Maranta arundinacea-- encouraging results with non-chemical (organic) farming techniques in village of Bhopal district, M.P. India -an effort through awareness and capacity building.

PRESENTED BY
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AREA OF WORK
:*Heart of India*

DISTRICT :BHOPAL,
BLOCK:PHANDA
VILLAGE:DEHRIKALAN

About 40 minutes drive from District Head Quarters

OBJECTIVES AND GRATITUDE

- The objectives of SHWEF (..more visit http://www.shwef.org.in) carried forward from the year 1998 through awareness and demonstrations as operational research by doing baseline studies on chosen themes.
- Heartfelt gratitude to the Ministry of Science and Technology ,Science and Society Division,GOI, New Delhi, to support and catalyze “non-chemical farming on turmeric (*Curcuma longa*) and Arrowroot (*Maranta arundenacea*) cultivation” from the year 2010to 2014.

PROJECT LOCATION

- The area is very small because of limited resources.
- In the year 2000, the area of non –chemical farming was about 6000 sq.ft. only, currently used as seed bank.
- At three places less than half an acre fully fertilized for experimental research is available.
- The village population around the project location is about more than 500 people.
- 6 farmers had come forward, but with limited resources we avoid giving free the seed materials.

ACHIEVEMENTS

- Arrowroot production from an area of 18000 sq. ft
  - In 2013 - 739kg
  - In 2014 - 1381kg
  - Growth and yield high when the crop was grown as intercrop with fenugreek (*Trigonella foenum-gracecum*)
- The produce not sold and kept for further multiplication and propagation.
- With an approximate cost of Rs250/ per kg, it will fetch Rs.446858/- for a production of 1787 kg per acre that can be an additional remuneration for small and marginal farmers!

APPLICATION OF BIOPESTICIDES &GROWTH HORMONES

- Organic fertilizers, wood ash ,bio-pesticides, and growth hormones prepared in the fields has been exclusively used during all these years along with farm yard manures and vermicompost.
- For the purchase of FYM we need to pay high along with labour and travel, rest all low cost and affordable.



UNDER-UTILIZED AND UN-TAPPED RHIZOME

- *Arrowroot or "uraro"* was used by the earlier *Arawak tribe*, natives of West Indies.
- A non-food grain and high value food commodity.
- It is almost free from major pest & diseases. Harvests after 9-10 months.



- In India it was introduced in the year 1831, very limited cultivation now in Kerala.
- Statistics regarding area and production is not available .

ARROWROOT STARCH USED AS:

- The fine powder, is a healthier alternative and the only starch product with calcium ash which is important for the maintenance of proper acid and alkali balances in the human body .
- Its the purest form of carbohydrates, highly digestible making it a suitable ingredient in making infant foods and medicinal tablets.
- Used in making biscuits, pastries, cookies, and other culinary goodies.
- The flour is seen as possible substitute for wheat flour.
- Raw rhizomes used as raw material for cosmetics and alcoholic drinks.

CONSTRAINTS AND HARDSHIPS

- Limited financial resources.
- Hence could not apply for organic certification.
- The tube well does not have water hence need to depend on others or even on water tankers during extreme heat conditions.
- Electricity expenses very heavy , hence disconnected!
- Rat menace and we do not intend to give poison(searching viable alternative methods).
- Small and marginal farmer’s still reluctant not to take up organic farming as Government’s support required with assured networking of their produce.

ISSUES THAT CONCERNS & NEEDS ATTENTION:

- Awareness of arrowroot / flour value yet to be introduced in this part of the country to small and marginal farmers.
- Semi processing technology/Machinery selection.
- Implementation Support.
- Opportunity Assessment.
- Business Plan Development.
- Business Expansion Plan.
- Supply Chain Strategy.
- Inventory, Warehouse and Logistics Management.

ARROWROOT PLANT IN FIELD CONDITIONS AS AN INTERCROP WITH FENUGREEK



MANUAL EXTRACTION OF ARROWROOT RHIZOMES





WASHING OF THE RHIZOMES



HEALTHY CROP OF ARROWROOT



Our research paper publications:

- Simple Farm Techniques for Preservation of "*Maranta arundinacea*" rhizomes. *Padma Harshan et.al* ,Int J Ayu Pharm Chem Vol. 1, Issue 1, 2014,page 24-30
- Application of solar energy for semi processing of *Curcuma long* (Haldi) and *Maranta arundinacea* (Arrowroot) as a source of additional livelihood and entrepreneur activity in the selected villages of Phanda Block of Bhopal District, December 30, 2012,Vol.1, Issue 1, page 20-27, www.jtbsrr.in, Padma Harshan, Madhavi Muchrikar, Uttam Nagwanshi, and Manoj Chourasiya

WORK ON OTHER UNDERUTILIZED & UNTAPPED RHIZOMES IN PROGRESS



Curcuma amada: hindi: amba haldi



Curcuma aromatica,:hindi: jangli haldi, kasturi manjal

THANKS FOR A PATIENT HEARING!!