

Potato in Bhutan

Potato is one of the widely produced, consumed and traded horticultural crops in Bhutan. Why should we cultivate potato? We should cultivate potato because it has capabilities to provide more nutritious food from less land in less time than other crops such as wheat, maize or rice. Further, there is the existence of favorable conditions for the production of high quality potato for in-country consumption and as well as for export. It is grown by more than 34,000 households in all 20 districts of Bhutan. It contributes significantly to national economy while at the same time supporting rural households in generating food and income. Farmers in some Dzongkhags like Bumthang and Haa depend on potato for their livelihood. Potato serves as indirect food since they use cash generated by potato purchase food commodities.

Yield potential, crop duration and agroecologies of potato varieties

SN	Variety	Year of release	Releasing agency	Yield potential (t/ac.)	Days to maturity	Recommended agroecology (masl)
1	Desiree	1988	BNPP	15-18	90	1000-2000
2	Khangma Kewa Kaap	2002	RDC Wengkhari	16-20	100-105	600-2500
3	Nasephey Kewa Kaap	2014	National Potato Program, DoA	15-23	160-180	All agroecologies
4	Yusi Maap	2017	National Potato Program, DoA	12-17	120-140	Mid- and high altitudes

A basic guide on potato farming in Bhutan



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February, 2020



Seed rate and planting method

Seed potato is generally 35 to 65g/tuber or tuber diameter of 25 mm to 50 mm in size. Normally, seed rate of potato is 800 to 1000 kg per acre in Bhutan. However, if the sizes of tubers are lower than the above recommended specifications then the seed rate will be lesser and if the tuber sizes are larger than the above recommended specifications then the seed rate will be higher.

Before, planting soil is prepared into raised ridges (rows) with the distance of 50-70 cm between the ridges. Potato tubers are generally planted with a distance of 15-20 cm between the plants. That is, maintaining the plant-to-plant distance of 15-20 cm and ridge-to-ridge distance of 50-70 cm.

Weeds & late blight management and earthing up

Weeds in the potato crop should be removed manually by weeding at one and half months after planting. During the first weeding earthing up should be done to reinforce to ridges. The earthing up operation should be done carefully to avoid disturbing the stolons and roots. Since potato is a modified stem, it needs to be covered with soil in order to enhance productivity. Earthing up improves soil aeration reduces weed pressure and increases stem density. Second weeding can be done as soon as the crop gets weedy. However, earthing up operation should be avoided once the plants approaches/reaches flowering stage to prevent disturbance/damage to the stolons or the tuber formation process. A pre- or post- emergence herbicide Metribuzin 70 WP should be applied at 200 to 400 litres per acres can be to manage weeds and the concentration should 1 g/litre of water. For pre-emergence, control of weeds, Metribuzin should be applied three to four days after planting and soil should not be disturbed after the application. Late blight can be treated using Metalaxyl 8% + Mancozeb 64 % at 200 to 400 litres per acres and the concentration should 2 g/litre of water. However, this treatment may not be 100% curative. Cultural method can include growing of resistant varieties like Nasephey Kewa Kaap and Yusi Maap.



Harvesting and curing

The harvesting time can be determined by assessing the maturity of the tubers by looking at the plant; i.e. when the haulm turns yellow and dies. Harvesting is mostly done by household members using a power-tiller or long handled spade or a hoe to unearth the plant and shake the soil from the tubers. In curing process, the harvested tubers are spread and allowed to be dried. This process will help hardening of the tuber skin; remove soil adhered with the tubers and heal the minor injuries and bruises. Best curing takes place at 15 to 18 °C. For fuller curing, the potatoes need to be placed in heaps in shade, in a ventilated place but not in windy situation where excessive evaporation of moisture from the tuber might lead to shrinkage. For good curing, it takes 10 to 15 days depending upon the temperature of the place.

Sorting and Grading

Post harvest handling, which includes different activities (sorting, grading, packing, storing, carrying to the road heads, transportation, loading and unloading), is mainly done by the growers themselves.

1. Grade tubers >65g/tuber or >50 mm in tuber diameter as **Table size** which is marketed for consumption purpose.
2. Grade tubers of 35 to 65g/tuber or tuber diameter of 25 mm to 50 mm into **Seed category** which is saved/sold as seed potato.
3. Grade <35 g/tuber or <25 mm in tuber diameter into **Non-commercial** category which can be used as animal feed or sometimes consumed.



Storage and marketing

Potatoes are to be spread out on the dry floor of the storage area to prevent them from rotting. It is better to store them in a dark, cool place in order to keep the glycoalkaloid content low. Under exposure to light, potatoes turn green in colour. Since glycoalkaloids are not destroyed by cooking, they spoil the taste and give a negative impression to consumers. Graded potatoes are sold in local market or sold through the FCBL auction yards.

