ wash carrots with the help of this machine.

6) Recommended practices/process:

- * Input/raw material: Carrots
- * Overall dimension: 3000 mm x 1200 mm x 1200 mm
- * Machinery: Washing machine
- * Weight: 500 kg
- * Prime mover: Diesel Engine
- * Power: 5 h.p.
- * Man power: Four
- * Investment: Rs. 1,00,000/-

7) Intended outcome and expected results: Output capacity: 1,000 Kg/h.

8) Specific advantages:

- * Operational efficiency: 95%
- * Efficiency: 95%
- * Unit cost of operation: Rs. 0.30 (when the cost of labour is Rs. 150 per day)-
- * It has application in washing of carrots.

9) Limitations if any: Suitability for crops/commodity: Carrots.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

68.

1) Title of technology: HAU Aonla pricking machine (power operated)

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

NRDC

5) Technology description: Aonla pricking machine is developed to prepare murabba.

6) Recommended practices/process:

- * Input/raw material
- * Overall dimension (L x B x H mm): 135 x 50 x 154 cm
- * Weight: 90 kg
- * Prime mover: Electric motor
- * Power (hp): 1 hp
- * Man power: 1 person
- * Land: 270 x 100 x 308 cm
- * Investment: Rs. 60,000/-

7) Intended outcome and expected results: Output capacity: 80 kg/hr

8) Specific advantages:

- * Efficiency: 90%
- * Unit cost of operation: Rs. 0.10 per kilogram
- * Pricking the aonlas for the preparation of murabba

9) Limitations if any: Suitability for crop: Aonla (gooseberries)

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

69.

1) Title of technology: Pineapple Harvester

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

AICRP on PHET, Central Agricultural University, Imphal.

5) Technology description: A manually operated pineapple harvester is fabricated with mild steel rod of 30 mm diameter and 1500 mm length. A sharp cutting blade of 125 mm diameter made of mild steel is attached at the end of the main frame which is used to cut the stalk of the pineapple. Rotation of the cutting blade (125mm) is obtained through a transmission from a 1.5 hp petrol engine through a spiral rotating shaft. When the operator pulls the lever of the cranking wheel of engine mounted at the back of the operator which is connected to the cutting blade, the blade starts rotating and cuts the stalk just beneath the pineapple. A single operator is required for cutting the pineapple and putting it in the basket as well. The cutting blade can be sharpened or replaced when damaged.

6) Recommended practices/process:

- * Overall dimension (L×B×H mm): 1500(L) x 130 (B)
- * Weight: 9 kgs.
- * Prime mover: Petrol engine
- * Power (hp): 1.5 hp
- * Man power: Single operator
- * Land: Hilly terrains/terrace land of NEH
- * Investment: Rs.10,000/-

7) Intended outcome and expected results:

- * Output capacity: Field capacity is in the range of 250 to 280 harvested fruits per hour.

8) Specific advantages:

- * Efficiency: 70.44% actual capacity = 0.048 ha/day and fruit damage <5%.
- * Unit cost of operation: Rs.1.5 per harvested fruit.
- * Harvesting pineapple in hilly slope areas of NEH.

9) Limitations if any:

Suitability for crop / commodity: Suitable for pineapple harvesting

- a. This tool replaces the conventional chopping which damages pineapples and injures the harvester.
- b. The conventional method is not only time consuming and laborious but also causes backache.

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

70.

1) Title of technology: Fruit Grader (Manual)

2) Category classification: Farm Machineries and Implements



3) Year of release:

4) Technology source/acknowledgements:

AICRP on PHT, Jawaharlal Nehru Krishi Viswa Vidyalaya, Jabalpur. Madhya Pradesh.

5) **Technology description:** The main component of multi fruit grader includes; feed trough, intermediate hopper, separating trough collecting platform and mainframe. Multi-fruit grader is designed on the principle of size basis and it is tested for guava, mosambi and orange. Multi-fruit grader can separate as small as 50mm size and as large as 130 mm fruits. The moisture content of fresh fruits was determined as 78% in guava, 85% in mosambi and 89% in orange. Fruits were conveyed from feed trough to separating trough intermediate hopper, which is attached to the main frame. When the fruits were dropped in the separating trough they roll along with the length of separation trough due to the inclination. Separating trough is divided into four sections. Smaller fruits were separated out first while larger fruits rolled further and dropped according to their size in the larger opening provided for the purpose. Graded fruits were collected in the collecting boxes placed on collecting platform. Grading took place due movement under gravity over the variable opening slit and there is no need of any electrical or mechanical power. The capacity for multi fruit grader is 93%, 95% and 90% for mosambi, guava and orange respectively. The cost of the grader is Rs.15,000/- The machine has been developed by AICRP on PHT, College of Agricultural Engineering, Jabalpur.

6) **Recommended practices/process:**

*Input/raw material: Fruits & Vegetables like Citrus fruits, Potatoes, Onion etc

* Overall dimension (L × B × H mm): 2100 x 300 x 1650 mm * Weight: 63 kg.

* Prime mover: Manual * Man power: 1

* Land: 12 x 10 ft. * Investment: Rs. 10,000.00 + Operational Expenditure.

7) **Intended outcome and expected results:**

* Output capacity: 1200 kg per hour

8) **Specific advantages:**

* Efficiency: 90 – 95% * Unit cost of operation: Rs. 40 per hour. * Sorting and Grading of Fruits

9) **Limitations if any:**

* Suitability for crop: Fruits & Vegetables like Citrus fruits, Potatoes, Onion etc.

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. Investment analysis:

ii. Is it suitable for custom hiring or actual purchase:

iii. Others, if any:

71.

1) **Title of technology:** Power Operated Pea Shelling Machine

2) **Category classification:** Farm Machineries and Implements.



3) Year of release:

4) Technology source/acknowledgements:

AICRP on PHT, Jawaharlal Nehru Krishi Viswa Vidyalaya, Jabalpur. Madhya Pradesh

5) **Technology description:** Manual removal of kernels from green pea pods take a lot of time (3-3.5 kg of green peas in one hour) and it is laborious and tiring job. Therefore, it was felt necessary to develop a suitable power operated green pea pod sheller to meet the requirement of the pea growers. The sheller consisted of feeding hopper, roller, concave, frame and a 0.25 hp electric motor. The roller is fixed on a central shaft supported on two bearings. The roller rotates in the concave. The roller and concave assembly is mounted on a frame. The concave consists of galvanized iron sheet punched with holes of 16 mm dia. at a center to centre distance of 26 mm. The pods were fed through the hopper for shelling operation. Pods with higher moisture content were shelled prior to the pods having lower moisture content. The pea pods get shelled due to friction between the roller, whose surface is abrasive made of punched sheet and concave and also due to impact developed during the rotation of roller.

After completion of peeling operation, the different fractions of the shelled sample like whole kernels, damaged kernels and unshelled pods were collected cautiously. The capacity of the power operated pea shelling machine is 60 kg/hr with about 98% efficiency.

6) **Recommended practices/process:**

* Overall dimension (L × B × H mm): 1040 x 380 x 1240 mm.

* Weight: 105 kg. * Prime mover: Electric Motor

* Power (HP): 0.5 hp. * Man power: 1

* Land: 12 x 10 ft. * Investment: Rs. 15,000.00 + Operational Expenditure.

7) **Intended outcome and expected results:** Output capacity: 60 kg per hour.

8) **Specific advantages:**

* Efficiency: 98% * Unit cost of operation: Rs. 40 per hour. * Shelling of Green Peas.

9) **Limitations if any:** Suitability for crop: Green Peas

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. Investment analysis:

ii. Is it suitable for custom hiring or actual purchase:

iii. Others, if any:

72.

1) **Title of technology:** Ber Grader

2) **Category classification:** Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

Central Arid Zone Research Institute, Jodhpur, Rajasthan.

5) **Technology description:** Manually operated ber grader is simple in design, easy in operation and low cost for grading of mixed lot others into three sizes i.e. > 35mm to 25mm and < 25mm has a capacity of 500- 600 kg/h. The screen area is 0.48m². The screens are provided with rubber sheet of 3 mm to avoid bruising of ber. There is a provision for change in angle of Screens (top 0-15°, middle: 0-20 ° and Bottom 5 ° slope) and for collection of graded material from each screens. The oscillation motion is provided to the two screens through single step V-belt arrangement. The complete unit is mounted on an angle iron frame and provided with flywheel with handle for operating the machine.

6) Recommended practices/process:

* Man power: One

7) Intended outcome and expected results: Output capacity: 500-600 kg/ h

8) Specific advantages:

* Unit cost (per machine): Rs.10,000/-

* Grading of ber

9) Limitations if any: Suitability for crop: Ber

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

i. Investment analysis:

ii. Is it suitable for custom hiring or actual purchase:

iii. Others, if any:

73.

1) Title of technology: Cleaner-cum-Grader for Cumin.



2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on PHT,
Junagadh Agricultural University, Junagadh, Gujarat.

5) **Technology description:** The reciprocating type cumin cleaner cum grader consist of feed hopper, sieve box, blower and power transmission and drive unit and frame.

6) **Recommended practices/process:**

* Overall dimension: 1210 x 1000 x 1000 mm * Man power: 2
* Power: 1 HP (0.746 Kw), Single phase * Investment: Rs. 35,000 + Material cost

7) **Intended outcome and expected results:** Output capacity: 50 kg / hour

8) **Specific advantages:**

* Unit cost (per machine): Rs. 35,000
* Cleaning and grading of cumin seed and can be used for other seeds just by changing the sieves.

9) **Limitations if any:** Suitability for crops/commodity: Cumin

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

- i. **Investment analysis:**
- ii. **Is it suitable for custom hiring or actual purchase:**
- iii. **Others, if any:**

74.

1) **Title of technology:** Development of Shell Fired Copra Dryer



2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on PHT,

Central Plantation Crop Research Institute, Kasargod. Kerala.

5) **Technology description:** A shell fired copra dryer was designed and developed to dry coconut in 24 h which works on indirect heating and natural convection principles using coconut shell as fuel. The capacity of the dryer developed was 1000 nuts per batch. The drying air temperature in the drying chamber was 80 °C. The unique burner designed generated heat for 5 hours without tending and the heat is retained for one more hour. No electrical energy is used in this dryer making it farmer friendly. Once the fuel is charged it produces heat for 6 hours thereby allowing the farmer to do other useful work as compared to other dryers where in fuel is loaded once in 15-20 minutes. Smoke does not come into contact with the copra; hence the copra produced is of good quality. About 100 grams of shell charcoal is also produced during the final phase of heating.

6) **Recommended practices/process:**

* Input/raw material

* Overall dimension (L x B x H mm): 22500x1500x15000

* Weight: 125kg

* Man power: One

* Land: 100 sqm

* Investment: 75000

7) **Intended outcome and expected results:** Output capacity: 1000 Nuts / batch.

8) **Specific advantages:**

* For production of quality copra for coconut oil extraction

* Efficiency: 24.48% (Thermal)

* Unit cost of operation: 0.90/ nut

9) **Limitations if any:** Suitability for crop: Coconut and Arecanut.

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**

75.

1) **Title of technology:** Tender Coconut Punch and Cutter



2) **Category classification:**
Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**
AICRP on PHT,
Central Plantation Crop Research Institute, Kasargod, Kerala.

5) **Technology description:** A simple tender nut punch has been developed. It mainly consists of a square base made of MS angle of 40 cm length. The tender nut is placed on the nut holder which is a circular and hollow in shape with a diameter of 10 cm. The tender nut can be placed on the nut holder and by operating the lever mechanism a hole of 12mm diameter is made in just 4-5 seconds. A straw is put in the hole and one can drink the nut water. A simple Tender Coconut Cutter was developed. It mainly consists of a wooden base of 50 cm length, a stand, a knife and a hand lever. The stand is mounted on the base. The cutting blade is mounted concentric to the stand and retained at a height of 15-20 cm.

6) **Recommended practices/process:**

- * Input/raw material
- * Overall dimension (L x B x H mm): 5000x1500x1500
- * Weight: 15kg
- * Man power: One
- * Land: 9sqm
- * Investment: 15000

7) **Intended outcome and expected results:** Output capacity: 20 nuts/ h

8) **Specific advantages:**

- * Unit cost of operation: 0.15/nut
- * For making a hole in tender coconut and for cutting it in to two halves.
- * Efficiency: 20 nuts/ h (Efficiency has to be in percentage)

9) **Limitations if any:** Suitability for crop: Coconut

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:

76.

1) **Title of technology:** Coconut De-Shelling Machine



2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on PHT, Central Plantation Crop Research Institute, KASARGOD, Kerala.

5) **Technology description:** Traditionally after partial drying of split coconut, the kernel and copra is separated using a traditional wooden mallet by taking the individual cups in hand. To overcome this problem, a power operated coconut de-shelling machine was designed and developed. The capacity of the machine was 400 half cups per batch. The optimum average moisture content for maximum de-shelling efficiency (92.16 %) was 35 % d.b. The optimum speed of the de-shelling machine is 10 RPM and the time taken for de-shelling was 4 minutes per batch.

6) **Recommended practices/process:**

* Input/raw material

* Overall dimension (L x B x H mm): 5000x1500x1500

* Weight: 15kg

* Man power: One

* Land: 9 sq m

* Investment: Rs. 150000/-

7) **Intended outcome and expected results:** Output capacity: 5000 nuts/ h

8) **Specific advantages:**

* Efficiency: 20 nuts/ h

* Unit cost of operation: 0.15/nut

* For separating coconut shell and kernel after partial drying

9) **Limitations if any:** Suitability for crop: Coconut

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**

1) **Title of technology:** Coconut slicing machine

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on PHT, Central Plantation Crop Research Institute, KASARGOD, Kerala.

5) **Technology description:** The machine consists of two stainless steel slicing blades fixed on a circular blade supporting disc, a feeder to insert coconut endosperm for slicing, an exit guide to guide the sliced coconut chips towards the outlet and an electric motor as a prime mover. The electric motor rotates the blade supporting disc using a V-belt. Coconut endosperm is pressed to the surface of the rotating wheel through the slot provided on the feeder at the top of the machine. When it comes in to contact with the blades the coconut endosperm gets sliced and chips are produced. The sliced coconut chips are then guided towards the outlet by the exit guide and are collected in a container. Coconut chips of uniform and required thickness could be produced using this machine. Capacity of the machine is 50 coconuts per hour. Fabrication cost of the machine is Rs.50,000/-

6) **Recommended practices/process:**

* Input/raw material

* Overall dimension (L x B x H mm): 500X 210X450

* Weight: 20kg

* Prime mover: Electrical motor

* Power (hp): 0.5

* Man power: One

* Investment: Rs.50,000/-

7) **Intended outcome and expected results:** Output capacity: 50 coconuts per hour.

8) **Specific advantages:**

* Efficiency: 50 coconuts per hour

* Unit cost of operation: Rs.0.5 per coconut

* Slicing coconut kernel

9) **Limitations if any:** Suitability for crop: Coconut, Banana, tuber crops, vegetables.

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. Investment analysis:

ii. Is it suitable for custom hiring or actual purchase:

iii. Others, if any:

1) **Title of technology:** Coconut slicing machine

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on PHT, Central Plantation Crop Research Institute, KASARGOD, Kerala.

5) **Technology description:** The machine consists of a stainless steel slicing blade fixed on a circular blade supporting disc, a specially designed curved feeder to insert coconut endosperm for slicing, an exit guide to guide the sliced coconut chips towards the outlet and a pedal operated mechanism similar to that of a sewing machine to operate the slicing machine. Power is transferred from the pedal to the blade by belt and pulley. One person, the operator, sitting on a chair in front of the machine operates the machine by pedaling. The blade supporting disc gets rotated along with the blade because of this. Coconut endosperm, the kernel obtained after the removal of husk and shell, is fed to the surface of the blade supporting disc through the slot provided in the feeder by the operator. When the blade supporting disc rotates the kernel pieces are pressed towards its surface. When it comes in to contact with the slicing blade coconut kernel gets sliced. The sliced kernel, coconut chips, is guided towards the outlet by the guide. Coconut chips coming out through the outlet is collected in a tray. Coconut chips of required thickness could be made by adjusting the clearance between the slicing blade and the blade supporting disc. Approximately 25 coconuts can be sliced in one hour using this machine. Fabrication cost of the machine is Rs. 15,000/-

6) **Recommended practices/process:**

* Overall dimension (L x B x H mm): 800X550X1050

* Weight: 40kg

* Prime mover: Manual

* Man power: Manual

* Investment: Rs. 15,000/-

7) **Intended outcome and expected results:** Output capacity: 25 coconuts per hour

8) **Specific advantages:**

* Efficiency: 25 coconuts per hour * Unit cost of operation: Rs.1 per coconut * Slicing coconut kernel

9) **Limitations if any:** Suitability for crop: Coconut

10) **Quantification of cost reduction and other benefits for all technologies:**

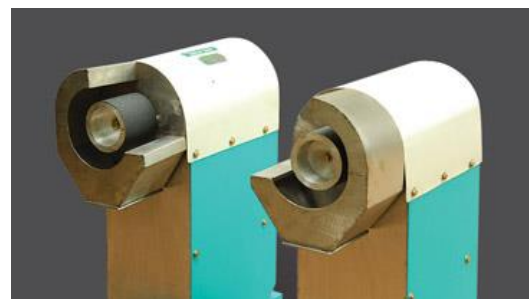
11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**

79.



1) **Title of technology:** Coconut Testa Removing Machine

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on PHT,

Central Plantation Crop Research Institute, KASARGOD, Kerala.

5) **Technology description:** The machine consists of a circular wheel covered with an emery cloth or water paper. This friction wheel is rotated using an electric motor. Coconut kernel is pressed to the surface of the rotating friction wheel either by hand or using a fork. Removed testa is collected at the bottom. The emery cloth/ water paper needs to be replaced periodically when the surface gets smoothed. One person can remove testa of about 75 coconuts per hour. Fabrication cost of the machine is Rs.25,000/-

6) **Recommended practices/process:**

* Input/raw material

* Overall dimension (L x B x H mm): 750X550X950

* Weight: 60kg

* Prime mover: Electrical motor

* Power (hp): 1hp

* Man power: Manual

* Investment: Rs. 25,000/-

7) **Intended outcome and expected results:** Output capacity: 25 coconuts per hour

8) **Specific advantages:**

* Efficiency: 25 coconuts per hour

* Unit cost of operation: Rs.0.30 per coconut

* Removing coconut testa

9) **Limitations if any:** Suitability for crop: Coconut

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**



1) **Title of technology:** Honey processing unit

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on PHT,

College of Agricultural Engineering and Technology, PAU Ludhiana. Punjab

5) **Technology description:** The commercially available heating cum filtration units are very costly and small entrepreneurs could not buy. The small entrepreneur can process honey in production catchment itself with heating cum filtration unit designed by Ludhiana centre. The heating section consists of a double walled cylinder and two electric heating elements filled with water and attached with a pump for recalculate the water for maintaining uniform temperature profile throughout the heated honey. The heated honey is passed to the filtration unit through the hole provided at the bottom of the inner cylinder and extended through a pipe having gate valve. The filtration cylinder consists of lid of four layered muslin cloth. The operator was comfortable while working with the machine.

6) **Recommended practices/process:**

* Raw material

* Overall dimension (L x B x H mm): 686x686x524 mm

* Weight: 80 kg (approximately)

* Prime mover: 0.25 hp motor

* Man power: One

* Investment: Rs. 35000/ (cost of the machine only, as the machine is proposed for existing entrepreneurs)

7) **Intended outcome and expected results:** Output capacity: 50 kg/ batch

8) **Specific advantages:**

* Efficiency: 99 %

* Unit cost of operation: Rs. 2/ kg

* Integrated honey heating cum filtration system is used for processing of raw honey without deteriorating its quality.

*The machine cost is low as compared to commercially available, and easy to handle.

9) **Limitations if any:** Suitability for crop: Honey.

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**

1) **Title of technology:** Hand operated wild apricot decorticator

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

Dept. of Process and Food Engg, G. B. Pant University of Agriculture & Tech., Pantnagar, Uttaranchal

5) **Technology description:** Apricot decorticator (hand operated) is used to decorticate the bitter apricot pit into husk (stone) and kernels. Decortications of apricot stone (pit) is done by passing them in between two cylindrical rollers moving in inward direction.

6) **Recommended practices/process:**

* Raw material

* Overall dimension: 62x80 cm² floor area and 112 cm height

* Weight: 80 kg

* Man power: 2

* Investment: Rs 8700

7) **Intended outcome and expected results:** Output capacity: 60 kg/h

8) **Specific advantages:**

* Efficiency: 87% for decortications

* Unit cost of operation: Rs. 0.40/kg apricot stone

* Decortications of wild apricot

9) **Limitations if any:**

*Suitability for crops/commodity: Apricot and other nuts (plum, almond, etc.) can be decorticated.

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. Investment analysis:

ii. Is it suitable for custom hiring or actual purchase:

iii. Others, if any:

1) **Title of technology:** Apricot stone grader

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

Dept. of Process and Food Engg, G. B. Pant University of Agriculture & Tech., Pantnagar, Uttaranchal

5) **Technology description:** Machine is used to grade the bitter apricot pits on the basis of size. Pits are graded in four grades using three sieves of different sizes and one pan at bottom. The grader is pedal operated.

6) **Recommended practices/process:**

* Raw material

* Overall dimension: 88x34 cm² floor area and 100 cm height

* Weight: 42 kg

* Man power: 2

* Investment: Rs 4000.00

7) **Intended outcome and expected results:** Output capacity: 150 kg/hr.

8) **Specific advantages:**

* Efficiency: 86 %

* Unit cost of operation: Rs 6500.00 per month

* To grade the bitter apricot pits according to their size.

9) **Limitations if any:** Suitability for crops/commodity: Bitter apricot pit, apricot pit, almond.

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**

1) **Title of technology:** Pedal operated Fig Pressing Machine

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on Post Harvest Technology, UAS Raichur

5) **Technology description:** The pedal operated fig fruit pressing machine is basically a sewing machine. The machine consists of a base plate fixed on plywood top and an upper movable plate for pressing the dried fruits. By operating the pedal of the machine, the crank wheel converts rotary motion into reciprocating motion and is transferred to the movable plate. The gap between the pressing plates is set at 70mm so as to allow the operator to keep the dried fruit on the base plate. At the end of pressing stroke, 7mm gap is provided to avoid damage to the fruit. One complete revolution of the crank gives the desired reciprocating motion. The time required for one revolution is 3 seconds. The capacity of the machine is 25 kg of dried fruit per hour.

6) **Recommended practices/process:**

* Overall dimension: 880 x 620 x 1170 mm

* Weight: 40 kg

* Man power: One person

* Power: Manual

* Investment: Rs. 1,500 / -

7) **Intended outcome and expected results:** Output capacity: 25 kg per hour

8) **Specific advantages:**

* Efficiency: 95 – 98 %

*Unit cost of operation: Rs. 0.52 / kg

* Fig fruits are highly perishable in nature and can be kept for only a week at 0°C at 90% RH. The fig fruits are pressed by hand or by some crude country vice after drying in order to reduce their bulk for convenience of transportation. The developed fig pressing machine can be used to press the dried fig fruits locally and can replace the imported (from Afghanistan) figs in the local market. The capacity of the machine is 25 kg of dried fruits per hour. The pressed fruit can be stored in HDP pouches for about 3 months at ambient condition.

9) **Limitations if any:**

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**

1) **Title of technology:** Natural Convection Solar Dryer [Mini-multi rack solar dryer]

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on Post Harvest Technology, UAS Raichur

5) **Technology description:** The mini-multi rack solar dryer consists of a transparent glass cover for transmitting solar radiation, aluminium trays (five numbers) for loading the produce, GI sheet coated with dull black paint to absorb maximum solar radiation, a wooden cover with saw dust as insulating material to minimize the thermal losses and a main cabinet made out of wood for housing different parts of the dryer. The fresh air enters the cabinet through the holes made in the bottom of the dryer. The solar radiation falling on the dryer is transmitted by the transparent glass, which is absorbed by the absorber plate. Then the air gets heated and rises upwards as it becomes less dense. The hot air while moving upward removes the moisture from the product kept on the trays and exits through the holes made at the top of the dryer. This dryer saves 40 per cent of drying time with superior quality dried products over open sun drying.

6) **Recommended practices/process:**

* Overall dimension: 1360 x 600 x1455

* Weight: 65 kg * Man power: 1 person

* Land: 3 square meter * Investment: Rs. 2000/-

7) **Intended outcome and expected results:**

* Output capacity: 15 kg of horticulture produce dried per batch.

8) **Specific advantages:**

* Efficiency: 85-90% * Unit cost of operation: Rs. 1.0 – 1.5 per kg

* Traditionally, the food products are dried by spreading in open sun in thin layer. Though this method is economical and simple, it has the draw backs like; no control over the rate of drying, non-uniform drying, chances of deterioration and loss due to exposure of products to rain, dust, storm, birds, rodents, insects and pests. Whereas, solar drying system overcomes all those problems and ensures better quality of dried products, there by fetching higher price for the dried products.

9) **Limitations if any:**

*Suitability for crops/commodity: Fruits & vegetables, fish, medicinal plants, snack foods

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**

1) **Title of technology:** Forced Convection Solar Drying System

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on Post Harvest Technology, UAS Raichur

5) **Technology description:** The forced convection solar drying system consists of six air heaters, conveying unit, auxiliary heating unit, blower and two drying chambers. The solar radiation is transmitted by the glass cover of the air heater in which the air gets heated. This hot air is conveyed by an A.C. driven centrifugal blower into the drying chambers in which the products are kept on the trays. An electric heater is provided to supplement the heat during low solar radiation and for continuous drying during night period if required. This system ensures uniform drying of products and saves 50 per cent of drying time with superior quality dried products over open sun drying

6) **Recommended practices/process:**

* Input/raw material: Wood, G.I. Sheet, Aluminum sheet, Glass, Mesh, PVC pipe

* Overall dimension: 725 x 600 x 1800

* Weight: 60 kg

* Prime mover/ Plant & Machinery: Blower, Heater

* Power: 3 Phase power/supply

* Man power: 2 to 3 persons

* Land: 40 m² area of land for installation of the system

* Investment: Rs. 2,00,000/-

7) **Intended outcome and expected results:** Output capacity: 70-80 kg of horticultural produce/ batch

8) **Specific advantages:** Unit cost (per machine): Rs. 60,000 /-

9) **Limitations if any:** Suitability for crops/commodity: Cereals, Pulses, Fruits and vegetables

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**

1) **Title of technology:** Dried Apricot grader

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on PHT, Sher-e-Kashmir University of Agri. Sciences and Technology, SRINAGAR, J&K.

5) **Technology description:** In Ladakh division, it was observed that the dried Apricots are sold as a mixed lot without any grade specification. Need was felt for size grading of dried apricots for better returns to the people involved in the trade. In this context a manually operated Apricot grader with 200-250 kg/h capacity was fabricated by Srinagar centre. The dimensions of sieve holes are: 1st Sieve = 3.8x3.8cm, 2nd Sieve = 2.54x2.54cm, 3rd Sieve = 2.10x2.10cm. The height of the grader above ground is 110 cm (body= 66 cm and base 43 cm) and length of the handle (arm) is 20 cm. Apricot can be graded into four grades base on the size of apricot. The specifications (i.e., length and breadth) of the grades are given as:

Grade 'A' = 29.73 x 28.60 mm

Grade 'B' = 26.34x22.66 mm

Grade 'C' = 23.30x20.44 mm

Grade 'D' = 18.33x15.26 mm

6) **Recommended practices/process:**

* Raw material: Un-graded dried Apricots

* Overall dimension: Body (56x51 cm), Sieves (41x41 cm)

* Weight: 45kgs.

* Prime mover/ Power: Hand operated

* Man power: 2 persons/day for 8 hours

* Land: Can be operated with a space of 8x10 feet

* Investment: Rs 2800/-

7) **Intended outcome and expected results:** Output capacity: 200-250 kg/h

8) **Specific advantages:**

* Efficiency: 81.4 - 92.5 % * Unit cost of operation: Rs 40/qtl.

* For grading of Apricots on the basis of size particularly in Ladakh region.

9) **Limitations if any:** Suitability for crops/commodity: Most suitable for grading of dried Apricots.

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. Investment analysis:

ii. Is it suitable for custom hiring or actual purchase:

iii. Others, if any:

1) **Title of technology:** Walnut dehuller

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on PHT, Kashmir University of Agri. Sciences and Technology, SRINAGAR, J&K.

5) **Technology description:** After harvesting green walnuts are heaped under the tree for 10-15days to get the hulls loosen due to heat generation. The heaped green walnuts are then subjected to manual dehulling by either rubbing the green walnuts with one other or by beating them by wooden logs. The juglone dye (5-hydroxy-1, 4-naphthalenedione) present in the hull gets permanently stained on the hands of workers, which takes not less than two months to go off. In order overcome the above mentioned problems the Srinagar Center AICRP on PHET has developed a walnut dehuller and also standardized the pre – chemical treatment for hull dehiscence.

The walnut dehuller was found to be most effective when green walnuts were sprayed with ethephon (0.3%) as a pretreatment for hull dehiscence and were subjected to dehulling 4 days after spraying.

6) **Recommended practices/process:**

* Raw material: Green walnuts

* Overall dimension: Front View:1375 mm x 880 mm Side view: 1375 mm x 480 mm

* Weight: 65 kgs.

* Prime mover/ Power: Power operated (1 HP Motor)

* Manpower: 1 person for 4hrs dehulling the one ton of green walnuts –one person is required for 4hrs.

* Land: Can be operated with a space of 3.4×2 feet

7) **Intended outcome and expected results:** Output capacity: 250 kg/hour

8) **Specific advantages:**

* Efficiency: 95.97%

* Unit cost of operation: Rs. 102/Tonne

* Walnut dehuller was developed to suit the hilly regions of J&K state.

9) **Limitations if any:** Suitability for crops/commodity: Suitable for dehulling of green walnuts.

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**

1) **Title of technology:** Black Pepper Decorticator

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on PHT, Kerala Agricultural University, TAVANUR, Kerala.

5) **Technology description:** Chilli is grown on about 58,700 ha in Vidharbha, which requires about nine tones chilli seed for raising seedling. Presently the chilli seed is extracted by filling in bags and beating with wooden sticks. This is a tedious method. Inhalations of fine particles result in continuous sneezing and irritation of labor's body. Due to this, it is difficult to get the labor for this operation. The problem becomes more severe on large scale i.e. in seed processing plants, seed companies, etc. This method has low output and efficiency. To avoid this drudgery, a chilli seed extractor was developed with 100-125 kg/h capacity operated by 2.0 hp single phase electric motor. The recovery of seed from chilli fruits is about 94-99% at 9-10% m.c. (wb) with no deterioration on seed germination. It being a closed system minimizes the sneezing and body irritation. The cost of machine is Rs. 43000/-.The unit is commercially available.

6) **Recommended practices/process:**

- * Input/raw material: Red dried chilli
- * Overall dimension: 1.42 X 2.44 X 1.78 m
- * Weight: 413 kg
- * Prime mover: 2 hp single phase electric motor
- * Man power: 1 skilled and 1 unskilled
- * Land: 25 m²
- * Investment: Rs. 43,000/-

7) **Intended outcome and expected results:** Output capacity: 100-125 kg/h

8) **Specific advantages:**

- * Efficiency: 94-99% seeds from chilli fruits (at 9-10% m.c (wb))
- * Unit cost of operation: 64 Rs/q
- * Extraction of seeds from dried red chilli pods

9) **Limitations if any:** Suitability for crop: Dried chilli pod.

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

- i. **Investment analysis:**
- ii. **Is it suitable for custom hiring or actual purchase:**
- iii. **Others, if any:**

1) **Title of technology:** Mobile Starch Extraction Plant

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on PHT, Central Tuber Crops Research Institute, Thiruvananthapuram .

5) **Technology description:** The major components of the machine are hopper to feed the tubers, crushing disc or cylinder with nail punched protrusions rotating inside crushing chamber to crush the tubers, sieving tray to remove the fibrous and other cellulosic materials, stainless steel or plastic tanks to collect the sieved starch suspension, tuber storage chamber, handle and wheels for easy transportation from place to place and a frame to support these components. Addition of water during the processing can be controlled through a water pipe with holes fixed inside the hopper along its length and during sieving by a shower attachment connected to the water line. An electric motor ($\frac{3}{4}$ hp) or a generator (kerosene-petrol) attached to the frame can be used as the energy source to operate the machine.

6) **Recommended practices/process:**

* Inputs required:

* Raw material: Cassava Tubers and water

* Over all Dimensions: 1350 x 1800 x 1320 mm

* Weight (kg): 165 kg

* Power: $\frac{3}{4}$ hp , single phase

* Man power: one

7) **Intended outcome and expected results:** Out put capacity: 120-200 kg/h.

8) **Specific advantages:**

* Efficiency: 85%

* Unit cost of operation: Rs.3/-per kg starch

* The mobile starch extraction plant is a cost effective The mobile starch extraction plant is a cost effective producers and thus avoids the exploitation of the farmers by middlemen.

9) **Limitations if any:** Suitability for crops/commodity: Cassava, sweet potato, *Amorphophallus*

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**

90.



1) **Title of technology:** Garlic Bulb Breaker

2) **Category classification:** Farm Machineries and Implements .

3) **Year of release:**

4) **Technology source/acknowledgements:**

Research Engineer, AICRP on PHT
College of Technology & Argil. Engineering,
Maharana Pratap University of Agricultural & Technology,
Udaipur- 313 001 (Rajasthan)

5) **Technology description:** Bulb breaking i.e. separation of individual cloves from garlic bulbs is the first and foremost unit operation in processing of garlic. Further, the individual cloves are also used as seed material. The machine consists of a hollow cylinder with cushioned battens, a concave, an aspirator and a prime mover. The cloves are separated because of the beating action of battens and friction between bulb and concave. Aspirator separates the light paper skin, root and middle stem of bulb. Clean cloves are collected along the chute below the concave. A manual operated model with 50-kg/hr capacity is also available for small entrepreneurs & farmers. It has generated lot of interest in garlic cultivation belt of MP & Rajasthan for separating individual cloves for seed purposes.

6) **Recommended practices/process:**

- * Overall dimension: 660 mm x 1000 mm x 1130 mm
- * Weight: 85 kg
- * Plant & Machinery: Machine with motor
- * Investment: Rs 24,000/-
- * Prime mover: Electric motor
- * Power: 1 hp, Single phase electric motor
- * Man power: 1 unskilled labours

7) **Intended outcome and expected results:** Output capacity: 800 kg bulb/hr

8) **Specific advantages:**

- * Efficiency: Clove separation eff.: 94-95 %
- * Unit cost of operation: Rs 2.50 /q of cloves
- * Machine facilitates in the gentle separation of individual cloves from garlic bulbs. The machine has utility for garlic processors industries, seed industries and farmers.

9) **Limitations if any:** Suitability for crops/commodity: Garlic

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

- i. Investment analysis:
- ii. Is it suitable for custom hiring or actual purchase:
- iii. Others, if any:



1) Title of technology:

Peeler cum Polisher for Ginger and Turmeric

2) Category classification: Farm Machineries and Implements

3) Year of release:

4) Technology source/acknowledgements:

AICRP on PHT, Maharana Pratap University of Agricultural & Technology, Udaipur, Rajasthan

5) Technology description: A simple machine was developed to peel the outer skin from fresh ginger rhizomes and abrade off outer shriveled skin of dried rhizomes of ginger and turmeric. The peeling operation helps in faster drying and polishing facilitates in value addition & quality improvement of dried rhizomes. The machine works on the principle of friction and abrasion. It consists of a perforated drum with a common opening for feeding and discharge of rhizomes. The machine has a perforated drum coated with emery strips at inner surface. The drum is rotated at 40 rpm. Water supply through hollow shaft helps in removal of peel/skin through the drum perforation. In case of polishing dehydrated rhizomes, water supply is disconnected. Effective output of machine has been worked out as 40-50 kg/h *vis a vis* 30 and 50 kg/day through manual and gunny bag peeling. 30 machines have supplied. About 30 machines have been supplied.

6) Recommended practices/process:

- * Overall dimension: 900 mm x 700 mm x 1070 mm * Weight: 57 kg
- * Prime mover: Electric motor * Plant & Machinery: Peeler-Polishing machine, dryer
- * Power: 1 hp single phase motor * Man power: 1 unskilled labour
- * Investment: Rs 20,000/- * Operational efficiency: 75-80%

7) Intended outcome and expected results:

*Output capacity: 8 kg batch in 8 to 10 min i.e. 40-50 kg /hr for peeling & 50-60 kg/hr for polishing

8) Specific advantages:

- * Efficiency: 80% * Unit cost of operation: Rs 25 /q rhizome
- * The machine has application for peeling of fresh ginger rhizomes and smoothening/ value addition of dried rhizomes of ginger and turmeric. It has utility for processors.

9) Limitations if any: Suitability for crops/commodity: Ginger, carrot, turmeric

10) Quantification of cost reduction and other benefits for all technologies:

11) Quantification of cost reduction and other benefits specific to farm machinery

- Investment analysis:
- Is it suitable for custom hiring or actual purchase:
- Others, if any:



1) **Title of technology:** Garlic Clove Flaking Machine

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on PHT, Maharana Pratap

University of Agricultural & Technology, Udaipur, Rajasthan.

5) **Technology description:** A garlic clove flaking machine has been developed to press the cloves gently in order to facilitate faster drying. The machine has 2 rollers fixed in horizontal plane side by side with clearance adjustment to accommodate the maximum size individual garlic clove. The roller rotates in opposite direction with the help of chain-sprocket arrangement. Roller clearance of 5 and 10 mm was found optimum for flaking of normal and bold size cloves, respectively. The machine can also be operated manually with capacity 80-100 kg/h. About 15 machines have been supplied.

6) **Recommended practices/process:**

*Input/raw material: Garlic cloves

*Overall dimension; 75 mm x 550 mm x 1200 mm

* Weight: 65 kg

* Prime mover: Electric motor

* Plant & Machinery: Machine with motor-starter

* Power: 1 hp, Single phase electric motor

* Man power: 1 unskilled labours

* Investment: Rs 22,000/-

* Operational efficiency: 80%

7) **Intended outcome and expected results:**

* Output capacity: 420 kg /hr (80-100 kg/hr manual operation)

8) **Specific advantages:**

* Efficiency: 82-87%

* Unit cost of operation: Rs 5/q of cloves

* Machine facilitates in the gentle flaking of individual garlic clove fasten the dehydration process.

9) **Limitations if any:** Suitability for crops/commodity: Garlic

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**

93.



1) **Title of technology:** Solar Dryer

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on PHT, Maharana Pratap

University of Agricultural & Technology, Udaipur, Rajasthan.

5) **Technology description:** A natural convection, solar energy based tray type dryer was developed to dry various kind of perishables/semi-perishables. The dryer has 12 no. of wire mesh trays and two drought pipes with aspirator to induce the natural convection. The whole structure is made such that the front glass cover is inclined at an angle of latitude of Udaipur plus 15°. A 25-mm wide slit at the bottom of cabinet is provided for entry of fresh air to dryer. The dryer has capacity of 60 to 75 kg/batch and requires 2-3 man- hr/days.

6) **Recommended practices/process:**

* Overall dimension: 2600 mm x 2100 mm x 1930 mm

* Weight: 270 kg

* Prime mover: Solar energy

* Plant & Machinery: Solar dryer

* Power: Solar energy

* Man power: 1 unskilled labours

* Land: 100 Sq m

* Investment: Rs 35,000/-

7) **Intended outcome and expected results:** Output capacity: 60 to 75 kg/batch

8) **Specific advantages:**

* Efficiency: 75%

* Unit cost of operation: Rs. 2-3 per kg

* Operational efficiency: 75%

* The solar dryer is useful for drying of perishable & semi perishable commodities at production catchment.

9) **Limitations if any:**

* Suitability for crops/commodity: Perishable and semi perishable agricultural produce.

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**



1) **Title of technology:** Garlic grader

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on PHT, Maharana Pratap

University of Agricultural & Technology, Udaipur, Rajasthan.

5) **Technology description:** Garlic grading machine has been developed to grade garlic bulb/cloves on overall size basis. The machine consists of a rotary frame for mounting two sieves, an aspirator, a hopper and bottom discharge troughs for collection of graded material. As per Agmark specs. rules 2004 (<http://agmarknet.nic.in/fveggmrules04.htm#garlic>), the screen for machine was developed to separate garlic bulb in grades viz. less than 30 mm, between 30-40 mm (Class I & II) and more than 45 mm dia size (Extra class). The machine results in saving of almost 200 % cost over conventional practice.

6) **Recommended practices/process:**

* Overall dimension: 1700 x 700 x 1550 mm

* Weight: 150 kg

* Prime mover: Electric motor –single phase

* Power: 1 hp

* Man power: One

* Investment: 40000/-

7) **Intended outcome and expected results:** Output capacity: 100 kg/h

8) **Specific advantages:**

* Efficiency: 82%

* Unit cost of operation: Rs 30 / q

* For grading of garlic bulbs and cloves/flakes

9) **Limitations if any:** Suitability for crops/commodity: Garlic

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. Investment analysis:

ii. Is it suitable for custom hiring or actual purchase:

iii. Others, if any:

95.

1) **Title of technology:** Turmeric polisher

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on PHT, Maharana Pratap University of Agricultural & Technology, Udaipur, Rajasthan.

5) **Technology description:** The developed turmeric polisher mainly consists of polishing drum, power transmission system and supporting frame. The hexagonal abrasive drum is an important part of the surface abrasive polisher. Turmeric rhizomes were allowed to roll on internal abrasive surface of drum where polishing takes place due to abrasive action of protrusions and rhizomes.

6) **Recommended practices/process:**

* Input/raw material: Turmeric, polishing drum

* Power: 1 hp

* Man power: 1 unskilled

* Operational efficiency: 7.45% in 25 min.

7) **Intended outcome and expected results:** Output capacity: 4-6 kg/batch

8) **Specific advantages:**

* Efficiency Polishing: 7.45%

* Ginger and turmeric polishing

9) **Limitations if any:** Suitability for crops/commodity: Ginger and Turmeric

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**

96.

1) **Title of technology:** Garlic/clove peeler

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on PHT, Maharana Pratap University of Agricultural & Technology, Udaipur, Rajasthan.

5) **Technology description:** The thin papery skin tightly adhered on garlic clove is to be removed for further processing, pickling, paste formulation etc. Batch type garlic clove peeler has been developed on the principal of impact and swirling action of compressed air. The capacity of the developed peeling machine was recorded as 400g/batch in 70 seconds with efficiency of 98 per cent. There is no bruising or damage to peeled cloves.

6) **Recommended practices/process:**

* Input/raw material: Garlic

* Power: Compressed air of 10-15kg/cm²

* Man power: 1 unskilled

7) **Intended outcome and expected results:** Output capacity: 400g/batch in 70 seconds

8) **Specific advantages:**

* Efficiency: 98%

* Garlic clove peeling

9) **Limitations if any:** Suitability for crops/commodity: Ginger and Turmeric

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. **Investment analysis:**

ii. **Is it suitable for custom hiring or actual purchase:**

iii. **Others, if any:**

1) **Title of technology:** Ginger peeler

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

AICRP on PHT, Maharana Pratap University of Agricultural & Technology, Udaipur, Rajasthan.

5) **Technology description:** Indigenous peeling methods is very laborious and time consuming and result in high loss of material and quality. The loss of ginger meat from underneath the skin would result not only in loss of weight but also heavy loss of economic value of ginger. On the demand of local ginger producers the ginger peeling machine was developed and the process parameters of the mechanical peeling were optimized to obtain high peeling efficiency with minimum ginger meat loss. The developed ginger peeler mainly consists of peeling unit, power transmission system and supporting frame. Ginger rhizomes were allowed to roll on abrasive surface of roller brushes where peeling takes place due to abrasive action of nylon wire brushes and rhizomes. Single phase 1 hp electrical motor was used as source of power and chain-sprocket mechanism was used for transmission of power. The developed ginger peeler was found to work satisfactorily with brush wire thickness of 150 gauges at a speed of roller brushes of 115 rpm for peeling time 10 min.

6) **Recommended practices/process:**

* Input/raw material: Ginger

* Power: 1 hp

* Man power: 1 unskilled

7) **Intended outcome and expected results:** Output capacity: 4-6 kg/batch

8) **Specific advantages:**

* Efficiency: 81.25 percent

* Ginger rhizome peeling

9) **Limitations if any:** Suitability for crops/commodity: Ginger

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

i. Investment analysis:

ii. Is it suitable for custom hiring or actual purchase:

iii. Others, if any:

1) **Title of technology:** Low-cost Ginger storage structure

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

ICAR Research Complex for NEH Region, Barapani, Meghalaya

5) **Technology description:** Ginger is the major rhizomatous crop grown by almost every farmer of the north-eastern region. Ginger is sown in NEH region during April & May. Crop matures in 8-9 months and harvesting is done during December and January. Depending upon the prevailing demand, the green ginger (tender rhizome) is also harvested after 6 months of sowing for preservation, pickling and consumption. The mature crop is harvested and rhizome material is separated from the marketable ginger. Subsequently farmers have to dispose of the ginger immediately into the market and accept the lowest rate of their produce because at the time of harvest, the farmers do not get remunerative price. Farmers prefer to store the ginger and its propagative material. The rhizomes storage is essential for the next cultivation

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7) **Intended outcome and expected results:** Crop matures in 8-9 months and harvesting is done during December and January. Depending upon the prevailing demand, the green ginger (tender rhizome) is also harvested after 6 months of sowing for preservation, pickling and consumption. The mature crop is harvested and rhizome material is separated from the marketable ginger.

8) **Specific advantages:**

*. Subsequently farmers have to dispose of the ginger immediately into the market and accept the lowest rate of their produce because at the time of harvest, the farmers do not get remunerative price.

*Farmers prefer to store the ginger and its propagative material.

*The rhizomes storage is essential for the next cultivation

9) **Limitations if any:**

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

iv. **Investment analysis:**

v. **Is it suitable for custom hiring or actual purchase:**

vi. **Others, if any:**

1) **Title of technology:** Low-cost Ginger storage structure

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

ICAR Research Complex for NEH Region, Barapani, Meghalaya

5) **Technology description:** Since harvesting falls in the month of December and January, farmers traditionally do not go immediately for the next cultivation because their farms are unirrigated. They harvest according to the market demand and consumption and allow the rest of rhizomes to remain unearthed in the field. These are dug out at the time of the next sowing. The pros and cons of this practice are;

6) **Recommended practices/process:** A circular or rectangular pit is dug according to the requirement. A thin layer of straw is first spread over the bottom of pit and rhizomes are placed into this layer in the pit up to a little less than the ground level. Again a thin layer of straw covers the rhizomes. The final covering is done with the soil to the ground level. It is opened before the next sowing season and healthy rhizomes are sown.

7) **Intended outcome and expected results:**

In this method, the rhizomes get spoiled in two ways;

- a) around 25-30% rhizomes rot in the pit itself and
- b) about 10-15% rhizomes sprout in the pit are rendered useless for sowing

8) **Specific advantages:**

- *To save the labour for harvesting, handling and storing.
- * About 50% crop spoil due to over maturing, rotting or disease susceptibility.
- * To save the expenditure on additional storage structure.
- *Rhizomes start sprouting in course of time.

9) **Limitations if any:**

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

- i. **Investment analysis:**
- ii. **Is it suitable for custom hiring or actual purchase:**
- iii. **Others, if any:**

1) **Title of technology:** Low-cost Ginger storage structure

2) **Category classification:** Farm Machineries and Implements

3) **Year of release:**

4) **Technology source/acknowledgements:**

ICAR Research Complex for NEH Region, Barapani, Meghalaya

5) **Technology description:** Considering the availability of local material an improved storage-structure for ginger was developed by ICAR Research Complex for NEH Region, Barapani, Meghalaya. It was an indoor structure. The raw material required for the structure consisted of bamboo, clay, cow dung, sand, polythene sheets and galvanized wire. The main components of the structure are clayed bamboo mat wall, split bamboo frame, sand and polythene sheet.

6) **Recommended practices/process:** The schematic and skeleton of the clayed-bamboo wall ginger storage structure is presented in figures. The structure has two chambers of size 2 m x 2 m x 1.4 m (height). The walls of the structure were made of bamboo mat, clay and cowdung. The thickness of the wall is 20 cm; it is double walled with its frame made of bamboo & GI wire. The clay and cowdung paste was poured in the gap of the wall in 4-5 stages at regular intervals with a one day interval up to the complete height (1.4m) of the walls. This filling was kept for drying continuously for 20-25 days. The outer surfaces of the walls were plastered with clay and cowdung paste. After drying the structure is ready for storage of ginger

7) **Intended outcome and expected results:** The ginger was stored in this chamber by alternate layer of dry sand and rhizomes with keeping the thickness ratio of 2.5: 10 cm. The lower and upper layer of sand was kept around 8 cm thick. The top of the chamber was covered with the polythene sheet and sealed from the edges by putting more pressure with the help of split bamboo.

8) **Specific advantages:**

Ginger was kept for five months in such structure. It was observed that there was

- (a) no loss in weight and moisture,
- (b) no sprouting took place,
- (c) no loss due to any infestation and rotting and
- (d) the quality of rhizomes was also maintained.

The structure proved perfect for storing the rhizomes till the period of further sowing. The capacity of the storage in such structure was approximately 4 tonnes of rhizomes. The unit capacity of the structure was evaluated as 350 to 400 kg per cubic meter of space

9) **Limitations if any:**

10) **Quantification of cost reduction and other benefits for all technologies:**

11) **Quantification of cost reduction and other benefits specific to farm machinery**

- i. **Investment analysis:**
- ii. **Is it suitable for custom hiring or actual purchase:**
- iii. **Others, if any:**