

# **Red Cabbage are Subsumed to the Coastal Farmer as Success of Nowabenki Gonomukhi Foundation**

**Abstract-** NGF working to disseminate new technology and new crop in the coastal saline area. Farmer generally get Aman rice then field become highly saline but using new climatic resilient technique farmer can cultivate rabi crop in the specific area. For increasing production and cropping pattern it is crying need to introduce new high valued, short durational crop to this area. As a result NGF demonstrate different new crop in the farmer field. Farmer adopt Red Cabbage as high valued crop.

Key word- DAE( Department of Agricultural Extension)

NGF- Nowabenki Gonomukhi Foundation

PKSF- Palli Karma-Sahayak Foundation

Cole crop- cauliflower, cabbage, Beet root, knokhol

## **INTRODUCTION**

NGF is working in the south west coastal region of Bangladesh from last three decades focusing on sustainable livelihood, women economic empowerment and humanitarian assistance in environmental friendly ways. To ensuring sustainable livelihood, NGF from its beginning emphasizes the agro based technological knowledge development and technological knowledge dissemination for the farmers of agro industries. In addition, to overcome the adverse effect of climate change and ensuring proper nutrition and maximum profit of the marginal farmers, NGF is implementing Agriculture Unit funded by PKSF since January'2014. Under this program NGF is working mainly on adaptation and dissemination of modern technologies related to Agriculture among marginal farmers such as- a) Grants for demonstration plot establishment b) Technical support, result dissemination activities ( Field day, Enhancement tour), c) Skill development activities (Farmers training on related technologies, Agriculture advising center), d) Material support (Seeds, Pheromones Leor, Fruits bag), e) Advertisement (Bill board, Informative sign board) and f) knowledge and experience sharing activities (Publication, Leaflet, Booklet & Brochures) ([www.ngf-bd.org](http://www.ngf-bd.org)). It's working for Development in agricultural sector. It provides Equipental support and Technical Support to the farmer. Agriculture officer Demonstrate different technology based Practices in the farmer field. NGF demanded that they introduce Black rice, Capsicum and red cabbage to the Coastal Satkhira. For result demonstration they arrange Field day and Agriculture service center with different Specialist. Recently agriculture unit of NGF creates roaring wave in kaligonj and shyamnagar Upazilla by Red cabbage cultivation. Farmer takes very positively the crop and in the 2021 Many farmer cultivating Red cabbage as high valued crop.

## **Geographical Location of the Study**

Shyamnagar is located at 22.3306°N 89.1028°E. It has 46,592 households and a total area of 1968.24 km<sup>2</sup>. Shyamnagar town consists of 5 mouzas and 13 villages. The area of the town is

10.76 km<sup>2</sup>. The town has a population of 11,021; 52.36% male and 47.64% female. The population density is 1024 per km<sup>2</sup>. Literacy rate among the town people is 37.3%. ([https://en.wikipedia.org/wiki/Shyamnagar\\_Upazila](https://en.wikipedia.org/wiki/Shyamnagar_Upazila)) Kaliganj Upazila (SATKHIRA DISTRICT) area 333.79 sq km, located in between 22°19' and 22°33' north latitudes and in between 88°58' and 89°10' east longitudes. *Population* Total 256384; male 130929, female 125455; *Main sources of income* Agriculture 56.81%, non-agricultural labourer 6.05%, industry 2.71%, commerce 19.88%, transport and communication 2.40%, service 4.37%, construction 0.93%, religious service 0.20%, rent and remittance 0.30% and others 6.35%. *Ownership of agricultural land* Landowner 52.48%, landless 47.52%; agricultural landowner: urban 43.45% and rural 53.03%. ([https://en.banglapedia.org/index.php?title=Kaliganj\\_Upazila\\_%28Satkhira\\_District%29](https://en.banglapedia.org/index.php?title=Kaliganj_Upazila_%28Satkhira_District%29))

## Review of Literature

In the coastal region farmers faced different problem in crop cultivation as Salinity, Scarcity of suitable water for irrigation, less salt tolerant variety. So farmer try to cultivate in traditional way but recently DAE and Non-government Organization trying to spread out new technology and new cropping system among Shyamnagr and Kaligonj Upazilla of Satkhira District. As Success of Non-Government organization working since 2013 to till now for spreading new Agricultural practice as save vegetable Production, Organic Fertilizer production, Trichocompost production, Vermicompost production, Copping with climate change through Minipond and surgeon system crop production, Increasing Cropping pattern and new crop variety.

## RESULT

**Red Cabbage:** Cabbage, comprising several cultivars of *Brassica oleracea*, is a leafy green, red (purple), or white (pale green) biennial plant grown as an annual vegetable crop for its dense-leaved heads. It is descended from the wild cabbage (*B. oleracea* var. *oleracea*), and belongs to the "cole crops" or brassicas, meaning it is closely related to broccoli and cauliflower (var. *botrytis*); Brussels sprouts (var. *gemmifera*); and Savoy cabbage (var. *sabauda*). A cabbage generally weighs between 500 to 1,000 grams (1 to 2 lb). Smooth-leafed, firm-headed green cabbages are the most common, with smooth-leafed purple cabbages and crinkle-leafed savoy cabbages of both colors being rarer. Under conditions of long sunny days, such as those found at high northern latitudes in summer, cabbages can grow quite large. As of 2012, the heaviest cabbage was 62.71 kilograms (138 lb 4 oz). Cabbage heads are generally picked during the first year of the plant's life cycle, but plants intended for seed are allowed to grow a second year and must be kept separate from other cole crops to prevent cross-pollination. Cabbage is prone to several nutrient deficiencies, as well as to multiple pests, and bacterial and fungal disease.

Red cabbage develops its deep, reddish-purple color from growing in acidic soil. With thicker leaves that have a faintly peppery taste, red cabbage tends to keep longer than its green cousin. Thriving in humid climates with well-fertilized soil, red cabbage is primarily a winter crop. Like green cabbage, it can be used raw or cooked. Its sweet-spicy flavor and brilliant color make it delicious in cole slaw.

Sliced thinly, it can also add texture to other greens in fresh salads. Holding up well to winter's heartier dishes, red cabbage is excellent braised alongside fish, pork, game or sausage. This variety of cabbage gets its purple-reddish color from the flavonoid anthocyanin and the acidity level of the soil where it's grown. Like most colorful vegetables, it's highly nutritious, low in fat and calories, and has numerous health benefits. Like other cruciferous vegetables, red cabbage contains various nutrients that your body needs. Research also suggests that diets high in cruciferous vegetables like red cabbage may help protect against some types of cancer. Red cabbage may also help with weight loss since its low in calories, has a high water content, and is a good source of dietary fiber and other nutrients such as antioxidants. These factors help you feel full without consuming too many calories, making red cabbage a healthy addition to your diet. In addition, red cabbage can provide other health benefits like: Red cabbage contains a variety of nutrients that are important for bone health. While most people know that vitamin D and calcium are critical to their bone health, other nutrients essential to your bones include vitamin K and magnesium. Unfortunately, people who eat a typical American diet may not get the amount of these nutrients that they need. Red cabbage is a good source of vitamin K and provides small amounts of calcium, magnesium, and zinc, which can help build and maintain healthy bones. Red cabbage is high in fiber, making it easier to digest foods and keep digestive system healthy. The high fiber content can keep food moving through your digestive system and reduce constipation. The soluble fiber in red cabbage can help the beneficial bacteria in your gut. It may help maintain a healthy balance of prebiotics in your digestive system, although more research is needed. Fermented red cabbage may also help promote the balance of gut microbes and probiotics in your digestive system. This can help strengthen your intestines. The anthocyanins in red cabbage may benefit your heart. Diets high in anthocyanins, like those found in red cabbage, are linked with lower blood pressure. They're also linked to a reduced risk of cardiovascular disease.

## Nutrition

Like all cabbage varieties, red cabbage is rich in vitamin C, vitamin K, and is a low-calorie source of dietary fiber. Red cabbage is also high in antioxidants, especially anthocyanins. These nutrients in red cabbage help keep the body healthy and may help reduce the risk of health conditions such as cancer, osteoporosis, and heart disease. Red cabbage also contains other vitamins and minerals such as:

❖ Vitamin A	❖ Riboflavin	❖ Thiamin	❖ Vitamin B6
❖ Folate	❖ Vitamin E	❖ Magnesium	❖ Manganese
❖ Zinc	❖ Calcium	❖ Potassium	❖ Phosphorus

(<https://www.webmd.com/diet/health-benefits-red-cabbage#2>)

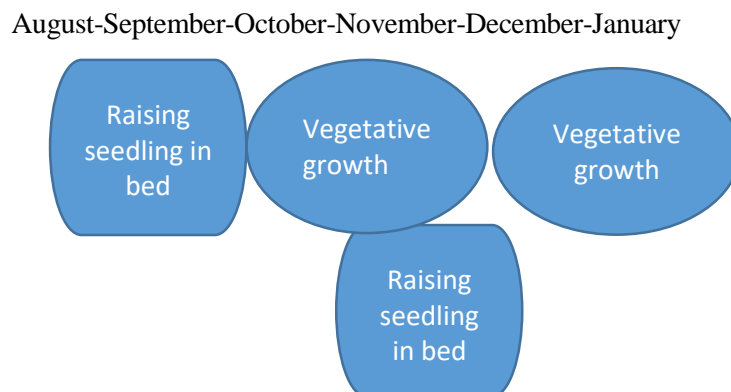


In the Fiscal year 2020-21 NGF provide Rubi king variety seed and Equipment among 4 farmers. Farmers get High price because the attractive color and taste. The price was comparatively more than green cabbage. In the December month Green cabbage was 08-12 taka per kg but Red cabbage was 15-18 taka per kg and consumer demanded. In the 2021-22 Fiscal Year 28 Farmer cultivating red cabbage in their own effort. So the crop is adopted by farmer for the NGF initiative.

Si. N.	Farmer Name	Village	Upazilla	District	Cultivated area (Decimal)	Total cost	Yeild (Kg)	Selling price	Total Income
1	Selina Khatun	North Atulia	Shyamnagar	Satkhira	50	15400	5200	83200	67800
2	Momotaz Khatun	Sota	Kaligonj	Satkhira	50	17000	5100	91800	74800
3	Asia Khatun	Sota	Kaligonj	Satkhira	30	14000	3200	48000	34000
4	Fatea Khatun	Dholbari	Kaligonj	Satkhira	60	19900	6560	104960	85060

\*In the 1 Bigha (33 Decimal) land farmer can cultivate nearby 4000-5000 piece red cabbage. The outcome is 3-4<sup>th</sup> times then investment. The large farmer can get more outcome for same maintenance cost.

Red Cabbage need to cultivate early Rabi season as the seedling need to germinate in August month. Then farmer can Transplant seedling in September month. For getting early harvest in November Farmer get high value besides they can again cultivate another cole crop in same land.



Farmer can harvest 2 crops from mid-August to January instate one crop based coastal agriculture. So they can earn double in the same time. It also reduce Intercultural operation cost. Agriculture Unit of NGF observed that the crop has highly adopted by farmer. In the fiscal year 2021-22 Kaliganj Upazilla 18<sup>th</sup> farmer cultivated 5 acre (500 decimal) land.

## CONCLUSION

NGF working to spread new agricultural technology and crop among coastal farmer. Farmer willingly adopting different new crop variety. Among them Red cabbage is a successful example. For high valued and customer attractive large number of farmer cultivating red cabbage instate of green cabbage. As high valued elite vegetable farmer more interested to capsicum cultivation.

## References:

<https://www.webmd.com/diet/health-benefits-red-cabbage#2> accessed on 20<sup>th</sup> October 2021

[https://en.wikipedia.org/wiki/Shyamnagar\\_Upazila](https://en.wikipedia.org/wiki/Shyamnagar_Upazila) accessed on 11<sup>th</sup> November 2021

[https://en.banglapedia.org/index.php?title=Kaliganj\\_Upazila\\_%28Satkhira\\_District%29](https://en.banglapedia.org/index.php?title=Kaliganj_Upazila_%28Satkhira_District%29) accessed on 11<sup>th</sup> November 2021