Wheat Cultivation Practices

About 65% of the wheat area in Bhutan is wheat grown after rice. All varieties grown in the rice-wheat system are introduced spring wheat. Winter wheats requiring vernalization are grown in temperate (high altitude) areas.

VARIETIES

Gumasokha Ka

- Newly released (2014) high yielding variety of wheat.
- 80-85 cm tall and matures in 150-160 days at medium altitudes.
- Yield potential of 1.2-1.3 t/acre.
- Resistant to all type of rusts.
- Amber colored grains.

Bajosokha Kaa

- Recommended for medium altitudes.
- Matures 155-160 days after sowing.
- Grows to a height of 90 cm.
- Attractive amber grains.
- Yield potential of 1.3-1.4 t/acre.
- Highly responsive to inorganic fertilizer.
- Resistant to all rusts, including Ug99.

Bumthang Kaa Drukchu

- Released in 2015 for high altitude areas.
- Matures in about 250 days after sowing.
- It is more than 90 cm tall.
- Grains are amber in colour.
- Yields of 1.2-1.3 t/acre moderate management.
- It is resistant to all rusts, including Ug99.

FIELD PREPARATION

Where bullocks are the source of power, one deep ploughing followed by a second ploughing or harrowing using a local plough. Where tractor/power tiller is available, one deep ploughing followed by 2-3 harrowings is required. Planking should be given to prepare a well pulverized seed bed.

Irrigate 7-10 days before sowing to ensure good germination.

SEED AND SOWING

Selection of seeds: Use healthy seeds of a recommended variety. Treat the seeds with Vitavax at the rate of 2.5 g/kg seed to control loose smut.

Seed rate: 100-120 kg/ha.

Sowing time: November. An early sown crop is more likely to escape rust infection, and early sowing also ensures enough residual soil moisture for germination.

Method of sowing: After the final land preparation and application of manure and fertilizer, the seeds should be uniformly broadcast and then covered by harrowing.

MANURE AND FERTILIZERS

Apply 5 t/ac of well-decayed FYM at the time of land preparation and work well into the soil.

For higher yields supplement the manure with chemical fertilizers at the rate of 100:40:30 NPK kg/ha. Half the nitrogen and all the phosphorus and potassium should be applied basally. The remaining nitrogen should be topdressed at crown root initiation which will be roughly a month after sowing.

IRRIGATION

The crown root initiation (CRI) stage and heading stage are critical stages when the wheat plant suffers most from moisture stress. If the water supply is limited the following schedule of irrigation should be adopted.

First irrigation: At CRI, 25-30 days after sowing.

Second irrigation: At booting stage, 70-75 days after sowing.

Third irrigation: At milk stage, 90-100 days after sowing.

DRAINAGE

Wheat irrigation is complicated by the formation of a plough pan during puddling for rice. Waterlogging occurs after irrigation because of the slow vertical movement of water. Wheat is particularly sensitive to waterlogging at the early seedling stage. If severe waterlogging is observed, drain the excess water by constructing small channels across the field.

PLANT PROTECTION

Yellow/strip rust is the most common rust challenging wheat production in Bhutan owing to favourable environmental conditions for its development. It can be managed through growing resistant recommended cultivars. In case the rust is observed, propiconazole 25EC (Tilt 25 EC) @ 0.1 per cent should be sprayed at the foci of infection to prevent further spread. The frequency of spray will depend on severity of disease in the field.

Loose smut

- Use clean, disease-free and healthy seeds.
- Treat seeds with Vitavax at a rate of 2.5 g/kg seed before sowing.

HARVESTING AND THRESHING

Harvest when the leaves and stems turn yellow and become fairly dry. Timely harvest ensures optimum grain quality and consumer acceptance. Harvesting is done manually using serrate edged sickles.

After harvesting, dry the crop for 3-4 days, then stack and thresh. Threshing can be done either manually or using a power thresher.

For safe storage, clean the grain and dry well for a few days to reduce moisture content to 10-12%. Occasional sun drying should be done to avoid losses during storage.

For further information contact
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