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PULSE INDIA

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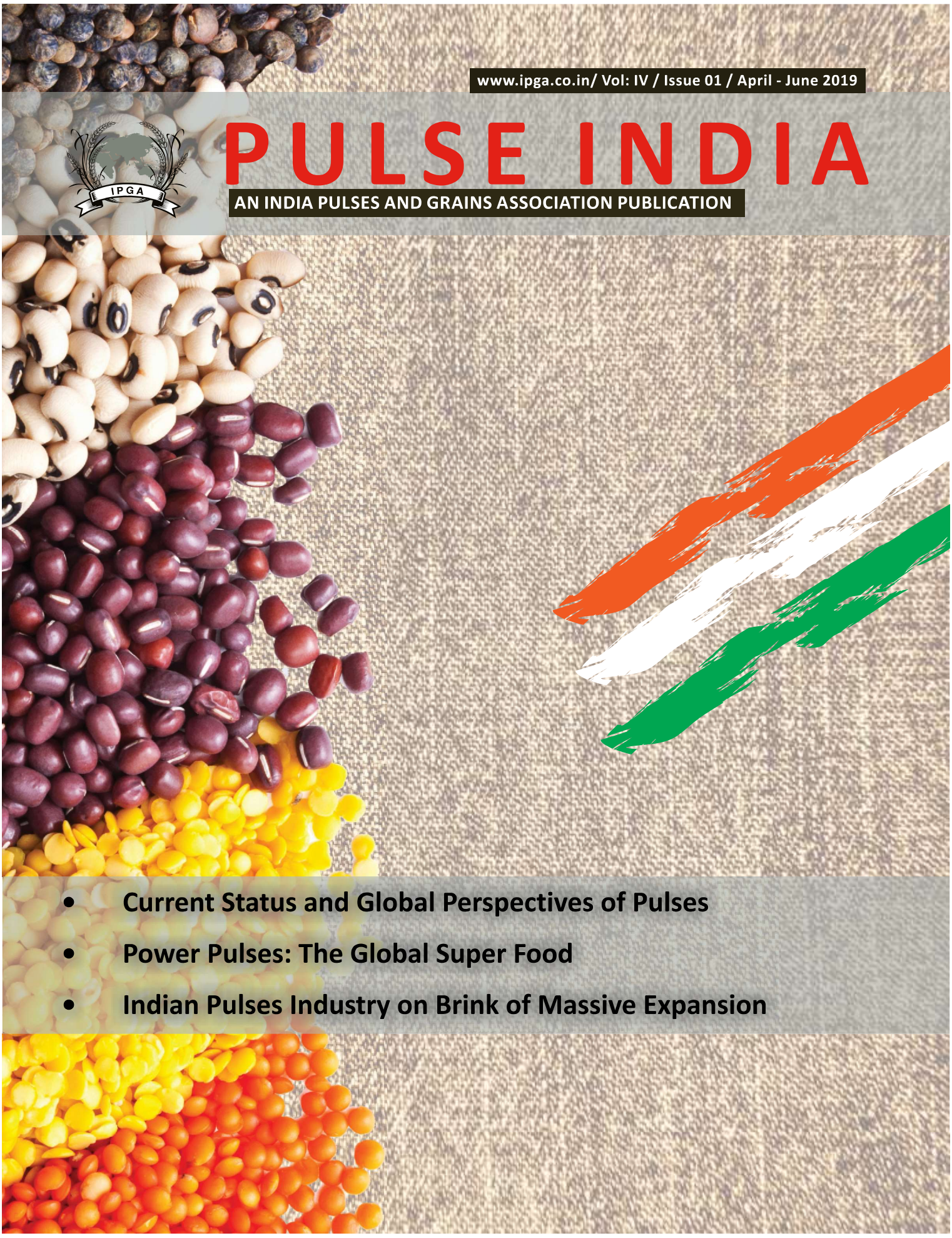

- Current Status and Global Perspectives of Pulses
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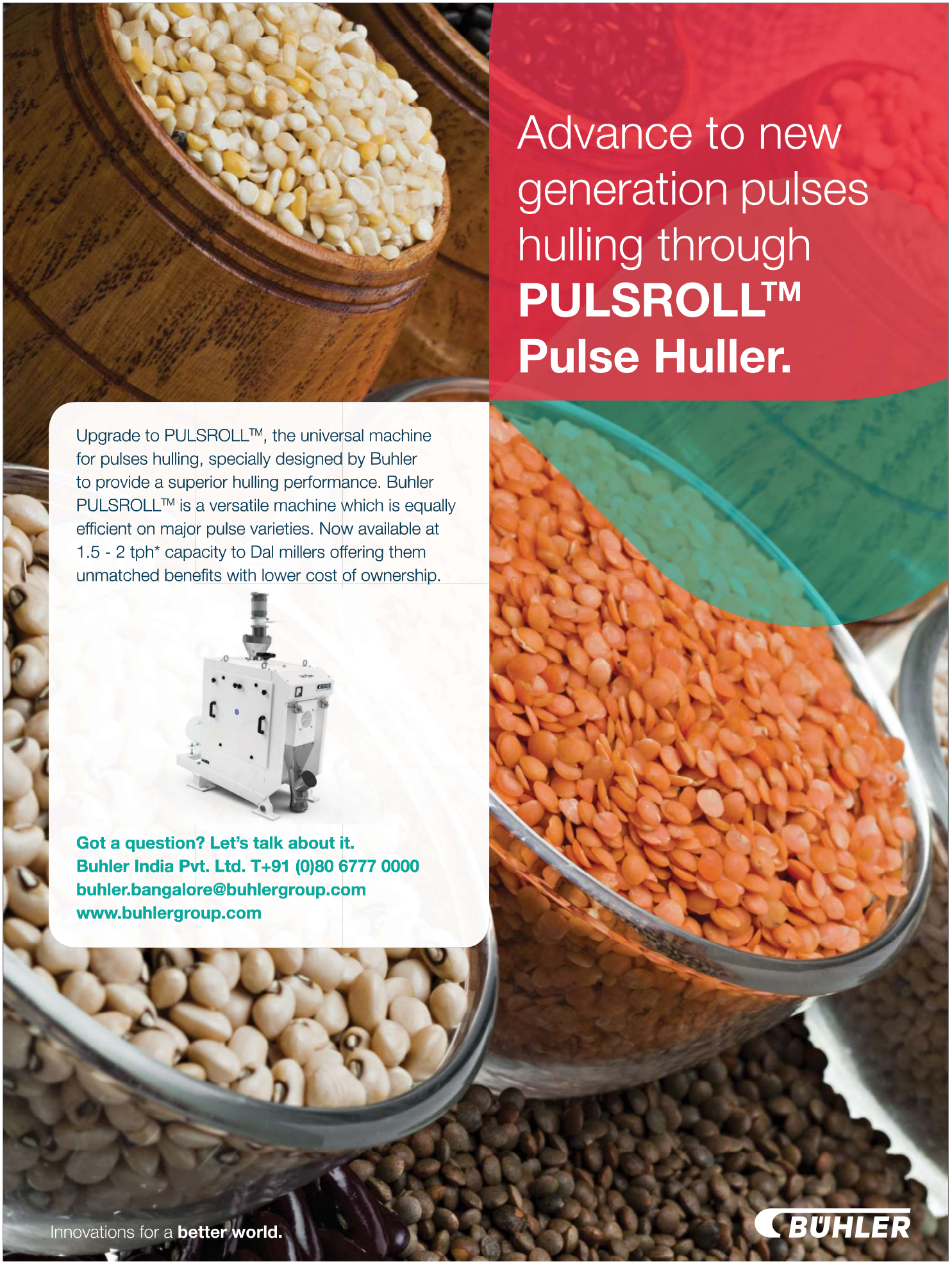
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From the Chairman's Desk

Dear Patrons,

The MSP's of various Agro commodities including pulses have been announced and there is an increase in the MSP. However, we strongly feel that increase in MSP alone will not help the cause of farmers until, there is a robust plan for the procurement also and this is not possible without the participation of private players. We have seen in the past that prices of most of pulses have not been able to reach the MSP mark in the Mandis. One of the reasons for this has been the policy of some government agencies to buy pulses at MSP and then sell the same at the price lower than MSP. Government also need to work towards lowering the cost of production and increase the yields of Crops so that margin of profits for farmers can be maintained/increased without increasing the MSP. At the same time, we must agree that a higher MSP of pulses would result in higher prices of pulses for the consumers and hence Government should suitably convey this message to consumers also. Authorities also need to keep a watch on retail prices of pulses as the main increase in prices come from retail sector and not from wholesale.

The restrictions on the import of pulses have been extended for this year also and imports are to happen through Millers/ Processors. An additional quota of 2 Lakhs Mts of Pigeon Peas (Toor) for import have also been announced by the Government with an intention of keeping the prices of Toor under control. This is a welcome move but importing through small quota allocated to Millers / Processors can result in higher cost as all the quota holders shall be trying to outdo each other to grab some quantity from overseas market for imports and this will result in the price rise at the origin. Besides this The Government also has to go through the lengthy process of quota allocation and monitoring of the same. Hence, we believe that Government should also involve Traders in the imports as they have rich experience of International trade and are better equipped to import goods in larger quantity and at a more competitive cost.

The confusion in Pulses sector continues. Last year saw a flood of petitions in various courts challenging the authority of the DGFT to issue notifications pertaining to the restrictions on the import of various pulses. Government decided to issue the new notifications under the signature of Joint Secretary but to everyone's surprise, the same has also been challenged in the High court of Rajasthan and an interim stay has been granted. IPGA during its recent engagement with Ministry of Commerce discussed this matter with the joint secretary and requested them to find a permanent solution to this issue as these interim stays granted by courts have resulted in large import of pulses happening in India by some selected few people. We shall continue to engage with the Government from time to time to apprise them of the developments in the pulses sector.

Jai Hind.

ZAVERCHAND (JITU) BHEDA
CHAIRMAN
Indian Pulses and Grains Association

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Current Status and Global Perspectives of Pulses

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The protein rich grains of the pulses contribute in nutritional security and thus improve human health. At the same time, cultivation of pulses helps in improving soils health due to capabilities of their plants to fix atmospheric nitrogen besides having deep and extensive root system that opens up soil to the deeper strata facilitating buildup of microbial biomass (Sandhu and Chaturvedi, 2018). Globally, pulses are grown on about 56.12 million hectares (m ha) area producing 42.34 million tonnes(m t) of the grain during 2017 (http://www.fao.org/faostat/en) indicating low yield per unit area (755 kg/ha) compared to cereals and many other crops. Vast differences exist among producing continents in terms of area, production and yields of pulses. During 2017, India shared 34% of the total global area contributing 35% to the total production indicating vast regional differences in pulses cultivation. Besides Asia, pulses (chickpea, lentil and pea) are also cultivated in Australia and Canada which is mainly for export purpose. On the similar lines, Africa has also emerging as an exporter of pulses to Indian sub-continent. During 2017-18 about 5.60 m t of different pulses were imported mainly from Canada, Australia, Myanmar, Mozambique and Tanzania, etc. (Table 1). Out of the total import the share of pea was maximum (51.31%).

Table 1. Major source of import of pulses in India

Pulses	Major import sources
Pea	Canada, Russia, Ukraine, Romania, Australia
Chickpea	Australia, USA, Myanmar, Tanzania, Sudan
Mungbean/Urdbean	Myanmar, Tanzania, Australia, Uzbekistan, Mozambique
Lentil	Canada, Australia, USA, Turkey
Pigeonpea	Myanmar, Mozambique, Sudan, Tanzania, Malawi

Source: DAC&FW, Ministry of Agriculture & Farmers Welfare, GoI

India is the largest producer (24-25 m t) and consumer (27-28 m t) of pulses annually. In India, more than a dozen and half pulses are cultivated in various parts of the country. Out of these chickpea, pigeonpea, mungbean, urdbean, lentil and pea are major ones. During 2017-18, Indian farmers could produce 25.42 m t of the pulses from 29.81 m ha registering impressive productivity (853 kg/ha) of total pulses (Table 2). Madhya Pradesh (25%), Rajasthan (18%), Maharashtra (14%), Uttar Pradesh (7%), Karnataka (10%), Andhra Pradesh (5%), Gujarat (3%), Jharkhand (3%) and Tamil Nadu are major pulses growing states contributed more than 90% of the total pulses area during 2017-18. Similarly, Madhya Pradesh (32%) is the largest producer of pulses followed by Maharashtra (13%), Rajasthan (13%), Uttar Pradesh (9%), Karnataka (8%), Andhra Pradesh (5%), Gujarat (3%), Tamilnadu (3%) and Jharkhand (3%). These ten states shared more than 91% of the total pulses production during same year. There is vast scope to increase area and improve productivity in states like Haryana, Madhya Pradesh, Bihar, Odisha, Jharkhand, Tamil Nadu and North-East Hill states. There is further scope to increase pulses production and productivity adopting recently developed varieties and matching integrated crop production and protection technologies.

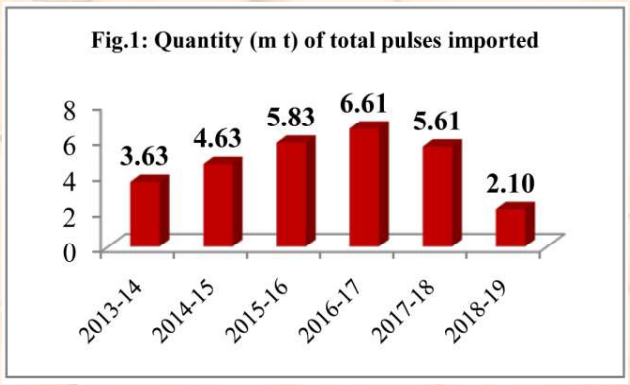
Table 2. Area, production and yield of total pulses (2007-2019)

Period	Area (m ha)	Production (m t)	Yield (kg/ha)
X Plan (2002-07)	22.46	13.35	594
XI Plan (2007-12)	23.97	15.86	661
XII Plan (2012-17)	25.28	18.85	745
2017-18	29.81	25.42	853
2018-19*	-	23.22	-

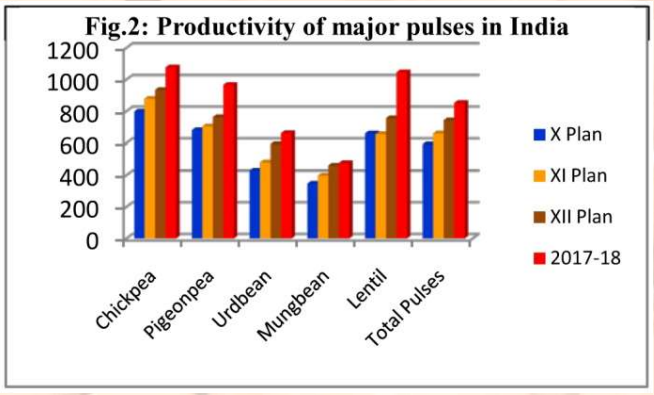
**Third Advance estimates,*
Source: DAC&FW, Ministry of Agriculture & Farmers Welfare, GoI

The pulses' grains are rich source of protein and many essential amino acids those are not present in cereals for vegetarian population of India, therefore, will remain in demand. In 2015-16, indigenous production of pulses (16.35 m t) reduced by 2.91 m t and 0.80 m t in comparison to 2013-14 (19.26 m t) and 2014-15 (17.15 m t), respectively (Source: Commodity Profile for Pulses-April, 2019). This created deficit of pulses in Indian markets. As a result at the beginning of 2016 there was hue and cry for pulses in Indian market and the consumers' price were all time high. To fulfill this supply-

demand gap, the import of pulses became a global business and many players started growing/trading pulses like pea, chickpea, lentil, pigeonpea, urdbean and mungbean in big way. Later, it happened also as the pulses' import reached from 3.63 m t (2013-14) to 6.61 m t in 2016-17 indicating continuous growth in import for 3 years to fulfill demand for ever increasing population in India until country could produce 23.13 m t (2016-17) and 25.23 m t (2017-18) of pulses for two consecutive years. As consequences of high



production of pulses during last 3 years, the import of pulses reduced drastically in 2018-19 and only 2.10 m t of pulses were imported during April 2018-February 2019 (Fig. 1). It has been estimated by the Ministry of Agriculture & Farmers Welfare, Government of India that during 2018-19 Indian farmers are going to produce about 23.22 m t of pulses that will be restricting the import to a large extent (http://www.pib.nic.in/Pressreleaseshare.aspx?PRID=1573283). This could happen due to increase in productivity of pulses in India during last consecutive 3 Five Year Plan periods (Fig. 2). Further productivity increased during 2017-18 and expected to increase in 2018-19 also. However, due to predicted deficient monsoon rains during 2019, area under pulses may reduce resulting in lower production compare to preceding two years.



Besides importing huge quantity of pulses, India is also exporting some of the pulses to the world market though the share is meager. During 2017-18, the total export of pulses was about 0.179 m t that has gone up in 2018-19 (0.261 m t). Out of the total export, chickpea contributed maximum (70-80%) during both the years. This clearly indicates that scope exists to produce pulses for export oriented market (Chaturvedi et al. 2018) by pinpointing pulse crops and maintaining quality standards as per requirement. The consumers' preferred varieties of pulses should be developed and cultivated in designated area for export purpose so that aggregation and processing of produce can be managed with minimum cost.

What is happening globally?

There has been a deficit pre-monsoon rain in most part of the country and forecast of below normal rainfall in the coming rainy season has been predicted in central, south and eastern states. Yet, there may not be problem of good harvest of pulses even in 2019-20 because of the availability of quality seed of desired varieties and preparedness at the Government level. With the implementation of the farmers' centric policies to boost indigenous pulses production, Indian farmers are going to produce sufficient pulses for domestic consumption even during 2018-19 (23.22 m t). These current policy shifts resulted in reduced import of pea that is often not consumed directly by the people of India. It is also hard fact that unknowingly many consumers in different parts of the country are consuming pea flour in the name of chickpea flour that means the imported pea (yellow pea) had been used as adulterant for years together. With the recent policy changes the import of pea (yellow pea) has gone down. This may further boost farm gate price for pea and other pulses in India. This is going to be rewarding for Indian farmers as they can now fetch good price even for pea.

The Canada is already facing problem of dry season and the sowing area has been affected adversely. It has been noticed that lentil area has gone down by 0.185 ha which is 5% less than 2018 and 14% below the five-year average (https://farmlead.com/blog/breakfast-brief/apr-2019-pea-prices-pulses/) indicating reduction of about 0.11 m t in lentil during 2019.

The Australians are also discussing seriously about increasing pulses production in western and eastern Australia during 2019. The strategies for expansion of pulses cultivation in eastern states of Australia will be around recent innovations

in agronomy and varieties for taking crops on sandy soils and soils with lower pH. These advances may include soil amelioration, improved varieties possessing tolerance to lower pH and a range of pre-and post emergence herbicides, etc. (www.agric.wa.gov.au/news/grains-research-updates-2019-potential-pulses-western-australia). The seeding of winter season pulses (chickpea, lentil and pea) is at full swing in all major pulses growing states like Western Australia, New South Wells, Victoria and South Australia.In view of rapidly changing policies in USA, the China may emerge as a new import market for pea, lupin and faba bean etc. Chinese have to search alternate for imports of soybean and other grain legumes from USA and similar exporting countries. Indian trade counterparts and system responsible for promotion of pulses with better farm gate price need to watch winter season pulses' seeding progress in Australia and crops' progress in Canada to formulate future strategies/plans for coming rabi season i.e. 2019-20. This will help in proper planning and making prediction of market to some extent that is likely to ensure better price to Indian farmers from cultivation of pulses.

African agriculture is largely dependent on natural soil fertility and there is seldom use of chemical fertilizers in pulses or other grain legumes. In recent years, Ethiopia, Mozambique, Tanzania, Morocco, Uganda, Sudan etc. are emerging as major countries producing pulses though the domestic consumption in these countries is at minimal. The facilities and capacity to store or hoard is also at minimal, therefore, yearly variations in pulses output may not be as important for Indian market as from Australia and Canada.

In recent times, Ethiopia has emerged as one of the major chickpea producing country covering about 0.24 m ha of area producing 0.45 m t with average yield of 1.875 tons per ha-1. Now Ethiopia is exporting chickpea of worth more than US$60 million annually (https://reliefweb.int/report/ethiopia/chickpea-revolution-ethiopia) to many countries. Similarly, Tanzania is also producing about 1.75 m t of pulses, mainly pigeonpea and chickpea annually for export. The preference for Tanzanian pigeonpea in India is not on the same line as of urdbean from Myanmar or pea/lentil from Canada and chickpea/lentil from Australia.

Tanzania's pigeonpea exports to India ranged between 0.16-0.18 m t (97%) annually out of an estimated 0.20 m t yearly production. The leftover was usually exported to the Middle East, Kenya, Eastern Europe, and North America. With the higher indigenous production of pulses and policy change in India, the import from Tanzania reduced to almost zero. This may further encourage Indian farmers to grow more pulses.

Considering the domestic demand for pulses, India has to formulate and implement long term policy of import targeting favoured countries to maintain supply and pulses' price for consumers. The fluctuations in area under pulses in India and erratic monsoon season/weather conditions may give a setback to indigenous pulses production. Further, the area may again shift to other remunerative or primary crops like cereals, oilseeds and vegetables, etc.

Policies and technologies having impact on pulses scenario

The major policy change in India that has impacted pulses' trade globally is increase in minimum support price (MSP) and direct procurement of pulses from farmers at MSP. During last 5 years Government of India had increase MSP for pulses (28-50%) substantially (Table 3). Indian farmers have capacity to produce more pulses, if remunerative prices are assured. The quantitative restriction on import of some of the pulses like pigeonpea and tariff on pea will certainly pay dividends to the farmers in years to come. Similarly, Pradhan Mantri Fasal Bima Yojna (PMFBY) is providing risk cover and 'Per Drop More Crop' campaign for use of micro-irrigation will help in increasing crops' productivity.

Table 3. Minimum Support Price (Rs/Quintal) of pulses in 2018-19 and % increase over 2014-15

Crops	2014-15	2015-16	2016-17	2017-18	2018-19	% increase
Pigeonpea	4350	4625	5050	5450	5675	30.45
Chickpea	3175	3500	4000	4400	4620	45.66
Mungbean	4600	4850	5225	5575	6975	51.63
Urdbean	4350	4625	5000	5400	5600	28.74
Lentil	3075	3400	3950	4250	4475	45.53

Sources: *Commission for Agricultural Costs and Prices* (CACP), DAC&FW, Ministry of Agriculture & Farmers Welfare, GoI

On technology front, popularization of newly released about 150 high yielding varieties having resistance/tolerance to major biotic and abiotic stresses, increased availability of quality seeds, matching integrated crop production and protection technologies and increased awareness about pulses promotional activities among farmers led country to realize 'Pulses Revolution' and attain almost self-sufficiency in indigenous production of pulses. The impact of technologies developed and adopted can be seen in terms of pulse production that may remain around 23.22 m t during 2018-19 even after reduction in area due to adverse weather conditions during kharif and rabi seasons.

Looking ahead

For the development of pulses' sector in terms of improved crop based technologies and favourable policy support that is likely to continue will encourage Indian farmers to grow more pulses in years to come. This will certainly help in reducing dependency on imported pulses. However, India may continue to import pulses from elsewhere to contain price rise and meet ever increasing demand for pulses. It is expected that India may need 26.50 m t of pulses by 2020 indicating a demand-supply gap of about 2.5 m t and further additional 5-6 m t will be required by 2030. Not only to sustain current levels of production but also further enhance per unit area yield. In changing climatic conditions, there is need of good investment to develop multi-adversities resistant varieties having better solar light use efficiency and enhanced genetic yield potential, integrated production and protection technologies, accelerated quality seed production with better delivery system, farmers' centric policies, involvement of farmers in decision making, sefficient transfer of technologies network, market, procurement at remunerative minimum support price, bringing pulses in mid-day meals to ensure protein rich diet to the growing students and public distribution system and other social schemes to maintain supply-consumption chain. If current policies are continuing, there will be no dearth of pulses in India. Instead of increasing MSP even pulse growers can be linked with recently launched scheme. 'Pradhan Mantri Kisan Samman Nidhi' in major pulses growing state to encourage pulses production.

In view of globalization of agriculture, dedicated system has to be established for monitoring of the developments in pulses and other food grains sectors including status (area statistics) of these commodities in other countries for maintaining balance in India. Farmers can be advised based on monitoring data to grow less or more pulses or other crops so that India remains competitive globally in agriculture sector fulfilling domestic demand.

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When would the pulse of pulses trader be stable ?

Gaurav Bagdai

Director of G.P. Agri Brokers

India has always remained the benchmark market for pulses in global podium. India ranks first in world when it comes to vegetarian population, with around 35-38% of its total population consuming vegetarian food. For vegetarians, pulses are cheapest and most important source of protein in the day to day diet. Thus pulses have a very important place in daily diet of the masses as well as the classes. Indian pulses trade history has been a very interesting journey so far.

Till year 2006, India was also one of the major exporters in the world market before turning to largest importer. In year 2017 Indian pulses import were at record levels. Due to shortage of supply at home the exports of most of the pulses were banned. Low productivity and shrinking acre ages amidst better remunerative alternate crop options for farmers like oilseeds and grains had a great impact on pulses production in the country. This, along with two consecutive drought seasons resulted in record prices of all the pulses during 2015-16. Record prices along with attractive incentives in the form of MSP resulted in record production of all the pulses. Thus once again opening doors for exports last year mainly Desi chana when exports were 1.5 times of previous season at 2.6 lakh tons, previously India had exported 3.7 lakh tons in 2013.

In recent years, owing to record production of pulses, India is slowly turning self-sufficient in terms of supplies. The formation of new government in year 2014 brought various reforms in India's trade and industry as well as agriculture sector. The historic move of Demonetisation of high denomination currencies in November 2016 was executed followed by implementation of Goods and Service Tax GST in July 2017 shuddered the functioning of the market. These moves by the government have been a major step to organize the operations of the market which was largely ruled by unorganized sector. Being self-reliant for food grains is also one of the key agenda of this government. To achieve this government encouraged farmers to produce pulses by increasing the MSP of pulses significantly, imposing hefty import duties and quantity restrictions on imports. To understand the pulses trade dynamics in India, the period could be divided between pre GST and post GST period.

The pre GST period was largely unorganized. Trades were confined in the hands of few big players who dominated as well as manipulated the markets. With GST coming into force, the laws of GST and E-way bill on transport has reduced the functioning of parallel economy or the black market. This has impacted the market participation in large way as the influx of black money in the commodities market which had a share of 25-30% is now reduced to mere 5%. The traders used to stock large quantities in the name of farmers, this has been stopped completely and there is more clarity on the actual supply scenario of every pulse.

The demand of pulses continued to grow in India with robust increase in population. However, the growth in supply could not match the pace of demand growth. The robust growth in demand is largely attributed to the increase in income levels which increased standard of living, urbanization and modernization. Attractive MSP in recent years have been one of the crucial factor for increase in pulses acreage in India. In early year 2000-2001 total Pulses acreage was pegged at 20.3 million hectares and in 2016-17 it has increased to 29.46 million hectares. However, there is still scope for the yield potential to increase as India's per hectare yield in pulses is substantially low at 750-800 kg per hectare in comparison with the global producing nations like Australia and Canada whose average yield is over 2000 kg per hectare. This increased the necessity of imports of pulses to an extent that some of the countries in world started producing exclusively for Indian markets. Countries like Canada, Australia, Myanmar and African nations produced Peas, Chickpeas, Pigeon peas, Lentils, Urad and Moong entirely for India.

The recent policies introduced in Indian pulses market seems to be farmer as well as consumer friendly. The government has been able to successfully encourage farmer's interest in pulses

by attractive sops and restricting the imports. The authorities have managed to keep the inflation under control by timely releasing the procured stocks and keep check on price rise. However in this process, the trade lobby mainly importers as well as the exporting countries have been on the losing end. The fact that there is so much uncertainty in Indian monsoon that any disturbance would shake the supply base which may necessitate reversal of stringent trade policies. While the demand would grow at a secular pace, there is a limit to increase in acreage due to limited land resources. Hence the only ways to maintain the supply and demand balance is improving yields to global standards or else allow imports freely.

This season, due to lower production of tur and diminishing stocks in private as well as with government pool, government increased the import quota to 4 lakh tons from 2 lakh tons. Despite this import parity for tur has not set in due to low availability in global markets.

Indian imports are currently facing restrictions in the form of huge import duties and quantity restrictions. One of the major challenges faced by the traders is the logistic bottlenecks in India. Being a huge country most of the times imports are cheaper as compared to interstate transport. Due to this the government is also compelled to make timely alteration to its policies to cater the end users requirement. The classic example is of black Mapte and peas. Despite restrictions on imports large quantity was imported by bringing in stay orders by state high court to the notification released by the ministry. This was due to the distance between the producing state situated in central and western regions and consuming states being in southern India. While the allotted import quota was of 1.5 lakh tons the actual imports surpassed 2.5 lakh tons. In case of peas as well imports last year were around 8.5 lakh tons as against quantity restrictions on import of around 1.5 lakh tons.

Launching of Moong futures at NCDEX is also one of the positive steps taken by the authorities to ensure fair price discovery. Futures market in the form of backwardation or contango exhibits the market scenario well before time and helps the end user in the entire value chain to take wise decision in his trade.

India is also playing a major role in ongoing world trade war. If not China had come for the rescue of Canadian peas, peas situation would have been worse than that of US soy beans. History has been a proof that trade war has never been a win situation for nations causing it as well as for the nation facing the brunt of it. In India as well it appears that governments aim is for the benefit of farmers and consumers. In this process the traders are in the situation of a step son trying to adjust in the given tough situation. The strategy adopted by the authorities is of buying high and selling low, this some how is not likely to benefit the industry as a whole in long run as the government's losses will in turn be losses of the industry as a whole. The minimum support prices are being raised significantly in recent years however the procurement is merely 10-15 percent of the total production of a particular pulse like Tur, Urad and Moong. Best ever procurement was in case of chana made last year where the procurement was 25-30 percent at 26 lakh tons out of the production of 100 lakh tons. Here the benefit is passed to a small population of farmer who sells to government hence despite the persistent bullish MSP's. The government procurement ends up only limiting the seasonal fall during the harvest pressure. Large numbers of farmers who sell in free market fail to avail any benefit from the government schemes.

In order to maintain the equilibrium of the market in long run, the trade policies should be liberal. Any stringent norms and interference disturbs the natural commodity cycle which is not healthy for the overall development of the economy in long run.

Power Pulses: The Global Super Food

Naaznin Husein

President Indian Dietetic Association, Founder Freedom Wellness Management.

Pulses have been nourishing people around the world for thousands of years. It is said to be a super food and to most people is known by dried peas, lentils, bean, chickpeas, and other varied dried bean varieties. These have been a staple for centuries. Many of these ingredients have long been used to extend meats and create meat substitutes. They have strong ties to many ethnic cuisines, most notably Indian, Mediterranean and Middle Eastern. And now, we see people embrace them for their "super food" status. Pulses are gluten-free and vegetarian; they have special properties that make them particularly attractive to today's health-conscious consumers. They are naturally high in protein and dietary fibre and are a rich source of minerals, including iron, zinc and phosphorus, as well as a source of B vitamins and folic acid. Nutrient-dense, pulses are comprised of 23 per cent protein, supply gluten-free and low glycemic carbohydrates and provide 7 to 17 grams of fibre per one-half cup (125 ml). They are also an excellent source of iron, potassium, magnesium, zinc and B vitamins including folate, thiamin and niacin. Pulses are considered non-allergenic proteins that are not genetically modified (non-GMO) and have a low glycemic index. They've been shown to reduce the risk of heart disease and diabetes, lower blood pressure and cholesterol, and help with weight loss.

Pulses are grown in every corner of the world. In India the largest producer of pulses are Madhya Pradesh (23%), Uttar Pradesh (18%), Maharashtra (14%), Rajasthan (11%) and Andhra Pradesh (9%). There are over 173 countries in the world that grow and export pulses.

Pulses are the edible seeds of legume plants that are eaten widely on a global range. Some of the commonly used forms of Pulses are chickpeas, Lentils (red and green types),Faba and Broad beans, Field peas (dun, white and green types), Lupins (narrow-leafed and albus types), Mung beans and Navy ('baked') beans. Pulses are a versatile food that can be eaten for breakfast, lunch or dinner. They can be a main dish, a side dish or a healthy ingredient in baked goods, snacks and even beverages.

Pulses have an excellent amino acid profile and mineral content. When paired with other flours, pulses offer certain amino acids in higher amounts, which create a more complete amino acid profile in the product. Nearly every cuisine has its own variation of "rice and beans" or "whole grains and pulses." Pulses (the food group that includes beans, peas, lentils, and chickpeas) are natural partners for whole grains from both a culinary and a nutrition science perspective. Long before researchers discovered the health benefits of combining complementary proteins (methionine in grains, and lysine in pulses) to provide all essential amino acids, dishes like lentil daal with whole wheat roti, black beans with corn tortillas and black-eyed peas with brown rice or sorghum were common place. The traditional Mediterranean diet is rich in grain and pulse pairings. Medames made from fava beans, Mujaddara made from lentils and Hummus made from chickpeas. These are all popular bean dishes that are often served alongside grains or grain products (such as pita bread or barley rusks). Pulses especially black beans are served up with rice in various combinations throughout Latin America. In Costa Rica and Brazil, gallo pinto is the traditional dish made of rice and beans. Feijoada, a meaty black bean stew served with rice and oranges, is said to be the national dish of Brazil. Traditional African dish is jollof rice, a spicy one pot basmati rice and tomato dish often served along side black-eyed peas.

Pulses to Cure

Most national dietary guidelines recommend pulses as part of a healthy diet. Studies have shown that people who eat at least ½ cup of pulses per day have higher intakes of fibre, protein, calcium, potassium, folate, zinc, iron, and magnesium as well as lower intakes of total and saturated fat. The carbohydrates in pulses include oligosaccharides and resistant starch which can increase production of good bacteria for a healthy gut. Pulses can be included in the diet to cure and

prevent the occurrence of certain deadly diseases like Cancer, Diabetes Mellitus and Hypertension.

Beat that sugar

Pulses are high in fibre and have a low glycemic index, making them particularly beneficial to people with diabetes by assisting in maintaining healthy blood glucose and insulin levels, because they do not cause blood sugar levels to raise as much as sugary or starchy foods that are low in fibre. In addition to fibre, pulses also have other carbohydrates that are complex and take longer to break down compared with other carbohydrates (simple sugars). This means they provide energy for a longer time after you eat them compared with a quick energy source like sugars. Keeping blood sugar levels within the normal range reduces the risk of developing diabetes and also helps people who have diabetes to avoid having more health problems associated with levels that are not well controlled.

Heart healthy

Pulses are a heart healthy food choice. Research has shown that eating pulses can lower blood cholesterol, reduce blood pressure and help with body weight management, which are all risk factors for heart disease. Fibre in pulses serves to bind toxins and cholesterol in the gut so these substances can be removed from the body and pulses are also low in saturated and trans-fats and high in soluble fibre. This improves heart health and lowers blood cholesterol.

Cancer prevention

Studies have shown that people who eat diets containing pulses regularly have reduced risks of some cancers. Because it contains phytochemicals, saponins, and tannins found in pulses possess antioxidant and anti-carcinogenic effects, indicating that pulses may have significant anti-cancer effects.

Keeping the pounds off

As we all know that losing weight is hard. Keeping weight off can be even harder. A recent meta-study has shown that eating three quarters of a cup a day can result in losing weight. Eating pulses also helps prevent the incremental weight gain that often occurs with age. Pulses are rich in protein and fibre, and a low in fat, which can all help with body weight management. Protein in pulses stimulates the release of gastric hormones that cause the feeling of fullness. They are high in complex carbohydrates, which mean they are slowly digested and give a feeling of satiety. A number of studies have confirmed that the high protein and fibre content of pulses is the main reason attributing to the satiating property of pulses. The reduced availability of calories from resistant starch in pulses may also contribute to their weight loss properties. White beans, for example, have intact cell walls that encapsulate starch granules, preventing them from being absorbed in the gut. By slowing the rise in glucose and insulin, pulses may help prevent overeating. In so doing, dietary pulses may improve adherence to a weight reduction diets.

Environmental friendly

Pulses are key to lower the environmental impact of food consumption and production. It improves water use efficiency, soil health, and they have a low carbon footprint as the farmers do not have to add large amount of nitrogen fertilizers.

Pulse crops are one of the most sustainable crops a farmer can grow. It takes just 43 gallons of water to produce one pound of pulses, compared with 216 for soybeans and 368 for peanuts. They also contribute to soil quality by fixing nitrogen in the soil. Pulse crops produce a number of different compounds that feed soil microbes and benefit soil health. After pulse crops are harvested, they leave behind nitrogen-rich crop residues that provide extra nutrients for the next crop that is grown. Growing pulse crops in rotation with other crops enables the soil to support larger, more diverse populations of soil organisms that help maintain and increase soil fertility.

An affordable food loaded with protein, fibre, vitamins and minerals, pulses are good for the plate and for the planet. It is one of the most sustainable crops. They require little water and fertilization to grow. By 2050, global pulse production could double again, providing the rapidly growing world with a much needed source of healthy, sustainable protein.

Guidelines for choosing Global pulses

Pulses are the dried seeds of legumes and come in as many different shapes and sizes. A pulse can go by many different names, depending on what part of the world you are in, so the name for a pulse you encounter in a recipe may not be the same name it goes by at your local store.

This guide will show you a visual reference, description and common names for some of the varieties of the four most common pulses: beans, chickpeas, lentils and peas. Also helps you to identify them more easily and incorporate them into your lifestyle.

CATEGORIES OF GLOBAL PULSES	DESCRIPTION	VARIETIES	
1. Lentils (Lens Culinaris)	The lentil is an edible legume. It is a bushy	Beluga Lentils	

	annual plant known for its lens-shaped seeds. Split lentils known as dal. Lentil is a dietary staple throughout the Indian subcontinent. As a food crop, the majority of world production comes from Canada, India, and Turkey.	French Green Lentils Brown Lentils Red Lentils (Split) Lentils Green	
2. Beans (Phaseolus Vulgaris)	Phaseolus vulgaris, also known as the common bean, green bean and French bean, among other names, is an herbaceous annual plant grown worldwide for its edible dry seeds or unripe fruit (both commonly called beans). The main categories of common beans, on the basis of use, are dry beans, snap beans and shell bean.	Adzuki Beans Appaloosa Beans Baby Lima Beans Black Calypso Beans Black Turtle Beans Dark Red Kidney Beans Jacob's Cattle Trout Beans Large Faba Beans Great Northern Beans Pinto Beans Romano Beans Tongue of Fire White Kidney Beans Scarlet Runner Beans White Navy Bean	
3. Peas	The pea is most commonly the small spherical seed or the seed-pod of the pod fruit Pisumsativum. Each pod contains several peas, which can be green or yellow. Pea varieties include garden peas (fresh and green peas), field peas (dried peas), and pea varieties are grown primarily as forage crops.	Black-Eyed Peas Yellow Peas (Split) Yellow Peas (Whole) Yellow-Eyed Peas Pigeon Peas Green Peas (Split) Green Peas (Whole)	
4. Chickpeas (Cicer Arietinum)	Chickpeas are a round, beige pulse that is popular across the globe. Many people consume chickpeas in the form of hummus, a type of dip made from mashed chickpeas and tahini.		

Quick and easy nutrient dense recipes

RECIPE NAME	INGREDIENTS	METHOD
1. JERK SWEET POTATO AND BLACK BEAN CURRY Cuisine: Caribbean	2 Onions (1 diced and 1 roughly chopped), 2 tbsp sunflower oil, 50 g ginger and roughly chopped, 1 small bunch coriander, 3 tbsp jerk seasoning, 2 Thyme, Sprigs, 400 g chopped tomato, 4 tbsp red Wine Vinegar, 3 tbsp demerera sugar, 2 vegetable stock cubes, 1 kg sweet potato (Peeled), 450 g roasted red peppers, 2 vegetable stock cubes, 2 x 400 gms black canned beans	1. Cook the diced onion in the sunflower oil in a big pan until soft. 2. Meanwhile, whizz together the chopped onion, ginger, coriander stalks and jerk seasoning with a hand-held blender. 3. Add to the softened onion and fry until brown. 4. Stir in the thyme, chopped tomatoes, vinegar, sugar and stock cubes with 600ml water and bring to a simmer (10 minutes). 5. Then add the sweet potatoes and simmer for 10 minutes more. 6. Stir in the beans, peppers and some seasoning, and simmer for another 5 mins until the potatoes are almost tender.

		7. Cool and chill for up to 2 days. To serve, gently heat through on the hob. Roughly chop most of the coriander leaves and stir in, then serve scattered with the remaining leaves.
2. CHICKEN AND WHITE BEAN STEW Cuisine: European	2 tbsp sunflower oil, 400g boneless chicken (Cut in chuncks), 1 Onion (Chopped), 3 Carrots (Chopped), Celery sticks (Chopped), 2 Thyme springs, 1 bay leaf 600 ml vegetable/chicken stock, 2 x 400g haricot beans drained Chopped parsley	1. Heat the oil in a large pan, add the chicken and then fry until lightly browned. 2. Add the vegetables and then fry for a few minutes more. 3. Stir in the herbs and stock. Bring to the boil. 4. Stir well, reduce the heat, then cover and cook for 40 mins, until the chicken is tender. Stir the beans into the pan and then simmer for 5 mins. Stir in the parsley and serve with crusty bread.
3. SAUSAGE AND BEAN CASSEROLE Cuisine: Continental Europe	2 tbsp olive oil 1 onion (chopped) 2 medium sticks celery (Chopped) 1 yellow pepper, chopped 1 red pepper, chopped 6 cooking sausages (about 400g) 6 pork sausages (about 400g) 3 fat garlic cloves, chopped 1½ tsp sweet smoked paprika ½ tsp ground cumin 1 tbsp dried thyme 125ml white wine 2 x 400g cans cherry tomatoes or choppedtomatoes 2 sprigs fresh thyme 1 chicken stock cube 1 x 400g can red mung beans, drained and rinsed 1 bunch chives, snipped (optional)	1. Heat 2 tbsp olive or rapeseed oil in a large heavy-based pan. 2. Add 1 finely chopped onion and cook gently for 5 minutes. 3. Add 2 finely chopped medium celery sticks, 1 chopped yellow pepper and 1 chopped red pepper and cook for a further 5 minutes. 4. Add 6 chorizo sausages and 6 pork sausages and fry for 5 minutes. 5. Stir in 3 chopped garlic cloves, 1 ½ tsp sweet smoked paprika, ½ tsp ground cumin and 1 tbsp dried thyme and continue cooking for 1-2 mins or until the aromas are released. 6. Pour in 125ml white wine and use a wooden spoon to remove any residue stuck to the pan. 7. Add two 400g cans of tomatoes, and 2 sprigs of fresh thyme and bring to a simmer. Crumble in the chicken stock cube and stir. 8. Cook for 40 minutes. Stir in a 400g drained and rinsed can of mung beans and cook for a further five minutes. Remove the thyme sprigs, season with black pepper and stir through some snipped chives, if using. Serve.
4. INDIAN BUTTERNUT SQUASH CURRY Cuisine: Indian	200g brown basmati rice, 1 tbsp Olive Oil, 1 butternut squash, 1 red onion (Diced), 300ml vegetable stock, 4 large tomatoes, 400g chickpeas (Soaked), 3 tbsp fat free Greek yoghurt, Handful coriander	1. Cook the rice in boiling salted water, as per pack instructions. 2. Meanwhile, heat the oil in a large frying pan and cook the butter nuts quash for 2-3 minutes until lightly browned. 3. Add the onion and the curry paste and fry for 3-4 minutes more. 4. Pour over the stock, then cover and simmer for 15-20 minutes, or until the squash is tender. 5. Add the tomatoes and chickpeas, then gently cook for 3-4 minutes, until the tomatoes slightly soften.

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Indian Pulses Industry on Brink of Massive Expansion

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Agriculture is the backbone of Indian economy contributing 15.87 percent of its total GDP and employing around 55 percent of the total working population in India. Around 65 percent of India's total population is dependent upon agriculture and allied sectors. Pulses play a greater role in sustaining the economy of the rainfed farming community in a variety of ways. Besides improving soil fertility and physical structure, pulses fit well in mixed/intercropping systems, crop rotation and dry farming, provide green vegetable (pods/beans) and nutritious fodder for cattle as well thereby contributing to a more sustainable food system. The pulses are grown across the World. In the world, pulses are grown by around 176 countries. The total world acreage under pulses is about 980.81 Lakh Ha with production of 1009.95 Lakh MT. India is the largest producer, 23 percent of world's production, and consumer 27 percent of total pulses of the countries emerging as the main exporters while developing countries were the main importers. The exceptions were South-eastern Asia (Myanmar) and Eastern Africa, which also emerged as important exporters. In India, pulses can be produced with a minimum use of resources and hence, it becomes less costly even than animal protein. In comparison to other vegetables, pulses are rich in protein which are less expensive and can be cultivated as an inter-crop and also as mixed crop. Pulses are mostly cultivated under rainfed conditions and do not require intensive irrigation facility and this is the reason why pulses are grown in areas left after satisfying the demand for cereals/cash crops. Even in such conditions, pulses give better returns. Apart from this, pulses possess several other qualities such as they are rich in protein, improve soil fertility and physical structure, fit in mixed/inter-cropping system, crop rotations and dry farming and provide green pods for vegetable and nutritious fodder for cattle as well. As far as India is concerned, it is the world's largest pulses industry and is the largest producing and consuming base. Since majority of the consumers in India have low incomes, their reliance on pulses as a key source of protein is low as its cost of production is on the higher side. Slow growth in production of pulses in India compared to population growth has resulted in increasing demand-supply gap and in turn rising prices and declining per capita consumption in spite of growing pulse imports. Pulse production remains unattractive

Global Area & Production of Pulses

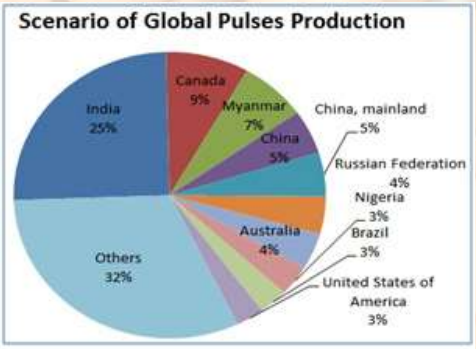
Area (Lakh Ha)								
Country	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
India	264.00	244.60	232.50	252.10	231.00	249.10	294.40	310.83
Niger	57.08	47.76	48.34	52.75	54.70	50.62	53.37	53.15
Canada	29.33	21.00	26.80	25.77	29.90	32.51	40.43	44.38
Myanmar	39.08	38.91	39.64	42.28	42.26	43.03	43.62	44.19
Nigeria	29.90	31.51	36.11	37.33	38.49	37.76	37.28	39.25
China	27.63	27.68	25.45	24.39	23.85	23.98	26.13	29.14
China, mainland	27.59	27.63	25.38	24.33	23.79	23.92	26.07	29.08
Brazil	34.54	37.12	27.32	28.38	32.09	28.85	26.02	28.20
Australia	17.71	22.48	18.50	17.40	15.26	15.22	20.18	23.44
United Republic of Tanzania	19.95	16.29	22.75	21.34	20.40	20.57	20.73	21.31
Others	270.11	308.21	316.74	298.93	338.48	315.67	309.51	357.84
Grand Total	**816.93**	**823.18**	**819.54**	**825.00**	**850.23**	**841.22**	**897.73**	**980.81**
Production (Lakh MT)								
India	182.40	170.90	183.40	192.60	171.50	163.20	231.30	254.20
Canada	54.05	43.24	53.15	65.98	61.93	60.68	81.30	87.15
Myanmar	50.91	50.25	52.93	57.28	59.93	62.96	65.77	70.53
China	38.91	46.10	43.05	40.14	41.13	41.77	45.27	50.17
China, mainland	38.82	45.99	42.94	40.02	41.01	41.64	45.15	50.05
Russian Federation	14.22	25.12	22.46	21.06	22.77	24.67	29.43	42.65
Australia	21.44	25.52	26.34	22.24	22.47	19.89	24.15	41.24
Nigeria	34.24	17.00	52.06	46.95	22.05	23.71	31.15	34.76
Brazil	31.72	34.56	28.04	29.04	33.06	30.96	26.23	30.46
United States of America	25.95	14.87	23.64	22.41	23.95	25.75	34.15	29.41
Others	260.17	270.58	259.97	286.00	321.08	322.12	265.96	319.33
Grand Total	**752.82**	**744.12**	**787.97**	**823.71**	**820.88**	**817.33**	**879.85**	**1009.95**

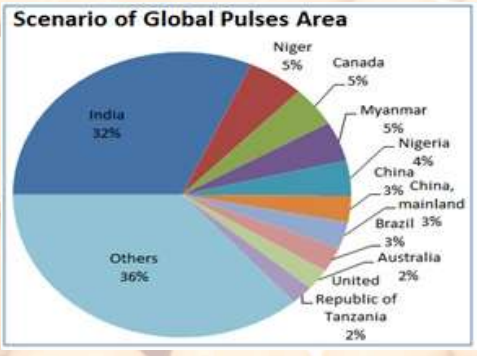
Source: FAOSTAT

to Indian farmers because of the relatively low productivity of pulses coupled with preference and policy support to cereals particularly to wheat and rice.

Status of World Pulses

The world pulses area and production during 2017 was 980.81 Lakh Ha and 1009.95 Lakh MT respectively. India is the highest pulses producing country in world contributing to 25 percent share in total pulses production, followed by Canada (9 percent), Myanmar (7 percent), China (5 percent), China mainland (5 percent) and Russian Federation (4 percent). Around the world pulses are grown on approximately 6 percent of the arable areas and are grown mostly on less fertile and marginal lands.





The top 10 pulses producing countries contribute to about 65 percent of the area and production of global pulses. At the country level, their share in arable land is as high as 32 percent in India, 5 percent in Niger, 5 percent in Canada, 5 percent in Myanmar (South-eastern Asia), and 4 percent in Nigeria. India has the largest area under cultivation and is the largest producing nation, closely followed by Myanmar and Canada. It can be observed that developing countries have more area contributed to pulses than developed countries; but owing to the higher productivity of farms in developed countries the produce from developed countries contributes to more than one fifth of global production. The top five importing nations accounts for 52.93 percent of the total global imports of which 31.80 percent is done only by India. The other countries worth mentioning are China (7.77 percent), Pakistan (6.45 percent), UAE (3.70 percent) and Turkey (3.22 percent). Canada accounting major export of the total global export with share 31.30 percent followed by Australia 17.97 percent, USA 5.54 percent, Myanmar 5.43 percent and Argentina 3.01 percent.

Status of Indian Pulses

Pulses are a key source of protein in most Indian diets and India is the biggest consumer of pulses in the world. As stagnation of production in spite of increase in demand, there has been an increasing demand-supply gap for pulses in India. India produces a quarter of the world's total production of pulses and consumes almost one-third, importing 2–6 million MT annually (most of it from Canada, Myanmar, Australia and African countries) to meet the domestic demand. India is the largest producer (around 25 percent of global production), it however, consumes 27 percent and imports around 14 percent of its pulses requirements.

In India, the share of pulses to gross cropped area and in total food grains is about 12 percent and 6-7 percent respectively. In India, pulses have always received due attentions both in terms of requirement by consumers and adequate programmatic support from the government at the production front. India's pulses output has grown nearly 50 percent from the level of 163.20 Lakh MT in 2016-17 to 259.50 Lakh MT in 2018-19. During this period, however, India's imports declined from the level of over 66.09 Lakh MT to a mere 25.28 Lakh MT. From 1950-51 to 2018-19, the total acreage under pulses has almost been stagnated but for 2017-18 (310.83 Lakh Ha). India's pulses share to net food grain availability has been oscillating between 6 to 9 percent from past two decades and declining almost half to 8.92 percent in 2017-18 from 16.55 percent in 1950. Compared to normal production, the estimated production during 2017-18 is 30 percent higher in case of total pulses, 32 percent gram, 27 percent Arhar, 58 percent Uradbean, 18 percent Mungbean and 40 percent higher lentil production. More than 90 percent of total pulse production has been the contribution of 10 states namely, Madhya Pradesh, Maharashtra, Rajasthan,

Major Pulses Importing & Exporting Countries (Lakh MT)

Country	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Import										
India	26.23	37.57	27.78	34.96	40.13	31.78	45.85	57.98	66.09	56.07
China P Rp	3.50	4.21	6.84	7.90	7.42	11.06	8.63	10.01	10.70	13.69
Pakistan Ir	3.06	4.45	6.03	6.13	5.92	4.34	5.92	7.98	8.91	11.37
U Arab Emts	3.16	0.00	0.00	0.00	3.23	4.35	4.39	4.93	4.80	6.52
Turkey	2.73	2.13	2.72	4.01	2.71	3.35	4.48	4.77	4.65	5.68
Others	52.06	54.30	66.49	59.47	58.70	99.65	56.30	55.98	60.43	82.99
Total	**90.75**	**102.66**	**109.86**	**112.48**	**118.11**	**154.53**	**125.57**	**141.65**	**155.57**	**176.32**
Export										
Canada	30.30	35.66	37.95	38.42	32.95	50.58	50.27	58.21	51.50	55.18
Australia	5.47	6.61	8.79	10.44	15.14	19.02	8.73	13.86	14.73	31.68
U S A	7.25	7.83	10.24	7.09	7.38	9.09	10.60	9.53	11.99	9.57
Myanmar	11.84	13.36	9.33	9.50	12.02	12.21	13.18	10.86	9.34	9.76
Argentina	2.75	2.58	4.23	4.04	5.25	2.40	2.67	4.22	8.65	5.31
Others	33.13	36.64	39.32	42.99	45.36	61.24	40.11	44.96	59.37	64.82
Total	**90.75**	**102.66**	**109.86**	**112.48**	**118.11**	**154.53**	**125.57**	**141.65**	**155.57**	**176.32**

Source: APEDA

Uttar Pradesh, Karnataka, Andhra Pradesh, Gujarat, Jharkhand, Tamil Nadu and Telangana. India is the major consumer of pulses has to narrow the glut in supply by imports. The supply pressure makes it difficult for the country to dominate the market and control prices. On an average India imports 50.25 Lakh MT of pulses for the last 5 years. In 2018-19, the total import of pulses in India is estimated at around 25.28 Lakh MT. Pulses imports to India, the world's biggest buyer, may fall to their lowest in nearly two decades after the government raised import taxes and restricted overseas purchases to bolster prices, impacting the plans of its global suppliers. Farmers in Canada, Australia and Russia that rely on Indian demand will likely intensify their cutbacks in pulses cultivation and continue to seek other markets in response to the curbs.The major export destination for Indian pulses Pakistan has 11.85 percent share followed by Algeria (11.00 percent), United Arab Emirates (9.49 percent), USA (8.98 percent) and Sri Lanka (8.80 Percent). The export average for last five years has been 2.16 Lakh MT and had reached during 2018-19 at 2.86 Lakh MT.

Contribution of pulses to food grains (Area: Lakh Ha, Production : Lakh MT)

Years	Pulses		Food grains		Pulses % to Foodgrains	
	Area	Production	Area	Production	Area	Production
1950-51	190.90	84.10	973.20	508.20	19.62	16.55
1960-61	235.60	127.00	1155.80	820.20	20.38	15.48
1970-71	225.40	118.20	1243.20	1084.20	18.13	10.90
1980-81	224.60	106.30	1266.70	1295.90	17.73	8.20
1990-91	246.60	142.60	1278.40	1763.90	19.29	8.08
1995-96	222.80	123.10	1210.10	1804.20	18.41	6.82
2000-01	203.50	110.80	1210.50	1968.10	16.81	5.63
2001-02	220.10	133.70	1227.80	2128.50	17.93	6.28
2002-03	205.00	111.30	1138.60	1747.70	18.00	6.37
2003-04	234.60	149.10	1234.50	2131.90	19.00	6.99
2004-05	227.60	131.30	1200.00	1983.60	18.97	6.62
2005-06	233.90	133.90	1216.00	2086.00	18.41	6.42
2006-07	237.60	141.10	1240.70	2117.80	19.15	6.66
2007-08	247.69	147.87	1240.70	2307.80	19.96	6.41
2008-09	227.94	137.72	1228.50	2344.70	18.55	5.87
2009-10	209.84	146.60	1213.40	2181.10	17.29	6.72
2010-11	264.00	182.40	1266.70	2444.90	20.84	7.46
2011-12	244.60	170.90	1247.60	2593.20	19.61	6.59
2012-13	232.50	183.40	1207.70	2571.20	19.25	7.13
2013-14	252.10	192.60	1250.40	2650.40	20.16	7.27
2014-15	231.00	171.50	1220.70	2526.70	18.92	6.79
2015-16	249.10	163.20	1232.20	2515.70	20.22	6.49
2016-17	294.40	231.30	1292.30	2751.10	22.78	8.41
2017-18	310.83	254.20	1275.24	2850.10	24.37	8.92
2018-19*	294.06	259.50	1431.80	2902.50	20.54	8.94

Source: Agriculture Ministry & DACNET

Indian Pulses Import & Export (Lakh MT)

Country	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Import									
Canada	12.80	14.68	11.07	15.05	21.96	25.11	24.02	17.02	5.20
Australia	2.14	2.99	7.21	3.42	3.33	9.12	11.74	12.56	0.47
Russia	0.32	2.73	3.25	2.16	2.37	5.03	3.92	6.50	1.56
Myanmar	5.39	8.60	9.64	6.67	9.31	7.22	6.53	5.66	7.01
Ukraine	0.24	0.71	0.49	0.20	0.62	0.89	1.57	4.26	1.79
Others	6.89	5.25	8.48	4.28	8.26	10.60	18.30	10.08	9.25
Total	27.78	34.96	40.13	31.78	45.85	57.98	66.09	56.07	25.28
Export									
Pakistan Ir	0.74	0.43	0.59	1.00	0.63	0.78	0.21	0.21	0.10
Algeria	0.26	0.32	0.37	0.58	0.27	0.33	0.10	0.20	0.44
U Arab Emts	0.16	0.13	0.11	0.15	0.11	0.13	0.15	0.17	0.28
U S A	0.01	0.02	0.03	0.05	0.08	0.09	0.12	0.16	0.18
Sri Lanka Dsr	0.17	0.17	0.13	0.20	0.31	0.33	0.18	0.16	0.25
Others	0.76	0.67	0.80	1.48	0.82	0.90	0.62	0.89	1.61
Total	**2.09**	**1.74**	**2.03**	**3.46**	**2.22**	**2.56**	**1.37**	**1.79**	**2.86**

Source: APEDA

Current Developments

• The latest crop data from agriculture department shows a decline of 9.5 percent in the total crop area from the year ago figure. So far, farmers have sown across 146.60 Lakh Ha, around 13.8 percent of the total area that goes under cultivation in the Kharif season. Last year, more than 162.00 Lakh Ha were sown during this period

• In 2018-19 the government had allowed import of 8.00 Lakh MT of pulses, the industry estimates that about 20.00 Lakh MT of pulses were imported in the country as traders got a court stay on the order of the Director General of Foreign Trade allowing only millers to import pulses.

• A year after harvesting a record crop of 254.00 Lakh MT, the country's pulses production is seen falling by nearly 9 percent this year. The government has removed restrictions on imports of pea seeds, a move which may help reduce prices and increased availability of the commodity in the domestic market.

• The latest data shows that the acreage under Kharif pulses stands at 3.38 Lakh Ha, down around 0.50 percent compared to same time the previous year (Ministry of Agriculture, Govt. of India).

Overall since the consumption pattern of pulses is directly proportional to the per capita income of the family and the overall production of pulses is highly correlated to the monsoon rains, there is immense scope of improvement both in terms of consumption pattern and overall production of the pulses in India. Since independence pulses consumption relevant pattern in India has not shown significant change, there is still an enormous scope of improvement provided certain constraints in the production Chain is addressed adequately. The major constraints of pulses developments in India are inadequate knowledge of recommended packages and practices, number of diseases and insect pests which cause heavy losses resulting in poor production, non-availability of seeds of high-yielding varieties in the desired quantities, non-availability of quality water for irrigation, lack of knowledge about latest production technology, lack of adoption of plant protection measures, non-availability of credit, existence of large number of intermediaries in market and problem faced due small quantity of marketable surplus.

Pulses - Global Sowing Intensions

Brian Clancey

Stat Publishing

Land in pulses and specialty crops will decline this year in Canada if farmers stick with their seeding intentions. Statistics Canada found farmers intend to plant 8.82 million acres of pulses and special crops, down from 8.98 million last year and below the recent five year average of 9.52 million acres.

The only crops showing an increase over last year are peas, which could climb from 3.615 to 4.035 million acres. Lentil area could drop from 3.768 to 3.404 million acres, while dry edible beans fall from 367,500 to 324,700 acres; chickpeas from 442,900 to 334,300; and mustard from 503,800 to 416,300 acres.

There can be significant differences between seeding intentions and actual planted area. Market reaction since the numbers were published would have been a factor for some growers. Spring seeding conditions can force changes in crop choices, but this year's conditions were good and seeding advanced unhindered in most parts of western Canada. Fears over outside market factors can also cause shifts between what is actually planted and the intentions.

There can be significant changes between what was intended and what was finally sown. Last year's trade issues with India resulted in a 7% reduction in pea and lentil plantings, while in 2015 the final chickpea area was 15% lower. During the previous five years, land in lentils averaged 6% higher than the intentions, while peas was 1% lower, dry edible beans 25% higher, and chickpeas 34% higher.

Interestingly, the increase in field pea area mirrored the experience in the United States, where farmers intend to boost field pea area from 856,000 to 881,000 acres. Growers in both countries are seeing solid increases in overall demand, though processors in the United States are more focused on domestic than export movement. With the exception of split peas, exports of U.S. peas were down between September and February, while Canadian exports are up.

The expansion of the pulse fractionation industry along with increased in using pulses in pet foods has fundamentally changed domestic demand. While Canadian peas have been strongly competitive in export markets, government buying plus expanded domestic markets and the trade war between China and the U.S. have limited the capacity of U.S. exporters to expand sales.

If Canadian growers stuck with their intention to boost area from 3.615 to over 4.0 million acres, average yields would see production advance from 3.58 to 3.97 million metric tons. Even so, markets are expected to absorb most of what might be grown with the result residual supplies of peas may only inch up from this season's forecast 180,000 metric tons to 189,000 metric tons by the end of the 2019-20 marketing campaign.

Media reports suggest the potential for problems with China, but none have been confirmed. The bigger issue in China is the contraction of the hog herd because of China's hog herd because of African swine fever. By March, the national herd was down 19% and the number of female hogs was down 21%, suggesting the number of hogs will continue to drop. On the other hand, China's hog industry has been rationalizing in favor of larger facilities. Some observers think this will not result in as a big change in demand for commercial feed than might otherwise be the case. This suggests Canada will continue to see solid demand for peas as long as prices are competitive with other ingredients.

It does not mean prices will be higher on average during the first three to six months of the coming marketing year. Grower selling and the need to be price competitive with other feed ingredients will be key drivers in terms of price. The bigger problem is that to the extent farmers think they will get better returns by holding, stocks may not decline fast enough relative to prospective demand to move enough of the crop to allow price recovery during the last half of the marketing year.

Markets continue to look at conditions in India, hoping predictions of a slightly below normal monsoon are realized. This tends to reduce the amount of land in pulses, which could

see demand from the Indian subcontinent improve as the marketing season advances. However, supply fundamentals in India are not negative and without a dramatic change in seeded area in the coming kharif and rabi growing seasons, government policies towards imports may not change.

Heading into the seeding intentions report there were conflicting views about the direction lentil seedings would take. Some felt strong movement and what appeared to be historically good prices would result in an increase.

While movement of red lentils has been good and prices trending upward, prospective gross returns per acre are below last year and their recent three averages. More often than not, this can result in a decline in total area. This appears to be what growers were thinking; with the result land in lentils in Canada could drop from 3.77 to 3.41 million acres.

Area was not broken down by class, but it is likely red lentil area increased at the expense of green. Green lentil fundamentals are not looking negative, but the ease of movement of red lentils combined with relatively good returns likely drove grower interest in the crop. In simple terms, last year's pessimism has been replaced by cautious optimism.

A return to average yields would see production of all classes of lentils slip from 2.092 to 2.047 million metric tons. The red lentil share of production is expected to jump from 56% to 65%, while the large green share drops from 28% to 23% and small green from 12% to 9%.

Total exports may be similar to this season, slipped from almost 1.96 to just under 1.91 million metric tons. This could see residual supplies of all classes of lentils drop from 557,000 to 260,000 metric tons by the end of the coming marketing campaign.

Prices for red lentils should be strongly influenced by the pace of bulk export demand, while greens may face increased competition from exporters in the United States.

Most of the U.S. crop is green lentils. There is a chance available supplies of green lentils in the United States will increase from around 522,000 metric tons this season to 543,000 in the coming marketing year.

Unless disappearance increases, residual stocks of lentils in the U.S. will remain relatively high, perhaps approaching a 40% stocks to use ratio. While an improvement over this season, green lentil markets are not as large as red, with the result competition for available demand could be intense.

World Kabuli Chickpea Supply-Demand Forecasts

(hectares, metric tons)						
	2014	2015	2016	2017	2018	2019
Area (hectares)	2,014,000	1,930,000	2,217,000	2,516,000	2,567,000	2,205,000
Yield (kg/ha)	1,024	1,030	1,007	976	1,104	1,005
Production	2,062,000	1,988,000	2,233,000	2,455,000	2,835,000	2,217,000
Carry-in	417,000	322,000	153,000	74,000	177,000	655,000
Supply	2,479,000	2,310,000	2,386,000	2,529,000	3,012,000	2,872,000
Trade	773,000	822,000	848,000	763,000	943,000	881,000
Inferred Use	2,157,000	2,157,000	2,312,000	2,352,000	2,357,000	2,245,000
Ending Stock	322,000	153,000	74,000	177,000	655,000	627,000
Stock-Use Ratio	14.9%	7.1%	3.2%	7.5%	27.8%	27.9%
Per Capita Use (kg)	0.301	0.298	0.316	0.318	0.315	0.297
Estimates by STAT Publishing Panama based data from the FAO, USDA, Statistics Canada, ABARES, and other entities.						

World Desi Chickpea Supply-Demand Forecasts						
(hectares, metric tons)						
	2014	2015	2016	2017	2018	2019
Area (hectares)	11,760,306	10,244,986	11,229,106	12,350,555	12,282,153	11,572,544
Yield (kg/ha)	947	909	893	927	1,027	944
Production	11,134,500	9,310,780	10,025,200	11,450,700	12,612,000	10,796,800
Carry-in	169,000	216,000	153,000	-	387,000	267,000
Supply	11,303,500	9,526,780	10,178,200	11,450,700	12,999,000	11,063,800
Trade	949,000	1,623,000	1,620,000	2,390,000	807,000	1,122,000
Inferred Use	11,087,500	9,373,780	10,262,200	10,989,700	12,732,000	10,865,800
Ending Stock	216,000	153,000	(84,000)	387,000	267,000	198,000
Stock-Use Ratio	1.9%	1.6%	-0.8%	3.5%	2.1%	1.8%
Per Capita Use (kg)	1.566	1.324	1.450	1.553	1.799	1.535
Estimates by STAT Publishing Panama based data from the FAO, USDA, Statistics Canada, ABARES, and other entities.						

World Field Pea Supply-Demand Forecasts						
(hectares, metric tons)						
	2014	2015	2016	2017	2018	2019
Area (hectares)	6,570,000	6,860,000	7,590,000	7,850,000	7,070,000	7,020,000
Yield (kg/ha)	1,648	1,579	1,847	1,808	1,726	1,711
Production	10,829,000	10,835,000	14,020,000	14,194,000	12,202,000	12,013,000
Carry-in	460,000	820,000	220,000	550,000	930,000	420,000
Supply	11,289,000	11,655,000	14,240,000	14,744,000	13,132,000	12,433,000
Trade	5,200,000	5,280,000	6,200,000	6,180,000	7,010,000	5,708,000
Inferred Use	10,469,000	11,435,000	13,690,000	13,814,000	12,712,000	12,053,000
Ending Stock	820,000	220,000	550,000	930,000	420,000	380,000
Stock-Use Ratio	7.8%	1.9%	4.0%	6.7%	3.3%	3.2%
Per Capita Use (kg)	1.479	1.615	1.934	1.911	1.759	1.667
Estimates by STAT Publishing Panama based data from the FAO, USDA, Statistics Canada, ABARES, and other entities.						

World Lentil Supply-Demand Forecasts						
(hectares, metric tons)						
	2014	2015	2016	2017	2018	2019
Area (hectares)	4,064,000	4,741,000	5,934,000	6,376,000	5,413,000	5,344,000
Yield (kg/ha)	1,134	1,119	1,151	990	1,058	1,016
Production	4,607,000	5,305,000	6,829,000	6,310,000	5,729,000	5,430,000
Carry-in	1,037,000	576,000	347,000	552,000	1,161,000	1,086,000
Supply	5,644,000	5,881,000	7,176,000	6,862,000	6,890,000	6,516,000
Trade	2,960,000	2,905,000	4,136,000	2,483,000	2,484,000	2,977,000
Inferred Use	5,068,000	5,534,000	6,624,000	5,701,000	5,804,000	5,992,000
Ending Stock	576,000	347,000	552,000	1,161,000	1,086,000	524,000
Stock-Use Ratio	11.4%	6.3%	8.3%	20.4%	18.7%	8.7%
Per Capita Use (kg)	0.633	0.625	0.794	0.679	0.680	0.720
Estimates by STAT Publishing Panama based data from the FAO, USDA, Statistics Canada, ABARES, and other entities.						

GANESH GRAINS LIMITED

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Recipes

BACON LENTIL BURRITO

INGREDIENTS

2 tablespoons olive oil, 1 onion, minced, few cloves garlic, minced, 1/2 teaspoon ground cinnamon, 1/2 teaspoon ground cumin, 1/2 teaspoon ground coriander, 1/2 teaspoon powdered ginger, 1 19 ounce can chickpeas, drained and rinsed well, 1 cup couscous, 1/2 cup raisins, 1/2 cup dried apricots, sliced, 2 cups orange juice, 1 lemon, zest and juice a sprinkle or two sea salt and freshly ground pepper, 1/2 cup sliced or slivered almonds, a handful chopped cilantro

PREPARATION

Splash the olive oil into a small saucepan over a medium-high heat. Add the onion, garlic and spices. Sauté for a few minutes until everything is heated through and your kitchen smells fragrant.

Add the chickpeas, couscous, raisins, apricots, orange juice, lemon zest and juice, and salt and pepper. Bring everything to a simmer and then reduce the heat to low, just enough to maintain the simmer. Cover with a tight-fitting lid and continue cooking until the couscous is tender and the liquid has been absorbed, about 15 minutes.

Turn off the heat and let the couscous rest for another 5 minutes or so before serving. Using a fork to help fluff up the couscous, transfer it into a serving bowl and sprinkle with the almonds and cilantro.

VARIATION

In Morocco couscous is normally seasoned with a pinch of ras el hanout, a unique spice blend whose name means literally “top of the shop” the spice merchant's best. If you like, you can make your own ras el hanout by roughly combining equal parts of cardamom, cinnamon, cloves, coriander, cumin, ginger, allspice, nutmeg, mace, turmeric and black pepper. Use 2 teaspoons in total for this recipe.

SOUTHWESTERN BEAN SALAD

INGREDIENT

½ cup olive oil
1/4 cup red wine vinegar
1 tablespoon Dijon mustard
1/2 teaspoon your favourite hot sauce
1 14 ounce can mixed beans, drained and rinsed well
1 cup cooked corn or raw corn sliced off the cob
1 red bell pepper, diced small
1 basket cherry tomatoes, halved
1 Red Onion, thinly sliced
a handful green beans, steamed and cut into bite-sized pieces
a handful yellow wax beans, steamed and cut into bite-sized pieces
a bunch fresh cilantro, minced
a sprinkle or two sea salt and freshly ground pepper

PREPARATION

In a festive salad bowl, whisk together the oil, vinegar, mustard and hot sauce. Add all the other ingredients and toss to combine. Season to taste. Serve immediately or rest for a few hours.

VARIATION

This salad is excellent with a grilled chicken breast or two sliced into it. You may also take the time to grill the bell pepper, corn and red onion. For lots of spicy Southwestern flavour, try adding a minced fresh jalapeno or chipotle pepper packed in adobo sauce.

Recipes

CURRY ROAST SWEET POTATO AND CHICKPEAS

INGREDIENTS

2 to 3 large sweet potatoes, unpeeled, rinsed, cut into bite-sized chunks
2 large onions, chopped
a 19-ounce (540 mL) can of chickpeas, rinsed and drained
2 tablespoons (30 mL) of olive oil or melted butter
2 tablespoons (30 mL) of curry powder
1 tablespoon (15 mL) of fennel, cumin or coriander seeds
1 teaspoon (5 mL) of ground cinnamon
1/2 teaspoon (2 mL) of salt
Lots of freshly ground pepper
1 bunch of fresh cilantro, chopped, reserve a few sprigs for garnish

PREPARATION

Preheat your oven to 375ºF (190ºC). Turn on your convection fan if you have one. Ready a large roasting pan, baking pan or sauté pan.

Toss the vegetables, chickpeas, oil, spices, salt and pepper together mixing the works thoroughly until all the flavours are evenly distributed. Reserve the cilantro. Fill the pan evenly with the mixture.

Roast, stirring occasionally, until the vegetables are tender, lightly caramelized and delicious, about 1 hour. Top with the cilantro. Serve and share directly from the pan.

KITCHEN TIPS

You don't have to peel sweet potatoes. Just rinse them well and dice away. It's not that the skin is somehow a massive source of nutrients; it's just that it's easier not to peel them!

Canned pulses, like chickpeas, are also a very valid ingredient. Rinse them well before use too. You'll wash away lots of sodium but retain all the fiber, protein and micronutrients that make them so healthy in the first place.

VEGETARIAN CHILI

INGREDIENTS

FOR THE FLAVOUR BASE:

a splash of olive oil, 1 onion, chopped, 1 head of garlic cloves, chopped, 2 carrots, chopped, 2 tablespoons (30 mL) of chili powder, 2 tablespoons (30 mL) of ground cumin 2 tablespoons (30 mL) of dried oregano

FOR THE CHILI:

a 28-ounce (850 mL) can of whole tomatoes, a 5.5-ounce (160 mL) can of tomato paste, 3 cups (750 mL) of water 1 cup (250 mL) of barley, a 19-ounce (540 mL) can of kidney, red or black beans, drained and rinsed, 1 chipotle pepper in adobo sauce, minced, 1 teaspoon (5 mL) of salt, 2 cups (500 mL) of frozen corn, 2 cups (500 mL) of frozen edamame fresh cilantro sprigs

PREPARATION

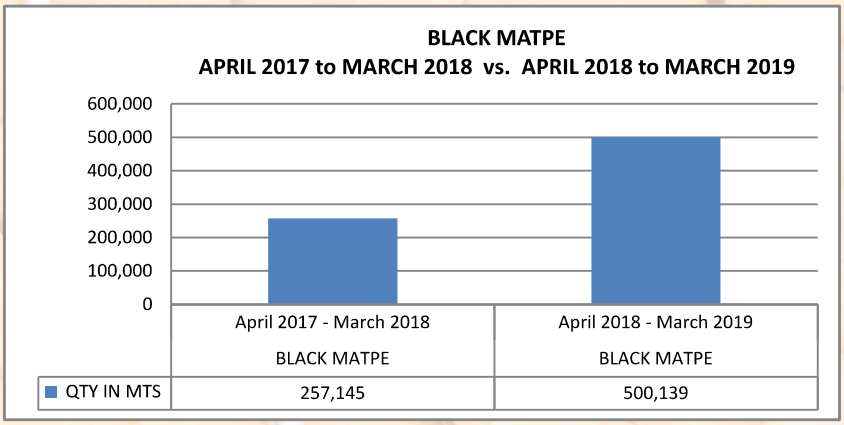
Splash the oil into your favourite heavy soup pot preheating over medium-high heat. Toss in the onions, garlic and carrots and sauté, stirring frequently, until the aromatic vegetables heat through, brighten and lightly colour, 5 minutes or so. Stir in the chilli powder, cumin, and oregano. Continue cooking and stirring as the spices heat through, lose their staleness and become fragrant, just a minute or two.

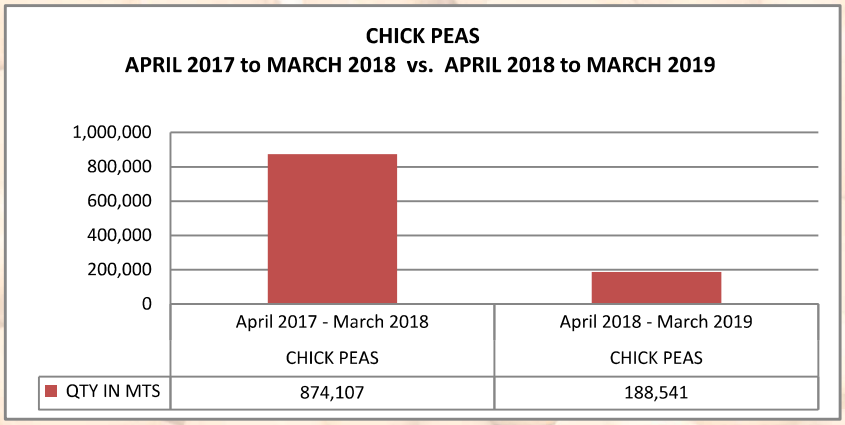
Stir in the tomatoes, tomato paste, water and barley, taking a moment to break up the tomatoes with a wooden spoon. Add the beans, chipotle pepper and salt. Bring the works to a boil, then adjust the heat to a bare simmer. Cover then cook until the barley tenderizes, the chilli thickens and all the flavours blend, 25 minutes or so. Stir in the corn and edamame and continue cooking just long enough to heat them through.

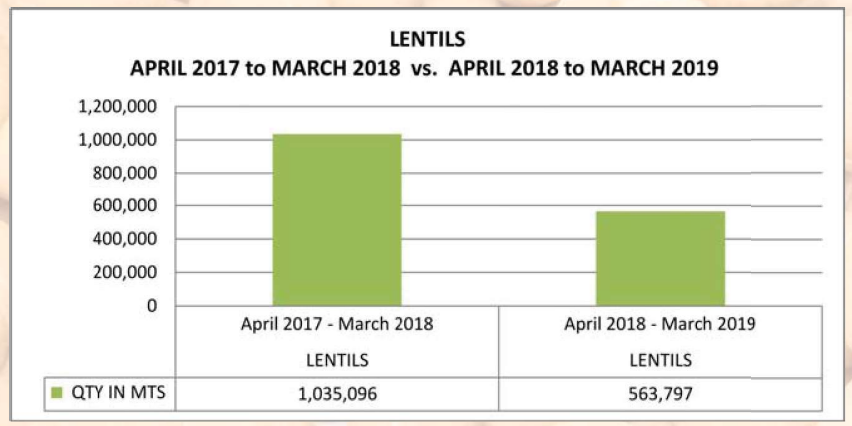
Ladle into serving bowls top each serving with fresh cilantro sprigs.

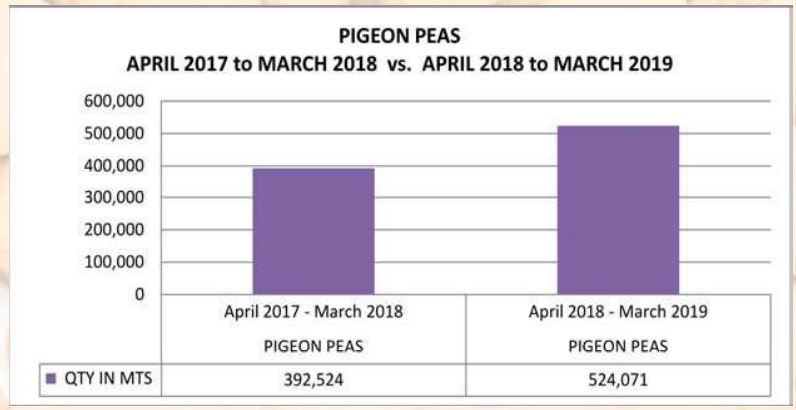
Pulses Import Statistics

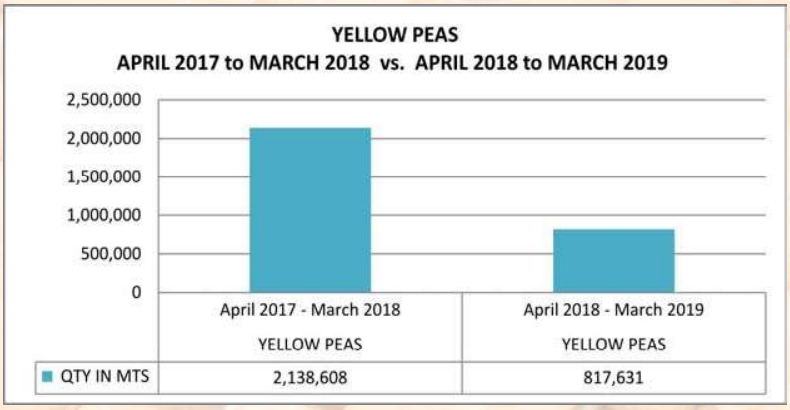
Nikita Chury
IPGA

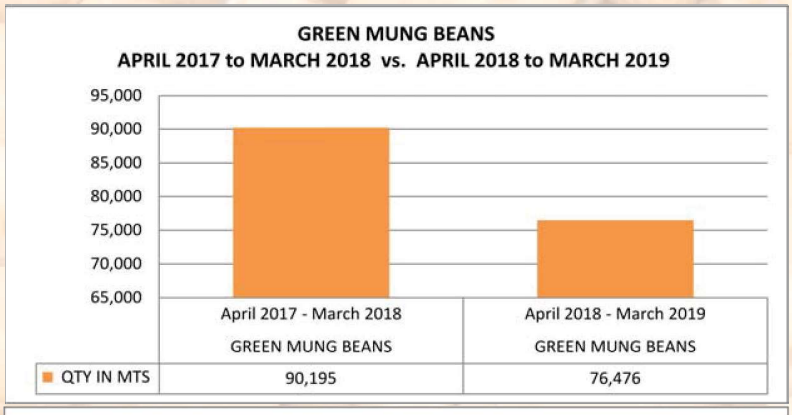


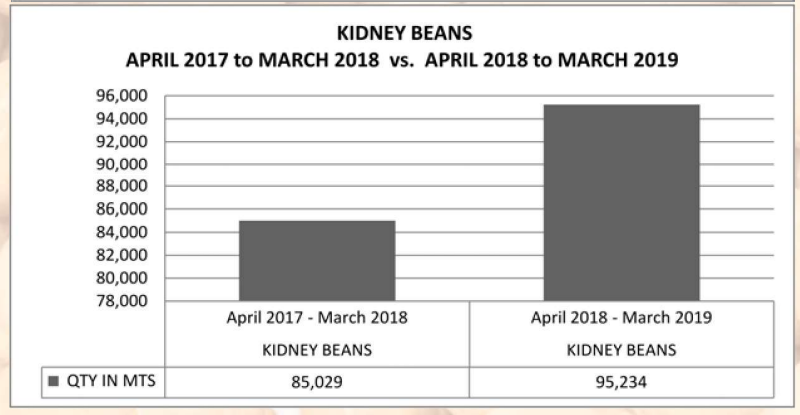





PIGEON PEAS
APRIL 2017 to MARCH 2018 vs. APRIL 2018 to MARCH 2019
600,000
500,000
400,000
300,000
200,000
100,000
0
April 2017 - March 2018
PIGEON PEAS
April 2018 - March 2019
PIGEON PEAS
QTY IN MTS
392,524
524,071


YELLOW PEAS
APRIL 2017 to MARCH 2018 vs. APRIL 2018 to MARCH 2019
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
April 2017 - March 2018
YELLOW PEAS
April 2018 - March 2019
YELLOW PEAS
QTY IN MTS
2,138,608
817,631


GREEN MUNG BEANS
APRIL 2017 to MARCH 2018 vs. APRIL 2018 to MARCH 2019
95,000
90,000
85,000
80,000
75,000
70,000
65,000
April 2017 - March 2018
GREEN MUNG BEANS
April 2018 - March 2019
GREEN MUNG BEANS
QTY IN MTS
90,195
76,476


KIDNEY BEANS
APRIL 2017 to MARCH 2018 vs. APRIL 2018 to MARCH 2019
96,000
94,000
92,000
90,000
88,000
86,000
84,000
82,000
80,000
78,000
April 2017 - March 2018
KIDNEY BEANS
April 2018 - March 2019
KIDNEY BEANS
QTY IN MTS
85,029
95,234

Agricultural Statistics Division
Directorate of Economics & Statistics
Department of Agriculture, Cooperation and Farmers Welfare
Third Advance Estimates of Production of Foodgrains for 2018-19

as on 03.06.2019

Million Tonnes

Crop	Season	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18		2018-19	
														3rd Adv.Est.	Final Estimate	Target	3rd Adv.Est.
1	2	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Rice	Kharif	78.27	80.17	82.66	84.91	75.92	80.65	92.78	92.36	91.50	91.39	91.41	96.30	96.39	97.14	99.00	101.75
	Rabi	13.52	13.18	14.03	14.27	13.18	15.33	12.52	12.87	15.15	14.09	13.00	13.40	15.12	15.62	15.00	13.88
	Total	91.79	93.36	96.69	99.18	89.09	95.98	105.30	105.23	106.65	105.48	104.41	109.70	111.52	112.76	114.00	115.63
Wheat	Rabi	69.35	75.81	78.57	80.68	80.80	86.87	94.88	93.51	95.85	86.53	92.29	98.51	98.61	99.87	102.20	101.20
Jowar	Kharif	4.07	3.71	4.11	3.05	2.76	3.44	3.29	2.84	2.39	2.30	1.82	1.96	2.04	2.27	2.10	1.78
	Rabi	3.56	3.44	3.81	4.19	3.93	3.56	2.69	2.44	3.15	3.15	2.42	2.60	2.69	2.53	2.80	1.92
	Total	7.63	7.15	7.93	7.25	6.70	7.00	5.98	5.28	5.54	5.45	4.24	4.57	4.73	4.80	4.90	3.70
Bajra	Kharif	7.68	8.42	9.97	8.89	6.51	10.37	10.28	8.74	9.25	9.18	8.07	9.73	9.08	9.21	9.50	8.51
Ragi	Kharif	2.35	1.44	2.15	2.04	1.89	2.19	1.93	1.57	1.98	2.06	1.82	1.39	1.96	1.99	2.30	1.21
Small Millets	Kharif	0.47	0.48	0.55	0.44	0.38	0.44	0.45	0.44	0.43	0.39	0.39	0.44	0.44	0.44	0.60	0.35
Nutri Cereals	Kharif	14.58	14.05	16.79	14.42	11.54	16.44	15.95	13.59	14.06	13.93	12.10	13.52	13.52	13.91	14.50	11.85
	Rabi	3.56	3.44	3.81	4.19	3.93	3.56	2.69	2.44	3.15	3.15	2.42	2.60	2.69	2.53	2.80	1.92
	Total	18.14	17.50	20.60	18.62	15.47	20.01	18.64	16.03	17.20	17.08	14.52	16.12	16.21	16.44	17.30	13.77
Maize	Kharif	12.16	11.56	15.11	14.12	12.29	16.64	16.49	16.20	17.15	17.01	16.05	18.92	19.81	20.12	21.20	20.63
	Rabi	2.55	3.54	3.85	5.61	4.43	5.09	5.27	6.05	7.11	7.16	6.51	6.98	7.07	8.63	7.50	7.19
	Total	14.71	15.10	18.96	19.73	16.72	21.73	21.76	22.26	24.26	24.17	22.57	25.90	26.88	28.75	28.70	27.82
Barley	Rabi	1.22	1.33	1.20	1.69	1.35	1.66	1.62	1.75	1.83	1.61	1.44	1.75	1.79	1.78	2.10	1.73
Nutri/Coarse Cereals	Kharif	26.74	25.61	31.89	28.54	23.83	33.08	32.44	29.79	31.20	30.94	28.15	32.44	33.33	34.03	35.70	32.48
	Rabi	7.33	8.31	8.86	11.49	9.72	10.32	9.58	10.24	12.09	11.92	10.37	11.33	11.54	12.94	12.40	10.85
	Total	34.07	33.92	40.75	40.04	33.55	43.40	42.01	40.04	43.30	42.86	38.52	43.77	44.87	46.97	48.10	43.33
Cereals	Kharif	105.01	105.78	114.55	113.45	99.75	113.73	125.22	122.15	122.70	122.34	119.56	128.74	129.73	131.16	134.70	134.23
	Rabi	90.21	97.30	101.46	106.45	103.70	112.52	116.98	116.63	123.09	112.53	115.66	123.24	125.28	128.44	129.60	125.92
	Total	195.22	203.08	216.01	219.90	203.45	226.25	242.20	238.78	245.79	234.87	235.22	251.98	255.00	259.60	264.30	260.15
Tur	Kharif	2.74	2.31	3.08	2.27	2.46	2.86	2.65	3.02	3.17	2.81	2.56	4.87	4.18	4.29	4.50	3.50
Gram	Rabi	5.60	6.33	5.75	7.06	7.48	8.22	7.70	8.83	9.53	7.33	7.06	9.38	11.16	11.38	11.50	10.09
Urad	Kharif	0.90	0.94	1.12	0.84	0.81	1.40	1.23	1.50	1.15	1.28	1.25	2.18	2.64	2.75	2.80	2.55
	Rabi	0.35	0.50	0.34	0.33	0.42	0.36	0.53	0.47	0.55	0.68	0.70	0.66	0.65	0.74	0.80	0.67
	Total	1.25	1.44	1.46	1.17	1.24	1.76	1.77	1.97	1.70	1.96	1.95	2.83	3.28	3.49	3.60	3.21
Moong	Kharif	0.69	0.84	1.25	0.78	0.44	1.53	1.24	0.79	0.96	0.87	1.00	1.64	1.39	1.43	1.55	1.84
	Rabi	0.26	0.28	0.27	0.26	0.25	0.27	0.40	0.40	0.65	0.64	0.59	0.52	0.51	0.59	0.70	0.53
	Total	0.95	1.12	1.52	1.03	0.69	1.80	1.63	1.19	1.61	1.50	1.59	2.17	1.90	2.02	2.25	2.37
Lentil	Rabi	0.95	0.91	0.81	0.95	1.03	0.94	1.06	1.13	1.02	1.04	0.98	1.22	1.51	1.62	*	1.56
Other Kharif Pulses	Kharif	0.54	0.70	0.96	0.80	0.49	1.33	0.93	0.61	0.71	0.78	0.72	0.89	0.80	0.83	1.00	0.63
Other Rabi Pulses	Rabi	1.36	1.37	1.19	1.28	1.28	1.33	1.34	1.59	1.52	1.74	1.47	1.77	1.68	1.78	3.10	1.85
Total Pulses	Kharif	4.86	4.80	6.40	4.69	4.20	7.12	6.06	5.92	6.00	5.73	5.53	9.58	9.01	9.31	9.85	8.52
	Rabi	8.52	9.40	8.36	9.88	10.46	11.12	11.03	12.43	13.26	11.42	10.79	13.55	15.50	16.11	16.10	14.70
	Total	13.38	14.20	14.76	14.57	14.66	18.24	17.09	18.34	19.26	17.15	16.32	23.13	24.51	25.42	25.95	23.22
Total Foodgrains	Kharif	109.87	110.58	120.96	118.14	103.95	120.85	131.27	128.07	128.69	128.07	125.09	138.33	138.73	140.47	144.55	142.75
	Rabi	98.73	106.71	109.82	116.33	114.15	123.64	128.01	129.05	136.35	123.96	126.45	136.78	140.78	144.55	145.70	140.62
	Total	208.60	217.28	230.78	234.47	218.11	244.49	259.29	257.12	265.05	252.02	251.54	275.11	279.51	285.01	290.25	283.37

*included in Other Rabi Pulses

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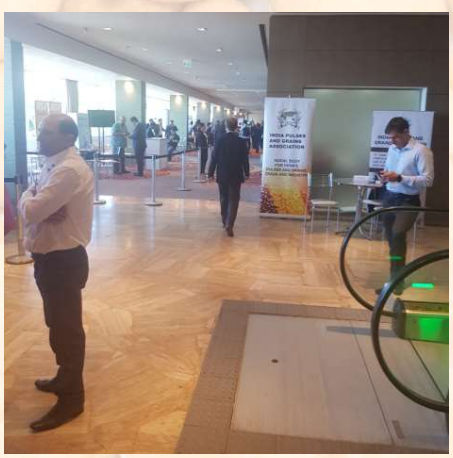

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