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# PULSES( LEGUMES). CONTENTS ----

- Introduction
- Different pulses grown in India.
- Botanical names & Family, and some Photographs Plant and its product to be used.
- Full description of any one of the Pulse plant.

- Pulses belong to the family Leguminosae\Fabaceae,
  which is characterised by having fruit as Legume or Pod.
  Nearly 11000 species of legumes are known. They have
  been cultivated and used for food for centuries all over
  the world.
- Pulses are second important sources of human food next to cereals. They contain more protein materials than any other food products. Pulses are important source of proteins for vegetarians. Carbohydrates ,fats ,minerals and vitamin B are also present in Legumes. They have high energy content also. Grain legumes are cultivated for their seeds. Roots of legumes forms root nodules which contain nitrogen fixing bacteria, enhancing soil fertility also, greatly increase the nitrogenous content of the soil.

#### Introduction contd.

- Canada, Myanmar, China, Brazil, Australia, USA, Russia,
   Nigeria are also the other larger producers.
- About one- seventh of cultivated area in India is under pulses.
- India was the largest producer of pulses with 25% of the world total production and also largest importer 27% of pulses in the world. Madhya Pradesh (23%), Uttar Pradesh (18%), Maharashtra, (14%), Rajsthan (11%) and Karnataka and Andhra Pradesh (9-10% each) are the top pulses producing states.
- Pulses cultivated both as Rabi and Kharif crop in India.

### Different pulses grown in India 3

- All pulses belong to the family- Leguminosae or Fabaceae and Sub-family- Papilionaceae.
- Gram( Chana) <u>Cicer arietinum.</u> So many synonyms
- Pigeon pea( Arahar) <u>Cajanus cajan.</u>
- Lentil( Masur ) <u>Lens esculantus.</u>
- Pea( Matar) <u>Pisum</u> <u>sativum</u>.
- Green Gram( Mung) Vigna radiata .
- Black Gram (Urad) Vigna mungo .
- Chickpea( Kabuli chana) <u>Cicer arietinum.</u>
- Kidney beans( Rajma) Phaseolus vulgaris.
- Cowpea( Black eyed pea ) Vigna unguiculata

## Gram plant & seeds













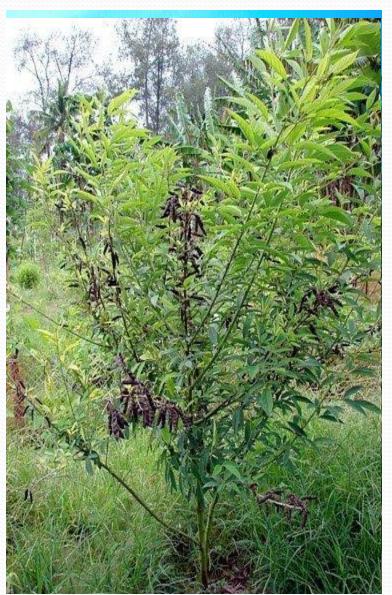
## Gram and Chickpea (<u>Cicer arietinum</u>) 5 Family- fabaceae

- It is indigenous to south-east Europe. Six countries- India, Australia, Turkey, Myanmar, Pakistan and Ethiopia account for about 90% of world chana and kabuli chana production. The major gram producing states in India are Madhya Pradesh, Maharashtra, Rajsthan, Uttar Pradesh, Punjab, Bihar, Andhra Pradesh and Karnataka. Gram is the most dominant pulse having a share of around 40% of total pulses production followed by Arhar at 15-20% and Urad and Mung 8-10 per cent each in India. In 2018 India produced 66% of the world total gram production.
- It is a rabi crop. Sowing takes place between September and November, and harvesting between February and April.
- Plant is an annual herb, grows to 20-50 cm in high and has small, feathery pinnately compound leaves on either side of the stem with one seed legume pods. It has white flowers with blue, violet or pink veins. Seeds are green when picked early and became dark brown after drying.

#### Gram contd.....

- Gram contains 22% or more protein, i.e. the richest source of protein 21% dietary fibers and carbohydrate, Fat 5%, Vitamins A,C, D & B-12, and so many minerals as Sodium, Potassium, Calcium, iron, phosphorus, manganese and 100gms will provide 364 calories. Having no cholesterol.
- Uses:- 1. Gram is a nutritive pulse and is used as cheapest source of **protein adjunct** to starchy diets. **2**. Dal is prepared by splitting the whole grain into two and removing the husk ( seed coat). **3**.The flour of dal is known as besan, which is used in preparation of so many types of sweets and snacks. 4. The whole grain is eaten raw, as sprout, roasted or boiled. **5**. Sprouted (germinated) gram is used as prophylactic against deficiency diseases, scurvy in particular. **6**. Used also in textile sizing and adhesives. 7. The leaves and twigs are used for fodder.

## Cajanus cajan (Arhar)







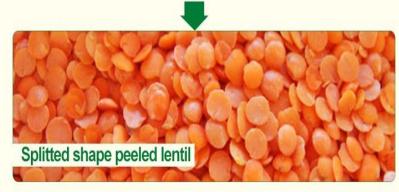












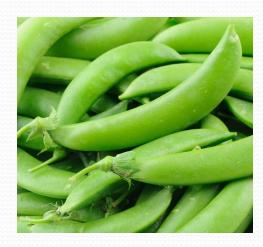
## Pisum sativum (Pea/ Matar) 9



















# THANKS EVERYONE