

pests and diseases. But the rice plants are infested with insects called *gawaro*. This variety of paddy neither requires weeding out grasses nor the need of fertilizers. The harvesting time for this species is the month of *Mangsir* (November/December). In this month, the level of the water comes up to the knee and the paddy can easily be cut down with the help of a curved knife called *hasiya* or *kachiya*. After the paddy is cut down and carried home, it is dried, beaten, threshed, and stored well, ready for use.

Uses and its importance

The rice is soft and delicious to eat. It is readily digested. From this rice beaten rice (*chiura*) can be made, and varieties of local delicacies like bread, *thakuwa*, fried bread, etc., are prepared. The paddy of this species is accepted in our sacred rituals and practices. This variety of rice is generally used in feasts and parties.

Possibility of improving the qualities of this species of paddy

I bought the seeds of this species of paddy at Rs.15 per kilo. Therefore, the market price of this variety of rice can't be less than Rs.18/- to Rs.20/-. During festivals, the price of this species of rice goes up to Rs.30/-. So there is no loss in cultivating this variety of paddy in our fields. This is very advantageous, especially if the land is being left unused due to water-logging conditions; thus, farmers can maximize their profit. Since the labor is less, any one can farm this variety of paddy.

Need for conservation of the species

This endangered variety of paddy, having such odd qualities, is in the process of being lost. If we do not direct our attention in time, its extinction is certain. Now there is an increasing tendency to fill up the water-logged land and convert it into residential areas. This is a really dangerous situation because it increases the possibility that this species will be completely wiped out. For this reason, both the government and the NGO must take the initiative to conserve this variety of paddy and work towards helping the farmers with the technology to improve their living conditions.

Name of paddy: *Amadhuj* and *Sakhar*

Both the stalks and the rice grains of these two varieties look the same. The two species are cultivated in fields that require less depth of water than for *Bhathi*, but the *Sakhar* paddy is shorter than the *Amadhuj* species.

Both are cultivated in a similar manner. They are sown by spreading the seeds on the prepared fields. They require less fertilizer but need to be weeded. If the fertilizer is too much, then there is the possibility of the paddy plants falling. If the cultivation is done well, the return harvest can be as much as four to six *maunds* (160–240 kilos) per each *katha* of land. The rice crop is long and the grains are fat and heavy.

This year I bought both these species of paddy from the village called Sonarniya in the Rautahat district. I cultivated *Amadhuj* variety on three *katha* of land and *Sakhar* on one *bigha* of land. But in the field there was too much water collected, and the paddy was good only in two *kathas* of land.

These two varieties of paddy are acceptable in our sacred rituals. From the rice straws, we can make floor mats. The cooked rice is good and any person who is sick can eat this rice without any problem.

In the *Amadhuj* stalks, three or four grains of paddy grow together, so that at a glance, the paddy crop looks almost like wheat. But there is a superstition attached to the cultivation of this paddy. It is believed that if the paddy grows in equal measures in the four corners of the field and the produc-

tion is equal in all the four corners, then the farmer who has such a harvest will suffer some evil, like some one will be sick or some one in the family may die.

Species of paddy: *Khera*

In the month of *Jestha* (May/June), the seeds are sown, and in the month of *Asadh* (June/July), the rice saplings are planted, and in the month of *Mangsir* (November/December), the paddy is harvested. As the level of water is less, the paddy needs to be weeded. It can also be given fertilizers. I had personally used three kilos of urea and 2.5 of DAP in the paddy fields. As the paddy grains have *tunda* there is less possibility of disease and pest problems. But this year, the paddy was infested with both disease and pests, and I had to use the pesticides called *chelamin* and *metacid*. After taking all these measures, the harvest was three *maund* (120 kilos) per each *katha* of land.

This variety of rice is important from a religious point of view. In the worship of our family God, *Gobin Maharaj*, this variety of rice is absolutely needed and no other variety will do. The cooked rice from this species is equally delicious. From the rice straws, the floor mats are made and even the cattle have a special preference for this type of rice straw. This variety needs less fertilizer.

Role of Farmers in Selecting Crop Species

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Abstract

Farmers describe their activities investing in and developing their agricultural output, with details of their production and Suwarna paddy rice (an improved variety).

Introduction

We have been following the traditional method of cultivating crops according to the methods used by our ancestors. In those early days it was not possible to know the kinds of soil, the type of crop that was suitable to the kind of soil, the types of pests and diseases, the methods of controlling them and how much fertilizer is required for a particular type of crop, and hence, the harvest was not satisfactory. I feel the government is not much interested in the agricultural sector, but without improvement in the agricultural sector, there can't be improvement in industries and commerce. In every country the role of agriculture is prominent. Because of the three basic human needs—food, shelter, and clothing—food occupies the prominent place in man's life. The basic need of all sorts of living beings, from the wealthy to the poor beggars and birds and animals, is food. Without food, nobody can live; it is a universal fact. This point is most significant for us to understand.

Nepal is an agricultural country, so the people here would be most happy if they were given knowledge about the formation of land, the types of soil, means of irrigation, and given the priority to develop improved seeds for local use. In 1929 we migrated from Lamjung to Geetanagar VDC, Ward no.8. At that time there was no irrigation system in the village. The field had mixed cultivation of different species of paddy in the same plot, like *Dudharaj*, *Aap jhuthe*, *Battisara*, *Gola*, *Mansara*, *Thapachini*, *Jetho buro*, *Ghaiya*, etc.

Development

In terms of harvest, there used to be 25 to 35 *muri* of paddy per *bigha* of land. At Tandi, we grew maize and mustard. There was no system of cultivation by rotation. Later on there came new species of paddy called *Achhami masino*, *Mansuli radha-4*, and *Radha-17*. Among them, the *Mansuli* was the best, so there was extensive cultivation of this species of paddy everywhere. Vegetable cultivation was limited to small kitchen gardens for vegetables like green vegetables and radishes, but later, from the year 1937, with the assistance of the Agricultural Development Branch Office, we began to grow vegetables on a larger, commercial scale: improved species like cauliflower snowball, Kathmandu local, snowcorn cabbages, radishes, carrots, mustard, etc. Now, these improved varieties require good irrigation systems, so we took a loan from the Agriculture Development Bank, dug out deep wells, kept motor engines, drew out water, and kept sprinklers to irrigate the vegetable fields.

Now we have at our rescue the LI-BIRD Organization, who, by keeping in contact with the different research centers, have made available for us new and better improved seeds, like *Rajma*, *Panta-11*, *BC 1442*, *PNR 381*, and *Sarvati*. These crop species are suitable for the soil at Tandi, but in water-logged fields where the paddy plants tend to fall easily, the *Sawarna* species of paddy seems to be appropriate.

Experiences regarding the *sawarna* species

This variety of paddy is excellent in churned fields. The plant stalk is strong and does not fall easily. The rice is tasty, good in texture, has weight, has solid grains, is easy at milling and at threshing prior to milling. Seventy-six percent of the rice grains remain during the processing period and do not break easily into pieces in the de-husking process, and unlike the *Mansuli* species, even when the plants are shorn of green leaves, there is no difference in the usual production of rice kernels. Last year for the research study, the LI-BIRD Organization and the Agricultural Development Branch office at Bharatpur made improved seeds available, and so we were able to cultivate the *sawarna* variety of paddy in 10 *katha* of land.

In terms of production, it gives us four *muri* of harvest per each *katha* of land. This year we harvested 80 *muri* of paddy. In the village of Indrapuri, for Tandi there are varieties of paddy species that can be cultivated, like BG 1442 and Panta-10, IR13155.

We farmers are very happy now because a mini-kit has been prepared for the farmers with the different species of paddy, exhibition of research results, trial checks, specimens, etc. From such programs, we have highly benefitted and learned that now we can choose by ourselves which of the species would be most suitable for our land, soil, and climatic conditions so we can be selective in cultivating crops ourselves.

Role of Farmers in the Improvement of Crops: New Species of Paddy in Maramche

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Abstract

This paper describes the agricultural situation in Maramche. Village farmers have been participating with the Local Initiatives for Biodiversity Research and Development (LI-BIRD), testing improved varieties of paddy rice. Details of the qualities of the new varieties, qualities preferred by the farmers, and experiences with the participatory plant-breeding program are included.

Introduction

Maramche is a small hilly village in the Dhikur VDC near the Lumle Agriculture Research Center. It is about 30 kilometers from Pokhara, the tourist area in the Kaski district, to the northern side of the western Baglung Highway. It has a cold climate and a diversity of ethnic tribes. It is 1600 meters above sea level. In this village there are about 36 households only. Although the village contains a diversity of ethnic tribes, the majority of the people belong to the Brahmin caste. Just as Cheerapunji is the world-renowned place for rain, likewise Maramche is also the village in Nepal that has the highest rainfall.

Due to poverty in the country, many of the people have left their homeland in search of work, while the rest are dependent on agriculture. Looking into the picture of farming in this village, we find much diversity. The following table helps to illustrate the important crops and vegetables grown in this area.

Farmers	Land Area	
	Much	Less
Much	Paddy, maize, wheat, millet	Potatoes, mustard, radishes, beans (bodi, simi, bakulla), gourds (ghiraula), pindalu, soybeans, iskush (squash), karela (bitter gourd), garlic, onions
Less		Cauliflower, carrots, salgam (turnips), kerai (chick peas), sugarcane, green vegetables (chamsur, palungo), jau (barley), uwa, gahat, lentils (arhar) tarul, turmeric, ginger

Among the crops mentioned in the table, paddy is most extensively cultivated. But unlike the other crops, paddy has the maximum number of local varieties. The following are the names of the local species:

1. *Kanthe*
2. *Kalo patle*
3. *Reksali*
4. *Mansara*
5. *Juwari*
6. *Silayam*
7. *Tarkange*
8. *Chhomrong local*