



Research Article

DISANG- A PROMISING SHORT DURATION RICE VARIETY SUITABLE AS EARLY AHU (PRE FLOOD) AND FOR POST FLOOD SITUATION IN CACHAR DISTRICT OF ASSAM

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Abstract: Flood and hailstorms are a recurring problem of the Cachar district. It occurs during the onset and recession of the monsoon for 15 days during May–June and September–October. Occasional hailstorms are also a problem during March–April. Flood and hail storm often damages both Ahu and Sali rice. To solve this problem a short duration (95–100 days) climate resilient variety- Disang (Developed & released by RARS, AAU, Jorhat, 2010) was introduced during early Ahu (pre flood) and post flood situation. Experiment has shown very good performance in yield as well as income point of view. Yield performance and economics has made the Disang variety to become popular in the Cachar district and horizontal expansion occurred in 135 nos of villages in convergences mode of KVK, DAO and ATMA Cachar.

Keywords: Monsoon, Climate resilient variety, Flood situation

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Introduction

Cachar district is located in the Southern part of the state and agro-climatically, it is in the Barak valley Zone. The District is situated at 36.5 m above m.s.l. and altitude (92°24'E and 93°15'E) and latitude (24°22'N and 25°08'N). The zone has an undulating topography characterized by hills, hillocks, wide plains and low lying waterlogged areas locally called beels. The average annual rainfall of the zone is 3200 mm with 146 rainy days. The period from December to February is generally dry. The period of March–April is characterized by low and erratic rainfall with occasional hailstorm. The period from May to September is characterized by high rainfall with apprehension of flood. The intensity and distribution of rainfall during the pre monsoon (March–May) and monsoon (June–August) periods are the chief determinants of area coverage and productivity of rice in the zone [1].

Methods and materials

Rice is the main crop of this zone which is characterized by erratic rainfall with occasional hailstorm during March– April and heavy rainfall during June– August frequently damages both Ahu and Sali rice. Recurrent flood is the major problem confronting the area in general and farmer in particular. Keeping this problem in view KVK Cachar took significant initiative by introducing rice variety Disang developed by RARS Titabar, AAU, Jorhat, 2010 with a great expectation to tackle the flood problem as the variety characterized by short duration (95–110 days) as well as can be grown in all the three season. To analyze the potentiality and feasibility, demonstration was conducted in different pockets of the district during 2012–13. A significant impact was achieved with a maximum yield of 4.2 ton/ha which is quite encouraging for farming community and KVK scientist as well. Moreover the variety proved to be extremely suitable as climate resilient intervention taken in Salchakra and Purandarpur villages under NICRA during last five years [2].

Result and Discussion

Experiment has recorded the yield and yield attributing characters. It has shown that the average plant height, tiller per hill, grains per panicle was 87.33cm, 9.8, 117.33 respectively. The days of maturity was 109 days and grain yield of Disang was 39.66 q whereas local rice was 25.78q/ha. It indicates that yield performance of Disang was 35% higher than local rice. The Cost of cultivation was higher by Rs 15000/ha which is 42.8% higher than local rice. Gross income (Rs 26,988/ha) was 52.3% higher whereas net income (Rs 16,558/ha) was 72.4% higher local rice. Although, cost of cultivation of Benefit Cost (BC) Ratio of Disang was 1.47 which is higher as compared to local rice 1.22 in pre and post flood situation. During 2012–18, a total of 32 neighbouring farmers have accepted and tested the variety Disang in their respective fields and received good response. Moreover 28 farmers showed interest and asked for seed.

Year	Seed Distributed (q)	Area(Bigha ^s)	Total Farmers benefited
2012-13	1.35	15.0	21.0
2013-14	1.05	19.5	6.0
2014-15	0.68	10.0	4.0
2015-16	1.48	60.0	28.0
2016-17	1.26	19.0	7.0

\$1 hectare= 7.5 Bigha

Impact of the technology

From the Impact study programme of Disang conducted by KVK, Cachar during 2015–2016 under Technology showcasing programme of RKVY at Dhamalia, it was seen that 35% increased productivity of the Disang rice variety was observed compared to the local variety. In terms of financial return, farmer's income rose significantly by growing of Disang variety and good market price is one of the contributing factors. During 4 years (2012–2015) a total of 21 neighbouring farmers have accepted and tested the variety Disang in their respective fields and received good response.



Fig-1 Horizontal expansion of Disang at MGMG and NICRA village Dhamalia and Salchapra

Moreover, 28 farmers showed interest and asked for seed. Realizing the interest of the farmers AAU was eagerly waiting for releasing flood fighting rice variety [3]. The majority of the farmers liked the variety due to following reason.

- Better yield as compared to local one
- Medium bold grain and tasty
- Good market price
- Less insect pest attack
- Double cropping is possible
- Can adjust the time efficiently for another crop

The respondent farmers rated the variety very suitable in their local condition and perceived as compatible in terms of existing resources, existing investment and input. The variety Disang is not only able to convince and satisfy farmers but also able to meet the requirement of the farming community to a great extent which led to adoption of this variety in the district is on a rise. Moreover, the variety proved to be suitable in double cropped areas where rice is followed by winter vegetable.

Conclusion

Being the single major source of agricultural GDP, rice plays a significant role in the economy of Assam [4]. The average productivity of rice in Assam is much lower than the national level [5]. Recognizing its potentiality and feasibility of Disang rice var. in pre and post flood situation, the Department of Agriculture, Cachar came forward to popularize the variety in other parts of the district during the year 2013-18 and procured more than 50 quintal Disang seed from KVK Cachar. The DAO, Cachar demonstrated this resilient variety in 135nos. of double cropped areas under ATMA scheme with technical collaboration of KVK, Cachar in convergent mode.

Application of research: Horizontal expansion of Disang Rice

Research Category: Varietal evaluation of Disang

Abbreviations: RKVY: Rastriya Krishi Vikash Yojana, ATMA: Agriculture Technology Management Agency, KVK: Krishi Vigyan Kendra, DAO: District Agriculture Officer, MGMG: Mera Gaon Mera Gaurav. AAU: Assam agricultural University. GDP: Gross Domestic Product, TOI: Times of India

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Study area / Sample Collection: Dhamalia and Salchapra Village of Cachar District of Assam

Cultivar / Variety / Breed name: Disang Rice

Conflict of Interest: None declared

Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.
Ethical Committee Approval Number: nil

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