

Is there Protein in those grains?

Vigyan Pratiba Workshop

IMSc, Chennai

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Nativity and Diversity

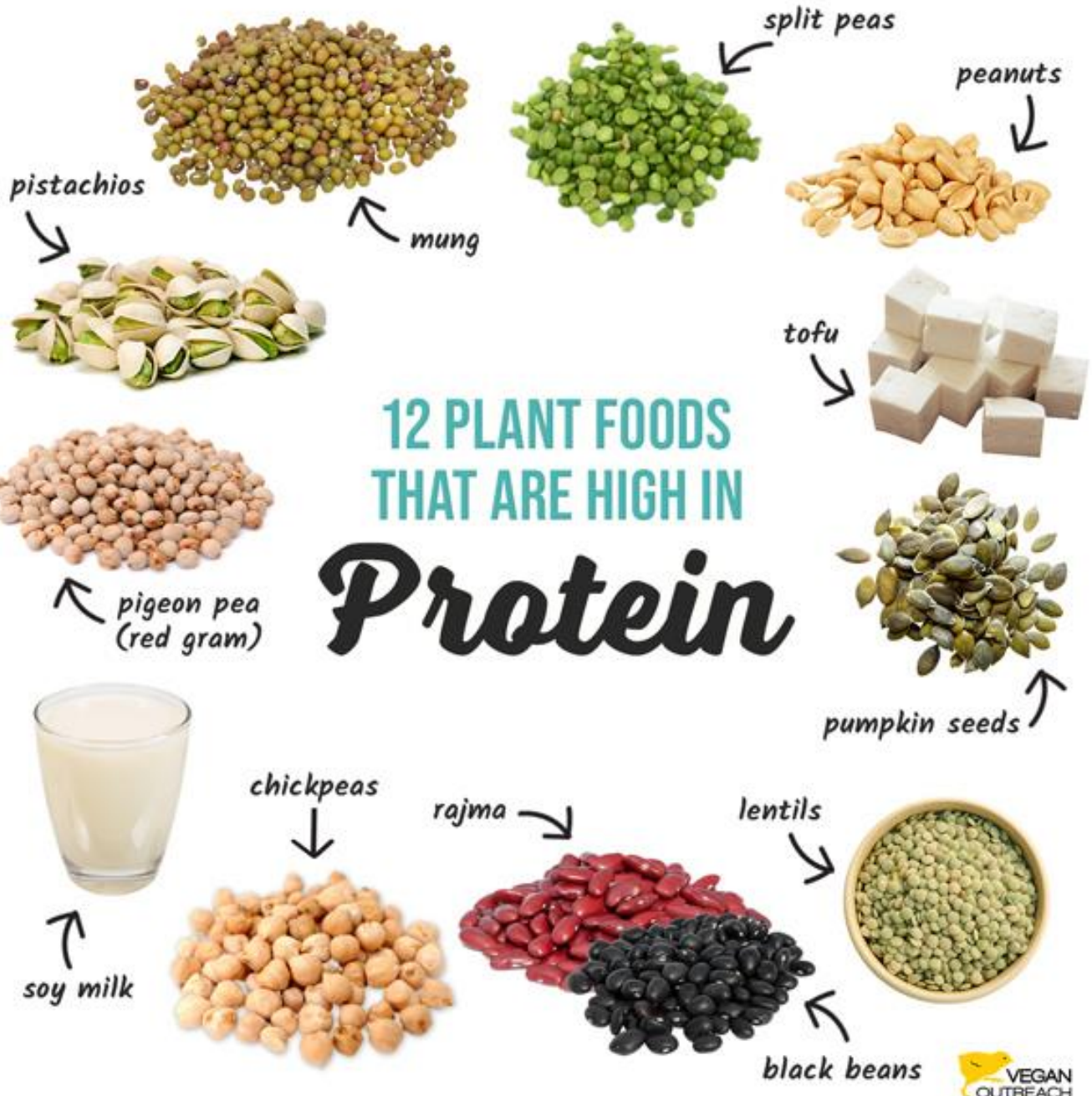
- ▶ How many of those could you identify ? List them
 - ▶ How many have you used in your cuisine?
 - ▶ Write their names in your language - Tell them aloud!
 - ▶ Name foods/ share recipe using each of them?
-
- ▶ Seen in your region - Y/N - where?
 - ▶

Plant Based Protein

Protein requirements are slightly higher for people following plant based diets because plant proteins are digested differently than animal proteins. The typical RDA for protein is 0.8 g per kg body weight. Vegan and vegetarians should consume 0.9 g protein per kg body weight. That's about 63 grams for males and 52 grams for females (though these number change based on activity level, age, etc.) Here are just some plant based protein sources!

Nuts & Seeds	 Walnuts 1 oz. (14 halves) 4.3 g protein	 Almonds 1 oz. (about 23) 6 g protein	 Chia seeds 2 tbsp. serving 6 g protein	 Pumpkin seeds 1 oz. (85 seeds) 5 g protein
	 Cashews 1 oz. (about 18) 5 g protein	 Peanut butter 2 tbsp. serving 8 g protein	 Sunflower seeds 3 tbsp. serving 6 g protein	 Almond butter 2 tbsp. serving 7 g protein
	 Lentils (cooked) 1/2 cup serving 9 g protein	 Black beans (cooked) 1/2 cup serving 7.5 g protein	 Kidney beans (cooked) 1/2 cup serving 8 g protein	 Tempeh 3 oz. serving 16 g protein
	 Edamame (cooked) 1/2 cup serving 8.5 g protein	 Tofu 150 g serving 10.35 g protein	 Chickpeas (cooked) 1/2 cup serving 7 g protein	 Black-eyed peas (cooked) 1/2 cup serving 7 g protein
Legumes	 Brown rice (cooked) 1/2 cup 4 g protein	 Soylent 3 oz. serving 21 g protein	 Whole wheat bread 2 slices 7.97 g protein	 Quinoa (cooked) 3.5 oz. serving 4 g protein
	 Farro (cooked) 1/2 cup serving 7 g protein	 Steel cut oats (cooked) 1/2 cup serving 6 g protein	 Millet (cooked) 1/2 cup serving 7 g protein	 Amaranth (cooked) 1/2 cup serving 4.5 g protein
Whole Grains				





TOP VEGETARIAN PROTEIN SOURCES



Greek Yogurt
23 grams of protein per cup



Lentils
4 grams of protein per 1/4 cup (cooked)



Beans
(chickpeas, black beans, etc.) 4 grams of protein per 1/4 cup



Cottage Cheese
14 grams of protein per 1/2 cup



Hemp Seeds
4 grams of protein per 1 tablespoon



Chia Seeds
3 grams of protein per 1 tablespoon



Edamame
5 grams of protein per 1/4 cup (shelled)



Green Peas
8 grams of protein per cup



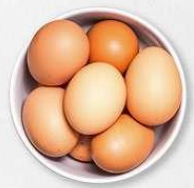
Quinoa
8 grams of protein per cup (cooked)



Peanut Butter
3.5 grams of protein per 1 tablespoon



Almonds
3 grams per 1/2 ounce



Eggs
6 grams of protein per large egg



Nativity and Diversity

- ▶ How many of those could you identify ? List them
 - ▶ How many have you used in your cuisine?
 - ▶ Write their names in your language - Tell them aloud!
 - ▶ Name foods/ share recipe using each of them?
-
- ▶ How many names, do you hear for the first time?
 - ▶ Not heard much/ not used
-
- ▶ Seen in your region - Y/N - where?
 - ▶ Guess if each of them is Native to your country or or exotic ?

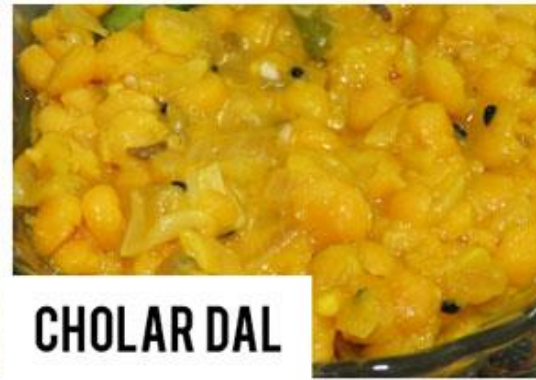
English	Hindi	Kannada	Telugu
Pulses/ Split beans / bean	Dal	Bele	Pappu
Pigeon Pea / Red Gram	Tur Dal / Toor Dal	Togari Bele	Kandi Pappu
Green Gram	Moong Dal	Hesaru Bele	Pesara pappu
Black Gram/ White Gram	Urad Dal	Uddina Bele	Minappappu
Split Bengal Gram	Chana Dal	Kadale Bele	Senaga Pappu
Red Lentils	Masoor	Kempu Togari	Erra Kandi Pappu
Green beans	Moong beans	Pacchesaru	Pesalu
Garbanzo Beans/ Chick Pea	Kabuli Chana/ Chole	Kadale Kaalu	Senagalu
Kidney Beans	Rajma	Raajma	Rajma
Peas	Matar	Batani	Bataani
Horse gram	Kulthi	Hurali	Ulavalu
Black-eyed pea	Lobia	Alasande	Alachandalu
Rice	Chaaval	Akki	Biyyam
Wheat	Gehun	Godhi	Godhuma
Corn/Maize	Makki/makai	Musukina Jola	Mokka jonna
Barley	Jow	Barley	Yava
Sorghum	Jowar	Jola	Jonna
Pearl Millet	Bajra	Sajja	Sajja
Finger Millet	Ragi	Ragi	Ragi
Cracked/Broken wheat	Dahlia	Godhi Rave	Goduma Rava
Semolina	Sooji	Rave	Rava
Vermicelli	Sevayi	Shavige	Semiya
Flattened rice	Poha		Atukulu
Sago	Sabudana	Sabakki	Saggu Biyyam
Puffed rice	Murmure	Mandakki	Maramaralu
All-purpose flour	Maida	Maida Hittu	Maida Pindi
Whole wheat flour	Atta	odhi Hittu	Godhuma Pindi
Rice flour	Chaaval ka Atta	Akki Hittu	Biyyam Pindi
Gram flour	Besan	Kadale Hittu	Senaga pindi
Corn flour	Makkai Atta	Jolada Hittu	Mokka Jonna Pindi



DAL MAKHANI



PALAK DAL



CHOLAR DAL



GUJRATI DAL



AMTI



SAMBAR



TIDALI DAL



The Spruce Eats
Vegetarian Indian Yellow Lentil Dhal Re...



Swasthi's Recipes
Dal Fry Recipe (Restaurant Style Dal ...



Bianca Zapatka
Red Lentil Dahl (Easy...



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yellow indian dal



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TOP 10 LARGEST PRODUCER OF PULSES IN INDIA FOR FY 2020-21

RAJASTHAN 4821.84 TONNES

MADHYA PRADESH 4364.74 TONNES

MAHARASHTRA 4364.74 TONNES

UTTAR PRADESH 2621.15 TONNES

KARNATAKA 2170.89 TONNES

ANDHRA PRADESH 1185.43 TONNES

GUJARAT 1759.93 TONS

JHARKHAND 908.93 TONNES

TAMIL 549.02 TONNES

TELANGANA 664.14 TONNES



With such rich food varieties, How can WE

- ▶ Help our students become aware of Nutritional needs
- ▶ Healthy School lunch box recipes, not spoil soon
- ▶ Help working women eat better
- ▶ Make men take part in Kitchen work
- ▶ Provide healthy options to the WORLD countries - under developed countries
- ▶ Reach Food goals
- ▶ Make Food carts safe, healthy
- ▶ Food tourism, Food based economy



End hunger, achieve food security and improved nutrition and promote sustainable agriculture

QUALITY PROTEIN, TRUSTED BY
ATHLETES WORLD OVER FROM
LAST 35+ YEARS



BAJRANG PUNIA
OLYMPIC MEDAL WINNER



Trends

Newgen
Business
Economics
Food
Health +
economics
Travel



ONLY for Educative purpose, Not a promotion

NUTRITIONAL BENEFITS OF PULSES

WHAT ARE PULSES?

PULSES, a subgroup of legumes, are plant foods from the Leguminosae family (commonly known as the pea family). The edible seeds of pulses are eaten by humans and animals.

FAO calls pulses only legumes with dry, edible seeds, with low fat content, are classified as pulses. FAO does not consider pulses legume species used as vegetables (e.g., green peas, green beans), for oil extraction (e.g., soybean, groundnut) and for sowing purposes (e.g., clover, alfalfa).

Worldwide, commonly eaten pulses include kidney beans, navy beans (*Phaseolus vulgaris* L.), faba beans (*Vicia faba* L.), chickpeas (*Cicer arietinum* L.), dried or split peas (*Pisum sativum* L.), mung beans (*Vigna radiata* L.) cowpeas, black-eyed peas (*Vigna unguiculata* (L.) Walp.), and several varieties of lentils (*Lens culinaris* Medik.). There are also many less well-known species of pulses such as lupines (e.g., *Lupinus albus* L., *Lupinus mutabilis* Sweet) and bambara beans (*Vigna subterranea* L.).

ONE OF THE FIVE MESSAGES THAT FAO AIMS TO HIGHLIGHT DURING THE INTERNATIONAL YEAR OF PULSES IN 2016 - ARE THE NUTRITIONAL BENEFITS OF PULSES AND ENCOURAGE A PARADIGM SHIFT TOWARDS INCLUDING MORE OF THIS NUTRITIONAL POWERHOUSE IN DIETS ALL OVER THE WORLD.

Malnutrition is one of the important contributors to many types of illnesses and, in some cases, lead to death. Malnutrition is a result of eating too little, too much or eating an unbalanced diet that does not contain the right quantity and quality of nutrients to be healthy.

Pulses typically contain about twice the amount of protein found in whole grain cereals

such as wheat, which for most populations in developing countries they constitute a major source of protein.

Pulses are an excellent complementary food for infants and young children to meet their daily nutritional needs. They can be incorporated into children's diets through family diets and school meal programmes in both developed and developing countries. Their high nutrient content also make pulses ideal for vegetarians and vegans to ensure adequate intakes of protein, minerals and vitamins.

When combined with food high in vitamin C, pulses' high iron content makes them a potent food for replenishing iron stores, particularly for women at reproductive age, who are more at risk for iron deficiency anaemia.

Older people can also benefit from eating pulses.



2016
INTERNATIONAL
YEAR OF PULSES

nutritious seeds for a sustainable future

العربية 中文 English Français Italiano Русский Español

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Recipes



Idly

Idly is commonly consumed for breakfast in South India. Because it is steam cooked without any added fat, Idly can be a good option for a healthy breakfast

0 India



Chochos (Lupines) Sushi Rolls

This recipe is for vegetarians or for sushi lovers who want to reduce their fish consumption. It was born out of a desire to go beyond traditional sushi rolls.

0 Ecuador



Greek Fasolada

Fasolada is a national dish of Greece. This bean soup consists of white beans, celery, carrots, onions, olive oil, tomato sauce, salt and pepper. It can be served with Kalamata olives, village bread, traditional sausages as well as feta cheese.

Dry Beans Greece



Zapallito relleno con ensalada tibia de lentejas

Un plato clásico de la cocina uruguaya es el zapallito relleno de carne picada. En estecaso utilizamos como variante las lentejas, acompañadas del salteado de verduras quele da mucho sabor. Es un plato que se puede consumir en cualquier época del año, tanto porque se pueden encontrar sus ingredientes, como porque es...

Lentils Uruguay



Gallo Pinto

Gallo Pinto is a traditional dish from Costa Rica. It can be eaten at any meal, especially breakfast. A similar dish is popular in Nicaragua, Panama, and El Salvador. Elsewhere this dish is also known as "Gacucinta", "Mojito Criollo", "Mojito", and

Filters

Pulses type

Country

Submit

Submit your recipe

Name of pulses	Calories (KJ)	Protein (g)	Iron (mg)
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Horse gram	1379	21.7	8.8
Soybean	1596	35.5	8.2
Moth beans	1291	19.7	7.9
Lentil whole, brown	1251	22.4	7.6

			Pulses	Protein (gram/kg)	Fat (gram/kg)	Calories (kcal/kg)
Bengal gram whole	1201	18.7				
Rajmah, brown	1245	19.5				
Bengal gram dal	1377	21.5	Red gram	223	17	3350
Black gram, whole	1219	21.9	Bengal gram	208	56	3720
Peas dry	1269	20.4	Green gram	245	12	3480
Cowpea, white	1340	21.2	Masur	251	7	3430
Green gram, whole	1229	22.5	Black gram	240	14	3470
Black gram, dal	1356	23.0	Peas	197	11	3150
Green gram, dal	1363	23.8	Other pulses	220	12	3400
Red gram dal	1384	21.7				

Ref : Evaluation of promotion of iron-rich foods for the prevention of nutritional anemia in India
 July 2020Indian Journal of Public Health 64(3):236-241

Source: Gopalanet al. (1996)

India, the world's largest producer of millets

Planning to position these as short grains superfoods with immense health benefits

Gears up to showcase 2023 as the International Year of Millets.

Creating awareness on their immense health benefits, cooking techniques and production – these grains are drought resistant and can be grown even in arid and semi arid areas will be taken up in a mission mode.





Common name of Millets in Indian Languages



Sorghum

Marathi : Jwari
Oriya : Juara
Punjabi : Jowar
Tamil : Cholam
Telugu : Jonna



Sorghum Grain

English: Sorghum
Bengali : Jowar
Gujarati : Jowari, Juar
Hindi : Jowari, Juar
Kannada : Jola



Pearl Millet

English :Pearl Millet
Bengali : Bajra
Gujarati : Bajri
Hindi : Bajra
Kannada : Sajje



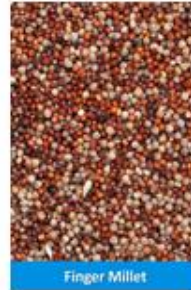
Pearl Millet

Marathi : Bajri
Oriya : Bajra
Punjabi : Bajra
Tamil : Kambu
Telugu : Sajja



Finger Millet

English : Finger Millet
Bengali : Marwa
Gujarati : Nagli, Bavto
Hindi : Ragi, Mandika,
Marwah
Kannada : Ragi



Finger Millet

Marathi : Nagli, Nachni
Oriya : Mandia
Punjabi : Mandhuka, Mandhal
Tamil : Keppai, Ragi, Kelvaragu
Telugu : Ragi Chodi



Foxtail Millet

English : Foxtail Millet
Bengali : Kaon
Gujarati : Kang
Hindi : Kakum
Kannada : Navane



Marathi : Kang, Rala
Oriya : Kanghu, Kangam,
Kora
Punjabi : Kangni
Tamil : Tenai
Telugu : Korra

Year of Millets !

Look at various
fundings
Quiz
Recipe contests
Programs

Organise

In a country like ours where we have a variety of cuisine every few Kms, where we have so much diversity in landscape, soil, water resource, we have very rich diversity

And we have many words in common, recipes that are common, yet different.

Workshops like this, where we have teachers from different parts of our country - Time to celebrate this Diversity !

Can you think of titles for lunch box to raise nutrition awareness ?

BUT WHY ? Think!



English : Barnyard Millet
Bengali : Shyama
Gujarati :
Hindi : Sanwa
Kannada : Oodalu



Marathi : ...
Oriya : Khira
Punjabi : Swank
Tamil : Kuthiraivolly
Telugu : Udalu, Kodisama



English : Kodo Millet
Bengali : Kodo
Gujarati : Kodra
Hindi : Kodon
Kannada : Harka



Marathi : Kodra
Oriya : Kodua
Punjabi : Kodra
Tamil : Varagu
Telugu : Arikelu, Arika



English : Little Millet
Bengali : Sama
Gujarati : Gajro; Kuri
Hindi : Kutki, Shavan
Kannada : Same, Save



Marathi : Sava, Halvi, vari
Oriya : Suan
Punjabi : Swank
Tamil : Samai
Telugu : Samalu



English : Proso Millet
Bengali : Cheena
Gujarati : Cheno
Hindi : Chena; Barri
Kannada : Baragu



Marathi : Vari
Oriya : China Bachari
Punjabi : Cheena
Tamil : Pani varagu
Telugu : Variga

Nutritional Benefits of Millets (for 100g of each millet)

English: Sorghum
Jwari/ Jowar
Tamil : Cholam
Telugu : Jonna

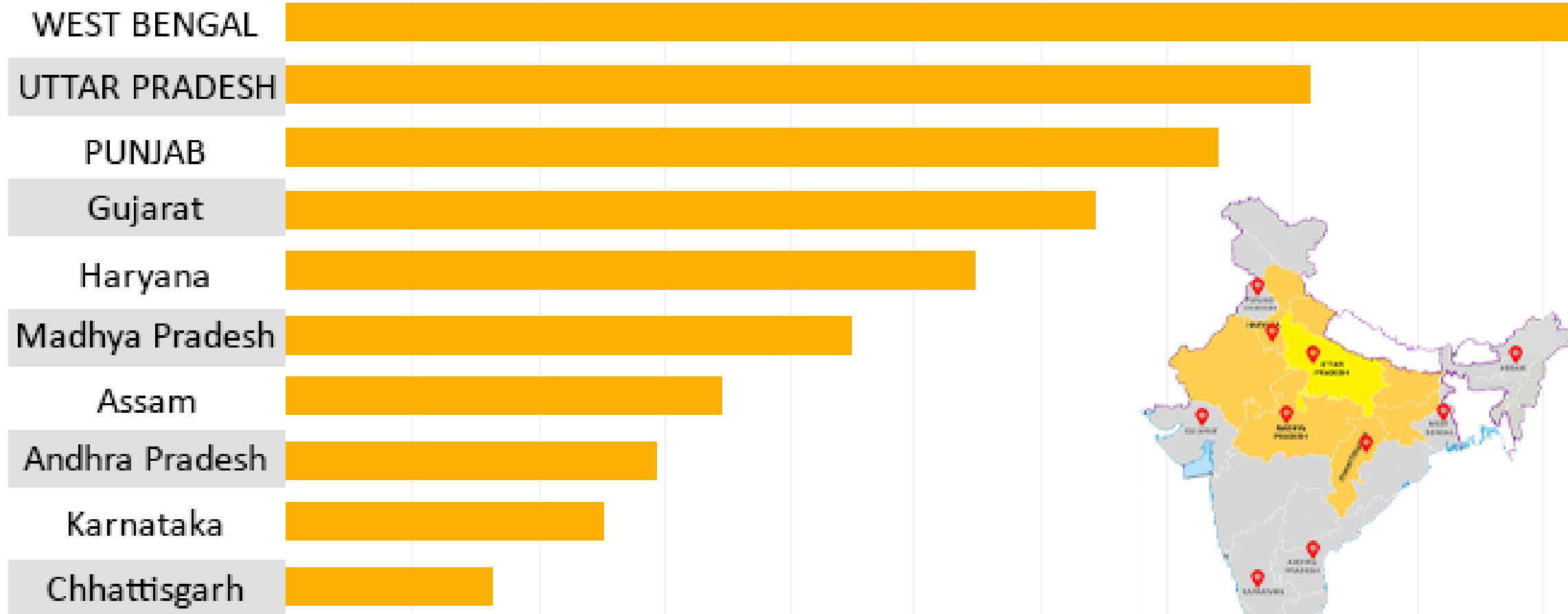
English :Pearl Millet
Bajra/ : Bajri
Kannada : Sajje
Tamil : kambu

English : Finger Millet
Marwa/ Nagli, Bavto / Ragi,
Mandika, /Nachni
Oriya : Mandia
Punjabi : Mandhuka, Mandhal
Tamil : Keppai, Ragi, Kelvaragu
Telugu : Ragi Chodi

English : Foxtail Millet
Bengali : Kaon, Gujarati : Kang
Hindi : Kakum
Navane
Oriya : Kanghu, Kangam,
Kora

	Protein (g)	Fiber (g)	Minerals (g)	Iron (mg)	Calcium (mg)
Sorghum	10	4	1.6	2.6	54
Pearl millet	10.6	1.3	2.3	16.9	38
Finger millet	7.3	3.6	2.7	3.9	344
Foxtail millet	12.3	8	3.3	2.8	31
Proso millet	12.5	2.2	1.9	0.8	14
Kodo millet	8.3	9	2.6	0.5	27
Little millet	7.7	7.6	1.5	9.3	17
Barnyard millet	11.2	10.1	4.4	15.2	11
Teff	13	8	0.85	7.6	180
Fonio	11	11.3	5.31	84.8	18
Brown top millet	11.5	12.5	4.2	0.65	0.01

TOP CROPS PRODUCING STATES OF INDIA



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- ▶ Innovations

Let us find out Protein in grains and Pulses.....