

Success Story of large scale adoption

CROP DIVERSIFICATION THROUGH GROUND NUT CULTIVATION Var.TAG-24 IN RED AND LATERITIC AREAS OF PASCHIM MEDINIPUR DISTRICT OF WESTBENGAL

1. Background

Ground Nut is one of the most important oil seed crops in India after Mustard and it is mostly cultivated mainly in Gujrat, Rajasthan, Maharastra, Madhya Pradesh and some parts of West Bengal, Orissa and Jharkhand.

The area, where ground nut crop is popularised in the red and lateritic belt belonging to sub-tropical climate, having average rainfall of 1200 mm (+ 236.14mm SD) and 80% of rainfall received during June to September. Temperature varies from 16-42⁰C. Due to undulating land, the soil is highly eroded in nature. The soil texture found to be sandy to sandy-loam in nature and the soil fertility levels are very poor with low N, P and K status as well as organic matter, rich in iron and aluminium content and deficient in Ca, Mg, B, Mo. The soil has poor water retention capacity and erosion prone having soil pH varies from 5-5.5. 37% of the area is under drought prone and 63% of the net cultivable area has been brought under irrigation.

Farmers are acquainted with the cultivation of boro paddy in rabi-summer and aman-paddy in kharif season in the above mentioned area, but situation is not congenial for boro-paddy cultivation due to water scarcity in the pond and ground water level is going down. It has been found that for boro- paddy cultivation, water requirement is 50-60 acre-inch and feed by 16-20 numbers of irrigations. So, farmers have failed to harvest this crop as per expectation due to scarcity of water. In this prevailing situation, they are searching for alternative commercial crops in Rabi/Summer in stead of boro-paddy, where water requirement would be less. The existing farming system, before our intervention on the said land was paddy-paddy-fellow.

KVK has conducted Agro-ecosystem analysis through PRA in the different villages to solve the above cited problems and in process of searching alternate commercially crop which would be ideally suited in this climate. The above mentioned basic information like temperature, humidity, sunlight and soil are ideally suited for groundnut cultivation. It has been decided to take up ground nut cultivation for this area by considering the all situations, because water is required only 10-12 acre-inch (4-5 irrigations), which can be provided by the farmers.

2. Technology/Process which was intervened for its success

- Introduction of new variety:



- i. Assessment of different varieties through OFT.
- ii. Organize ON and OFF campus training on cultivation practices on identified variety TAG-24 to the practicing farmer and Extension functionaries.
- iii. Conducted FLD on identified variety, TAG-24

- **Agro-Techniques:**

- i. **OFT :**
 - Seed treated with *Rhizobium spp* @ 750gm/ha.
 - Soil application of Gypsum @ 500kg/ha during top dressing after 30 days of seed sowing and Boric acid @ 2.0 gm/l of water after 15 and 30 days of seed sowing.
 - Pest management: Control of severe attack of Aphid by foliar application of Neem based liquid 50,000ppm @ 0.75 ml/l of water followed by Endosulfan @ 2ml/l of water at spot spraying.
- ii. Organize ON and OFF campus training on agro-techniques, this has been identified through OFT to the practicing farmers and Extension functionaries.
- iii. Conducted FLD on identified agro-techniques.

- **Workshop and Exhibition:**

Every year, Krishi Mela is being organized for agricultural produce for the participating of farmers, farmwomen, rural youths, farm science clubs, SHGs etc



3. Effect of the technology / process on

- **Area:**
 - i. Rabi-summer: 140ha
 - ii. Kharif: 10ha

- **Productivity:**

i. Rabi-Summer: 20qt/ha

ii. Kharif: 12qt/ha



- **Economics gains (per unit expenditure, gross income, net income, B:C ratio):**

Sl.No.	Season	Expenditure Rs./ha	Gross income Rs./ha	Net income Rs./ha	B:C ratio
1.	Rabi-Summer	25,000.00	50,000.00	25,000.00	2:1
2.	Kharif	20,000.00	36,000.00	16,000.00	1.8:1

- **Suitability in the existing farming / cropping systems:**

i. Environmentally suitable: The temperature, humidity, sunlight and soil are congenial for vegetative and reproductive growth for groundnut cultivation during above mentioned seasons. The fertility of soil has been enriched due to the beneficial effect of micro-organisms and water holding capacity of the soil also increased.

ii. Economically Viable: It has been found that, net income per hector in boro-paddy cultivation was Rs.12,000.00, whereas net return by ground nut cultivation has been enhanced to Rs.25,000 and 16,000.00 from Rabi-Summer and Kharif season respectively. Organic matter of the soil also increased, resultant to less requirement of fertilizer in next cropping season.

iii. Present cropping pattern: Paddy-Ground nut-Fellow
Ground nut-Fellow-Fellow

- **Acceptance of technology / process in terms of views of the farmers**


Farmers of Jhargram Sub Division are impressed with the technique in respect to good return in




comparison to other crop , improved soil fertility and less requirement of water during cultivation. Through FLD programme of SBKVK, on variety and agro-techniques by full package and component demonstration, covered an area of 75 ha only during last five years. The area of Ground Nut cultivation has been enhanced to 150ha of land during rabi-summer and kharif during the year under report. This clearly indicates 20% growth rate annually.

- **Horizontal spread**



Sl. No.	Year	Demonstration Area (Ha)		Village	Area Extended (Ha)
		Khariff	Rabi		
1	2005-06	5	10	Jamrasuli, Dhuliapur, Asthapara, Tura	10.0 
2	2006-07	5	10	Baghari, Chandabilla, Rajpara, Bhgabandh	20.0
3	2007-08	5	10	Pathra, Kantasola, Kapgari, Bhagabandh	30.0
4	2008-09	5	10	Pathra, Kesda, Asakathi, Sarangasuli, Kendasuli	40.0

5	2009-10	5	10	Bijrabandhi, Bhandaru, Enata, Bhagabandh	50.0	
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- **Substitution or replacement of commodities**

The variety TAG-24 is introduced through FLD and gradually it is dominated over AK12/24, JL-24 and TMV-2.

- **Social Impact (Formation of clubs, groups, federations etc)**

Ground nut cultivation is labour oriented as compared to paddy-cultivation. Normally 210 numbers of man days is required for one hectare ground nut cultivation. In this context more numbers of man days have been created which prevent the labour migration from this area to other part of this district/neighboring district. Previously the product is marketed in the market at Panskura, Purba Medinipur district of West Bengal which is far away and farmers are not getting proper return due to exploitation of middle man. Now regular markets for Ground Nut have developed in Paschim Medinipur in the different places like Gopiballavpur-I, Gopiballavpur-II, Nayagram Binpur, Sildha and many go downs has been established by the farmers Co-operatives and buyers. The essential inputs required for this cultivation is easily available in the local market. The farm science clubs have been formed by this KVK and their involvement in present activities is given below.



Sl.No.	Name of the Farm Science Clubs/SHGs	Address	Activities
1.	Jamirasuli farmers Club	Vill + Post - Jamirasuli, Binpur-II, Jhargram, Paschim Medinipur	Organizing training, Supply of critical inputs, Field days

2.	Asthapara pallimangal Farm Science Club,	Vill-Asthapara,Post-Kadodiha, Jamboni, Jhargram, Paschim Medinipur	Do
3.	Rajapara Navaiivan Farmers Club	Vill-Rajpara, Post-Ergoda, Binpur-II Jhargram, Paschim Medinipur	Do
4.	Pathra SC Farmers Club	Vill-Pathra, Post-Asakathi, Binpur-II Jhargram, Paschim Medinipur	Do
5.	Bhagabundh farmers Club	Vill-Bhagabandth + Post-Silda, Binpur-II Jhargram, Paschim Medinipur	Do
6.	Sirshi Shashya shyamala Farmers Club	Vill-Sirshi, Post-Harda, Binpur- II Jhargram, Paschim Medinipur	Do

- **Marketing channel**

The rabi-summer produce is easily marketable. Farmers have stored unsold product at their own capacity for 3-4 months in seed beans by adopting KVK's technology. The stored seeds are being sold when market price will be coming up to expectation. Kharif season produce has a great demand for seed purpose during rabi-summer cultivation in this area or near by district. Rabi-summer produce is marketed in the local market through Co-operatives, small and big buyers at the rate of Rs.2000.00/qt. for table purpose and Rs.3000-4000.00/qt. for procurement of seed. 2 processing units have been established in Gopiballavpur and Panskura.

- **Establishment of process / units**

The process has been established through OFT, FLD, Field Days, Training, Exhibition and work shop. The district line department also extend support in terms of awareness programme through extension functionaries.

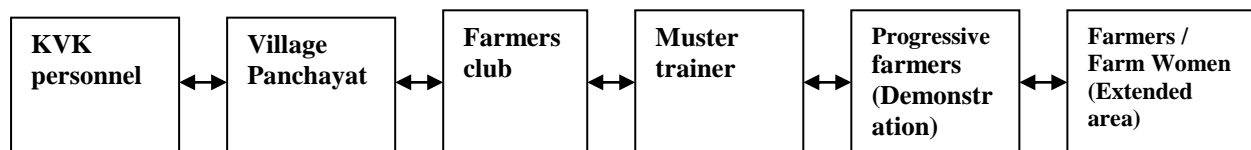
- **Linkage with technology development organizations**

- Seeds are procured from NRCG, Junagarh, Gujrat, India
- Technology back up in collaboration with BCKV, Mohanpur, Nadia, West Bengal

- **Models / CDs developed, if any**

For successful of Groundnut production technology in adoption and parallel spread out in the KVK adopted villages and adjoining village of KVK operational area is based on some appropriate bulletin, News letter and leaflet circulated to the farmers through farmers club, progressive farmers and Panchayat system. KVK mainly provide full package of Practice (technology), monitoring and supervision in regular basis and organized field days in collaboration with state agricultural

departments. KVK has followed under mentioned deliverable extension mechanism for wide publicity and accessibility of Groundnut production technology.



- **Places and address of concerned farmers or persons who could be contacted**

Sl.No.	Name	Address	Places
1.	Bhunath Karmakar	Vill + Post- Jamirasuli, Binpur-II, Jhargram, Paschim Medinipur	Pashim Medinipur, West Bengal
2.	Durgaprasad Kundu	Do	Do
3.	Phanibhusan Kuaila	Do	Do
4.	Ambika Kuaila	Do	Do
5.	Bikash Kuaila	Do	Do
6.	Joydev Kuaila	Do	Do
7.	Bidhan Kuaila	Do	Do
8.	Amrit Mandal	Do	Do
9.	Ashok Mandal	Do	Do
10.	Muktipada Mandal	Do	Do
11.	Harendranath Hasda	Do	Do
12.	Bimal Murmu	Do	Do
13.	Monohar Saren	Do	Do
14.	Balaram Dey	Do	Do
15.	Sambhu Koley	Do	Do
16.	Mihir lohar	Do	Do
17.	Sova Ram Dey	Do	Do
18.	Badal Lohar	Do	Do
19.	Modanmohan Mandal	Do	Do
20.	Anadi Karmakar	Do	Do
21.	Utpal Kundu	Do	Do
22.	Sukumar Kundu	Do	Do
23.	Amlan Kailya	Do	Do
24.	Asit Mandal	Do	Do
25.	Joydev mandal	Do	Do
26.	Manindranath Kailya	Do	Do
27.	Arun Kundu	Do	Do
28.	Srihari Mandal	Do	Do
29.	Basudev Mandal	Do	Do
30.	Chandan Kailya	Do	Do
31.	Ramapada Kundu	Do	Do
32.	Shyampada Kundu	Do	Do
33.	Ganesh Mandal	Do	Do
34.	Pulak Mandal	Do	Do
35.	Ujal Mandal	Do	Do

36.	Sasthi Kundu	Do	Do
37.	Bidur Kailya	Do	Do
38.	Sasthi Kailya	Do	Do
39.	Haradhan Kailya	Do	Do
40.	Madhusudan Mandal	Do	Do
41.	Amiya Mandal	Do	Do
42.	Ananta Bej	Vill-Asthapara,Post-Kadodiha, Jamboni, Jhargram, Paschim Medinipur	Do
43.	Kamal mandal	Do	Do
44.	Niranjana Bej	Do	Do
45.	Swapan Bej	Do	Do
46.	Biren Bej	Do	Do
47.	Jagadish Bej	Do	Do
48.	Sukumar Bej	Do	Do
49.	Tapan Bej	Do	Do
50.	Kankan Santra	Do	Do
51.	Swapan Rout	Do	Do
52.	Ashis Nayek	Do	Do
53.	Sisir Ahir	Vill-Kusda, Post-Ergoda, Binpur-II Jhargram, Paschim Medinipur	Do
54.	Ananda Ahir	Do	Do
55.	Paritosh Bhagat	Do	Do
56.	Santosh Bhagat	Do	Do
57.	Chiltu Ahir	Do	Do
58.	Sudan Hasda	Do	Do
59.	Bajun Hasda	Do	Do
60.	Sibu Murmu	Do	Do
61.	Mangal Murmu	Do	Do
62.	Dura Hasda	Do	Do
63.	Sachin Hasda	Do	Do
64.	Bhabesh Ahir	Vill-Rajpara, Post-Ergoda, Binpur-II Jhargram, Paschim Medinipur	Do
65.	Harekrishina Mahata	Do	Do
66.	Umasankar Mahata	Do	Do
67.	Chatu ram Mahata	Do	Do
68.	Hiralal Mahata	Do	Do
69.	Samir Mahata	Do	Do
70.	Bhaktibrata Mahata	Do	Do
71.	Harish Das	Do	Do
72.	Gopal Ahir	Do	Do
73.	Chunaram Ahir	Do	Do
74.	Handa Sen	Do	Do
75.	Lulu Hasda	Do	Do
76.	Iswar Mahata	Do	Do
77.	Kashinath Nayek	Do	Do

78.	Bhagirath Mahata	Do	Do
79.	Manoj Mahata	Do	Do
80.	Madhusudan Mahata	Do	Do
81.	Rakhal Mahata	Do	Do
82.	Hagru Das	Do	Do
83.	Gunadhar Das	Do	Do
84.	Ajit Ahir	Do	Do
85.	Jagat Nayek	Do	Do
86.	Harhar Nayek	Do	Do
87.	Bholanath Mahata	Do	Do
88.	Chunaram Mahata	Do	Do
89.	Hariram Rout	Vill-Pathra, Post-Asakathi, Binpur-II Jhargram, Paschim Medinipur	Do
90.	Chandramohan Nayek	Do	Do
91.	Manmotho Rout	Do	Do
92.	Dhirendranath Nayek	Do	Do
93.	Sukthdev Nayek	Do	Do
94.	Gouranga Nayek	Do	Do
95.	Tapan Nayek	Do	Do
96.	Sudhar Nayek	Do	Do
97.	Kalipada Nayek	Do	Do
98.		Vill + Post-Asakathi, Binpur-II Jhargram, Paschim Medinipur	Do
99.	Sanath Nandi	Do	Do
100	Prasanta Mandal	Do	Do
101	Tapan Nandi	Do	Do
102	Prabir Kundu	Do	Do
103	Aditya Nandi	Do	Do
104		Vill-Bhagabandth + Post-Silda, Binpur-II Jhargram, Paschim Medinipur	Do
105	Chinmoy Mahata	Do	Do
106	Pasupati Mahata	Do	Do
107	Chita Mahata	Do	Do
108	Nibaran Mahata	Do	Do
109	Maloy Mahata	Do	Do
110	Suklal Hembram	Do	Do
111		Vill-Bhandaru, Post-Silda, Binpur-II Jhargram, Paschim Medinipur	Do
112	Nityananda Dubey	Do	Do
113	Lakshmiram Saren	Do	Do
114	Patit Saren	Do	Do
115	Jitu Murmu	Do	Do
116	Joynarayan Mahata	Do	Do
117	Haren Patra	Vill +Post-Kapgari, Jamboni, Jhargram, Paschim Medinipur	Do
118	Shibaprasad Pratihar	Do	Do

119	Amal Pratihar	Do	Do
120	Lakhikanta Pratihar	Do	Do
121	Shital mandal	Do	Do
122	Jhantu Patra	Do	Do
123	Bikash Pratihar	Do	Do
124	Nandalal Mandal	Do	Do
125	Bikash Panigrahi	Vill-Bijrabandi, Post-Ergoda, Binpur-II, Jhargram, Paschim Medinipur	Do
126	Ajit Panigrahi	Do	Do
127	Muniya Hembram	Do	Do
128	Jiten Hembram	Do	Do
129	Mansa Hembram	Do	Do
130	Purna Mandi	Do	Do
131	Monoranjan Giri	Vill-Enata, Post-kadodiha, Jamboni, Jhargram, Paschim Medinipur	Do
132	Pradeep mahata	Do	Do
133	Bankim Nayek	Do	Do
134	Madan Nayek	Do	Do
135	Gour Nayek	Do	Do
136	Shymal Pratihar	Vill-Sirsi, Post-Harda, Binpur-II Jhargram, Paschim Medinipur	
137	Dipak Pratihar	Do	Do
138	Bidhan Pratihar	Do	Do
139	Rintu Pratihar	Do	Do
140	Swapan Pratihar	Do	Do
141	Bikash Pratihar	Do	Do
142	Joydev Pratihar	Do	Do
143	Arup Nayek	Do	Do

- **Publications/Papers printed**

Popular article

Bej, N. K. (2002). Dami phasal-Chinabadam, *ChasBas*, May-2002, No.6, pp-21-22.