



Package of practice for beans continued...

Page 3



The Ministry's Week

Page 6

Package of Practice for Beans

DoA



Background

Phaseolus Bean (*Phaseolus vulgaris* L) is one of the main leguminous crops grown as vegetable in Bhutan but it is regarded as a vegetable when it's immature and tender pods are eaten. Phaseolus beans are often called as kidney beans or common beans and they are widely distributed and have the broadest range of genetic diversity.

They are cultivated under different cropping systems from monocrop of bush bean (commonly called as French bean) to complex association of indeterminate or climbing beans with maize.

Bean varieties are broadly divided into dwarf (determinate) in which the terminal meristem is reproductive and climbing (indeterminate) in which the terminal bud is vegetative. Varieties: Grey Pole, White Pole, Borloto (Bush)

Cont...on Pg 2

Cont...on from 1

Climate

Common beans grow under a wide range of climatic conditions. However the best pod setting is obtain when day temperature is between 15 and 30°C.

Table: Growing season for beans

Altitude (m)	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
High altitude (Above 1800m)				—	—		—	—		—	—	
Mid altitude (1000-1800m)				—		—	—	—	—	—	—	
Low altitude (Below 1000m)		—		—	—				—	—		—
	Sowing											
											Harvesting	

Soil and Field Preparation

A well prepared, well drained, loose, friable loamy soil with pH ranging from 5.5 to 6.8 is best suited for growing beans.

Seed Rate

Seed rate for beans is usually 12 kgs per acre. However, seed rates are different for bush beans and climbing beans. About 8-10 kg of good quality bush bean seed, with minimum germination of 75%, is necessary for o n e a c r e whereas for pole bean 4-5 kg seed is adequate for one acre.



Cont...on Pg 3

Cont...on from 2



Spacing

There is a slight difference in the spacing between bush bean and pole bean. In case of bush bean, seeds should be sown in rows 50 cm apart and the plant to plant spacing should be 25-30 cm whereas in the case of pole bean, seeds should be sown in rows 80 cm apart and the plant to plant spacing should be 30-40 cm. Pole beans require external support during plant growth which is provided in the form of stakes.

Cultural Operations

Two to three weeding cum hoeing is necessary depending upon the weed pressure. The crop should be maintained weed free till the stage of appearance of flower buds after which the crop should not be disturbed.

Nutrient Management

In one acre, it is advised to apply at least 8 Mt of well decomposed farm yard manures (FYM) or fully matured compost. In addition, for a good crop, apply 10 kg N and 30 kg P₂O₅ per acre before the final land preparation.

Water management

Beans are shallow rooted crops and are sensitive to excess soil moisture. Therefore, the water requirement is very low. Applying irrigation immediately after sowing adversely affects germination and therefore should be avoided. Irrigation should be made available prior to blooming, flowering and pod development stage as these are the critical stages of their growth.

Cont...on Pg 4



Cont...on from 3



Plant Protection

A good crop rotation will help prevent and minimize pest and disease occurrences. A bean crop should not follow crops which belong to Leguminosae family. It should be rotated with crops from different family such as tomatoes, cabbage, carrot and pumpkin. Beans should be protected against thrips and aphids, pod borer, powdery mildew, rust and anthracnose.

Harvesting

On average beans usually take around 60 days to reach the Harvesting stage. Always pick beans when they are tender with an appropriate size to consume as vegetable. To determine when to harvest, examine by opening several pods. As the pods attain marketing stage, hand picking of pods should be carried out at 7 to 10 days interval. By harvesting pods frequently, it will provide a continual production all season. Depending upon the variety and the level of crop management, the yield of the beans may range between 2 to 4 tons per acre. Pole beans give a higher yield over a longer harvest period than do bush beans.

Seed Production

It is important that adjacent cultivars should be at least 20-50 m apart with the distance increased to at least 100-150 m for basic seed production. Harvesting normally commences when the majority of pods have dried and become parchment-like. Cut the crop when the earliest pods have dried to the parchment stage and the foliage is starting to dry off, characterized by a reduction in the intensity of green in the leaves and haulm. Sample pods should contain fully developed seeds which are firm, taste starchy and are readily detachable from their pods. Thresh or pound the dried plants for extraction of seeds and dry up the seeds maintaining about 10% of moisture content. Pack the dried seeds in small air tight plastic bags and store in the gene bank for future use.

Leisure

Guide to insect & diseases of beans

Viral diseases

Plant resistant varieties. Control weeds in and around the field.

Bacterial leaf diseases

Plant disease resistant varieties. Use drip irrigation. Do not work in plants when wet. After harvest, bury plants. Do not save seeds from infected plants. Do not use plant beans in the same field for 2 years.

White mold

Use drip irrigation. Leave wide spaces between plants. Choose varieties with an open, upright growth form. Stake vining varieties. Remove infected plants. Do not compost infected plants. At harvest, throw away any beans with soft, discolored spots

Cutworms

Remove weeds and plant residue. Till garden before planting. Place cardboard collars or aluminum foil around plant stems when planting transplants. Bean leaf beetles. Delay planting beans until mid to late June. Handpick beetles on the beans and place in a pail of soapy water.

Spider mites

Keep beans properly watered. Use a water hose to spray a hard stream of water on infested leaves.

JOKES



A young boy was obsessed with farming machinery

A young boy was obsessed with farming machinery, he built models, he drew them, and spent all his free time going to his local farm just for a look at a combine harvester or a hay baler.

As he aged, his interest in mechanised agriculture slowly disappeared, and by the time he was married with kids, he'd completely forgotten his love for it.

One night, as he was preparing for bed, he realised he could smell smoke coming from the children's bedroom.

He rushed to the doorway to see that a candle had fallen off the bedside table and the rug was ablaze. His children were trapped on the other side of the room with no escape.

Smoke was filling the room and the children were coughing and panicking. He knew he had to act. Quick as a flash he took a long, deep breath and inhaled all of the smoke. He then opened the window and blew all of the smoke out of his lungs and into the air. He had saved his house and his family.

His wife, who had arrived with a bucket of water asked her husband: "Honey, how did you manage to suck all that smoke from the room?"

"I'm an ex-tractor fan"

Did you know?

It takes one hive of bees 55,000 miles of flight to produce one pound of honey and it takes approximately two million flowers for bees to produce that one pound of honey.

Please submit your articles for RNR-Newsletter at

communication@moaf.gov.bt



The Ministry's week

Hon'ble Sanam Lyonpo attends virtual Global Forum on Food and Agriculture



The Hon'ble Sanam Lyonpo attended the Global Forum on Food and Agriculture, Agricultural Ministers Meeting organized by the Federal Government of Germany on 28 January under the overarching theme "Sustainable Land Use: Food Security Starts with the Soil."

Speaking to the forum, Lyonpo highlighted the importance of soil health and land management

for enhancing food security. During the deliberation, Lyonpo emphasized the issues of agriculture farming in Bhutan where agriculture is practiced in steep topographical terrain prone to frequent soil erosion and other forms of land degradation.

In hindsight, Lyonpo also informed on the initiatives taken in addressing soil health and land degradation issues.

4th Asia Ministerial Conference on Tiger Conservation

The Hon'ble Sanam Lyonpo, Yeshey Penjor virtually addressed the 4th Asia Ministerial Conference on Tiger Conservation.

Lyonpo has called for joint efforts of the 13 Tiger Range Countries to strengthen the regional cooperation and action in balancing conservation, economic



priorities and development goals necessary for conservation efforts for tigers and Asia's natural heritage.

The Department of Forests and Park Services presented the country report on the tiger status and regional conservation finance for tiger conservation.

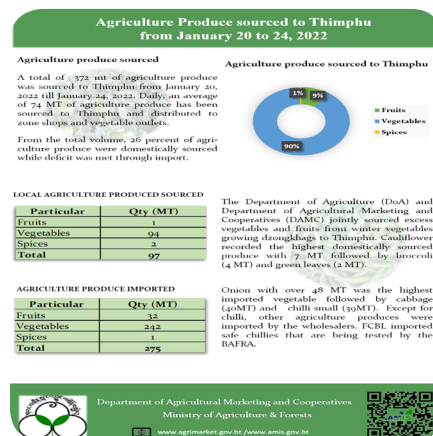
Agriculture Produce sourced to Thimphu from January 20 to 24, 2022

A total of 372 mt of agriculture produce was sourced to Thimphu from January 20, 2022 till January 24, 2022. Daily an average of 74 MT of agriculture produce has been sourced to Thimphu and distributed to zone shops and vegetable outlets.

From the total volume, 26 percent of agriculture produce were domestically sourced while

deficit was met through import. The Department of Agriculture Marketing and Cooperatives jointly sourced excess vegetables growing dzongkhags to Thimphu.

Cauliflower recorded the highest domestically sourced produce with 7 MT followed by broccoli (4 MT) and green leaves (2MT).



Published by:

Information and Communication Technology Division (ICTD)
Ministry of Agriculture and Forests
Post Box: 1095, Thimphu-Bhutan
Tel. (PABX): 02-323765/321142
Fax: 02-324520
Email: ictd@moaf.gov.bt
Website: www.moaf.gov.bt