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PULSE INDIA

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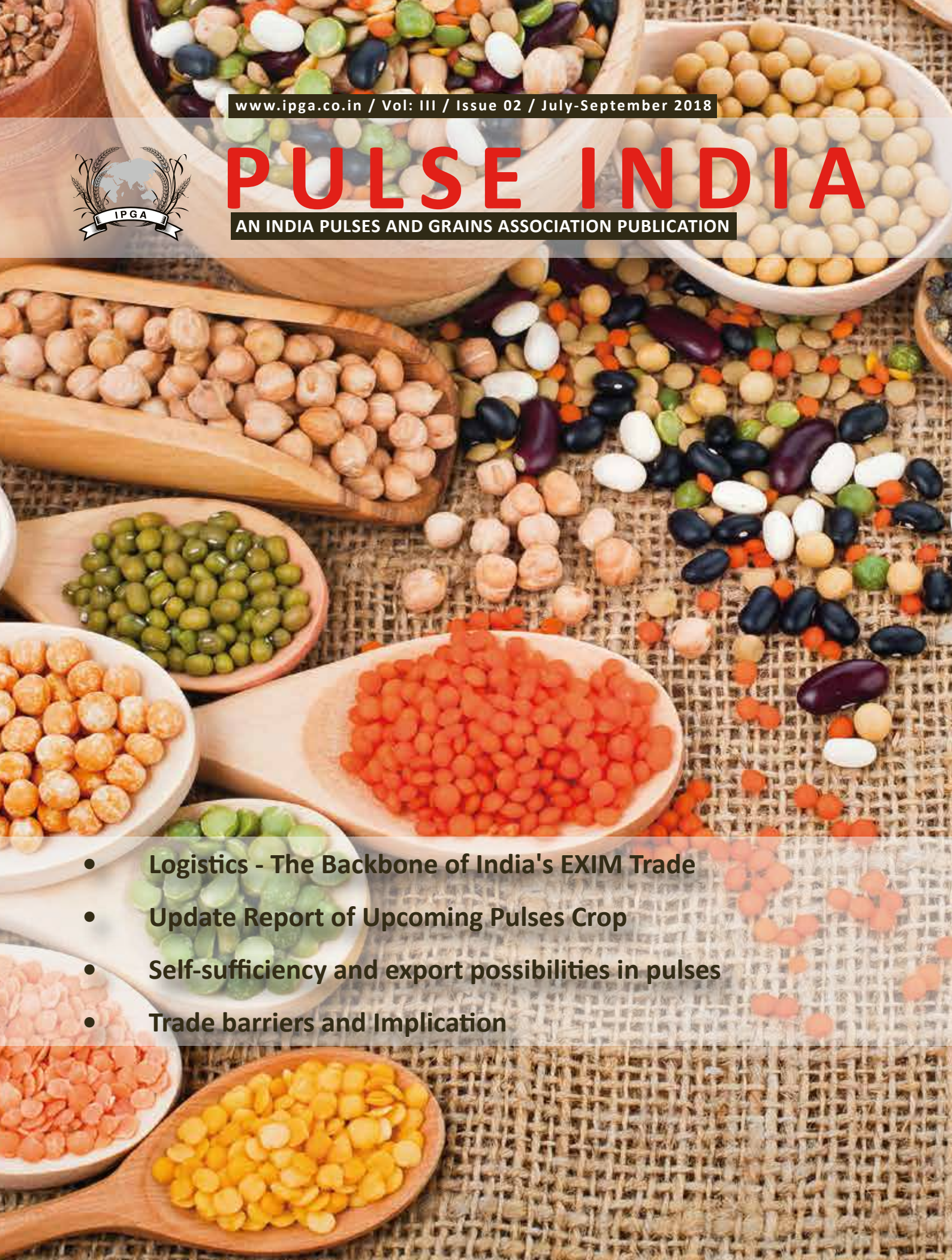


- Logistics - The Backbone of India's EXIM Trade
- Update Report of Upcoming Pulses Crop
- Self-sufficiency and export possibilities in pulses
- Trade barriers and Implication

From the Chairman's Desk

Dear Patrons,

This indeed is a matter of great pride that we have been able to record robust production of various pulses in recent years. We have moved quickly from being a big importer of pulses towards self-Reliance and Exports. Now the vision of the Government of doubling the income of the farmers seems to be achievable.

However recent development in the import policy have not been conducive to the trade as well as large farmers fraternity and all the efforts put in by the Government do not seem to be yielding the desired results as prices of agriculture produces particularly pulses continue to trade below MSP. Primary reason for this is the continued imports. Government in order to curb imports had put in quantitative restrictions on the import of various pulses and imposed import duties. However, the Notifications and Trade Notices issued by the DGFT imposing various restrictions are being challenged in the courts through writ petitions and these notifications have been stayed also by various Honourable High Courts. These stay orders many a time can result in some individuals/business entities taking advantage through these writ petitions which shall be detrimental to principal of providing level playing field for all the business stakeholders. Moreover, many a notification issued by DGFT lacked clarity and they had to issue clarifications when sought by the stakeholders. This has created lot of confusion among the various stakeholders.

Since we are self-sufficient now in pulses and we need to increase the income of the farmers, we should either restrict the imports firmly and/or we should import only at the time of need. Besides this frequent change in the policy/regulations also put the question mark on the credibility of our Exporters/Importers in the international market as they enter into a contract basis a regulation today and may be required to back out next day due to another change in the regulation. Government had been struggling to jack up the prices of pulses to the MSP levels during Rabi Crop this year and at the same time issued the quotas for import of Urad, Toor and Moong. It will be important to mention here that all the origins of pulses in the world are much cheaper than India and continuation of imports of pulses will be detrimental to our own markets.

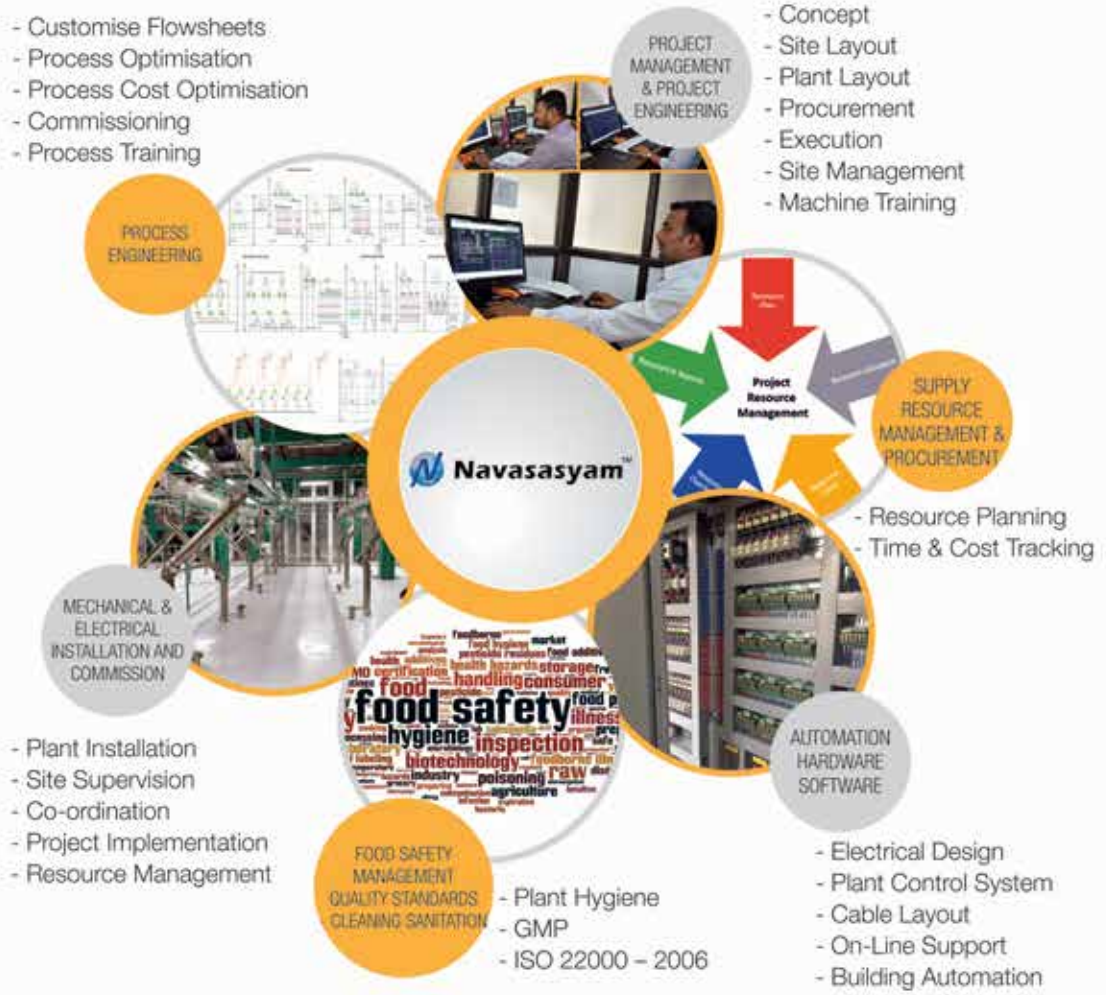
We at IPGA strongly feel that policy makers take a note of the current situation and form a long-term policy for the pulses sector which should be robust and favourable to large stakeholders in the pulses value chain.

Jai Hind

ZAVERCHAND (JITU) BHEDA
CHAIRMAN
India Pulses and Grains Association

Concept to Commissioning

TURNKEY SOLUTIONS



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Varinder Machhral
CEO IPGA

Dear Patrons,

We all know that pulses are an important source of protein for a large vegetarian population in India. Realising the need and importance of pulses in the lives of vast Indian Population, this sector has constantly been observed by the Government and the Government has been intervening at regular intervals ever since the unprecedented upward surge in the prices in the year 2015.Government made efforts and have succeeded in increasing the production of pulses in last two consecutive years and thus fast moving towards self-sufficiency levels in the long run. But this higher production level has thrown up other challenges like storage and upkeeping of huge Pulses cargo as we seriously lack quality storage facilities. More importantly large and steady supply of pulses in the market has resulted in the drop in the prices and almost all the pulses are now trading way below MSP resulting in poor remuneration for the farmers. The current state of affairs highlight that mere upward revision in the MSP alone cannot encourage the farmers to grow pulses instead of other crops. The continued imports also have had a role to play in the poor earnings for the domestic crops as we have had been importing huge quantity of pulses in the recent past. We need to provide the farmers with a robust and remunerative procurement plan also. Another challenge is that we are using a large Acerage to get the required quantity of pulses as our yield of pulses is very low as compared to other pulse producing nations like Canada, Brazil, China, Australia and Myanmar etc. Pest Control and usage of Quality and high yielding seeds also need to be studied for obtaining the desired optimum results.

Given the above scenario, all the stakeholders in the value chain need to participate and revolutionise the pulses sector. The Government need to build a robust policy regime which is beneficial for all the stake holders in the value chain. The efficiency in farming practices need to be increased. They also need to rope in private players in procurement as procuring the entire quantity from the Mandis shall be a huge challenge for the Government. This can be done only if the Government comes out with a formula that hedge the risk of the private players in case the Government decide to sell the Pulses in the open market below the MSP price for the benefit of the Consumers. Imports need to be monitored and should be allowed only in the time of need. Since we are seeing increased production levels, our processors have an opportunity to build Modern food processing infrastructure focused on developing value-added products out of the raw pulses. Exports look another viable option for making this sector more profitable. We need to put extra efforts in this area to ensure that we are competitive in prices globally. We need to connect with the prospective markets on urgent basis and our Missions in overseas countries can be asked to do the necessary ground work. We have seen various Overseas Missions in India working hard to promote their goods in India. IPGA also hosted Trade missions from Ethiopia and Russia recently. These missions had come to India with a clear intention of promoting their Agri Produces in India. We all know that this is the testing time for the trade and we all need to re-invent ourselves to be relevant in the markets.

Before I sign off, I would request all of you to give us your valuable feedback from time to time and send in your contributory articles for Pulse India. You may write to me at varinder.m@ipga.co.in I also take this opportunity to thank all the advertisers for their support.

May you all have wonderful time during the upcoming festivals.

Varinder Machhral
CEO IPGA

Self Sufficiency And Export Possibilities In Pulses

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Pulses are rich source of protein, dietary fibre and minerals for largely agrarian population of the Indian Sub-continent.Role of pulse crops in improving soil health and sustaining agricultural production are well documented. In India, more than a dozen and half pulse crops are grown in varying climatic conditions in different seasons. India remains the largest producer (23-24 m t, consumer (25-26 m t) and importer (5-6 m t) of pulses until recently. During last 5 years India has imported 5.62 m t of pulses on an average spending more than INR 20000 crores annually. Popular scheme of Govt. of India named as National Food Security Mission (NFSM) has helped promotion of pulses cultivation and pulses production attained its peak (19.25 m t)in 2013-14 but this could not be maintained in successive years due to low sale price of pulses in Indian market. The hostile weather and low sale price at farmers door steps led in drop of pulses production to 17.15 m t (2014-15) and further to 16.35 m t (2015-16). The sensitivity of Government of India towards pulses help in realizing the problem and policies for promotion of pulses were formulated and immediately implemented also. All such efforts resulted in attaining ever highest production of pulses i.e. 23.13 m t tonnes during 2016-17. This has further gone up by 2.10 m t during 2017-18 (25.23 m t) as per 4th Advance Production Estimates. The positive policy support to the farmers in terms of remunerative minimum support price (MSP) and indicative procurement on MSP has encouraged farmers to grow more pulses following integrated crop management (application of fertilizers, irrigation and agrochemicals) to some extent. The positive trend in pulses production is likely to continue and will open doors for export of pulses in near future.

1. Introduction

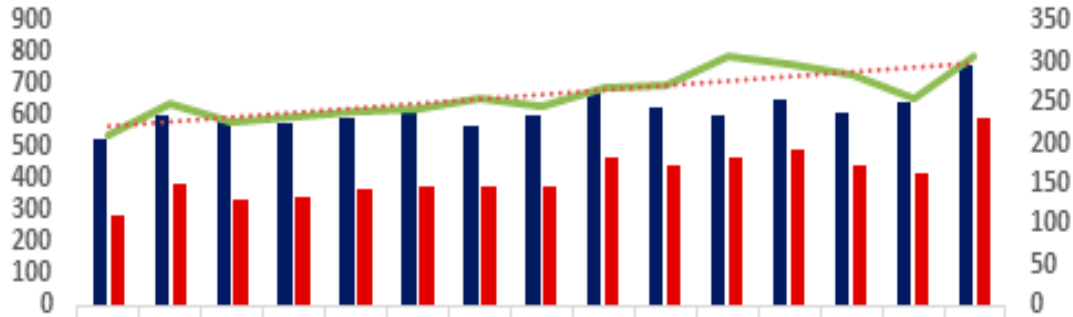
The rising import of pulses to the tune of 5.83 m t during 2015-16 and further import of 6.61 m t pulses during 2016-17 warranted Government of India to implement planned strategies effectively taking all stakeholders on board. Since, India could produce 6.78 m t of additional pulses during 2016-17 and almost similar quantity of pulses (6.61 m t) was imported by various agencies in same year, price of pulses in domestic market crashed for almost all pulses except chickpea and to some extent of lentil. As research and development machinery of Government of India was vigilant on the issue of pulses; scheme for procurement of pulses directly from farmers was implemented immediately without time lapse. This resulted in procurement of about 2 million tonnes of the pulses by the Government using price stabilization funds to maintain buffer stock. This initiative of Govt. of India along with other strategies like ensuring timely availability of quality seeds of high yielding varieties, massive demonstrations on varieties and matching production technologies has encouraged farmers to grow more pulses which is evident from marginal increase in area under rabi pulses over 2016-17 which was maximum in the history of pulses cultivation in India. Considering the increase in production of pulses during 2016-17 and 2017-18, Government of India has imposed 70% import duty on chickpea from 60% on 20th June 2018 and 40% on lentil keeping 50% import duty on yellow pea (fieldpea) to protect interest of Indian farmers (Commodity Profile for Pulses-July, 2018) Source: http://agricoop.gov.in/sites/default/files/Pulses%20profile%20for%20July%2C%202018%20%281%29).pdf). India has potential not only to sustain current level of production but also has capacity to export pulses as policies of the Government are encouraging farmers to grow more pulses with input application. In India, Madhya Pradesh is the largest producer of pulses followed by Rajasthan, Maharashtra, Karnataka, Uttar Pradesh, Andhra Pradesh and Odisha. These six states shared more than 80% pulses area and contribute about 78% of the total pulses production during 2015-16. Scope exists in states like Tamilnadu, Jharkhand, Chhattisgarh and Bihar for expansion of pulses cultivation.

2. Trends in area, production and productivity of pulses

Indian farmers grow variety of food crops including rice, wheat, coarse cereals, minor millets, maize and pulses and produced 284.83 m t (2017-18) of food grain which is higher by 9.72 m t in comparison to previous record production of food grains (275.11 m t) achieved during 2016-17 (DACFW, 2018. 4th Advance Estimates of production of major crops for 2017-18, DACFW, Govt. of India). During same year (2016-17), pulses production also attained its peak (23.13 m t) by producing 3.88 m t more pulses in comparison to previous record of 19.25 m t (2013-14). This has gone further up by another 2.10 m t during 2017-18 as per 4th advance estimates released on 28th August 2018 by Ministry of Agriculture and Farmers Welfare, Government of India. The share of chickpea (11.23 m t) in total pulses production (25.23 m t) during 2017-18 is expected to be 44.51% followed by pigeonpea (16.84%), and record production of urdbean

(14.11%). The pulses import in our country crossed 6.608 m t during 2016-17 and share of pea alone crossed 3.17 m t (47.92%) followed by chickpea (16.34%), lentil (12.55%) and pigeon pea (10.64%), whereas out of total export of 137.20 thousand tonnes of pulses, share of chickpea alone to the export basket of pulses was 63.73% (87.51 thousand tonnes) during 2016-17 which was lower than the previous year (87.91%). The total pulses export gown up by 42.06 thousand tonnes during 2017-18. This has happened due to bumper production of pulses including chickpea in India. The country has witnessed positive trends in pulses production during last 15 years as shown in Fig.1. was to the tune of 5.83 m t of worth INR 25695.4 crores. Even after higher production of pulses (23.13 m t) during 2016-17 there was huge import of pulses (6.61 m t)worth INR 28523.9 crores (Fig.2, 3, 4) that impacted domestic market heavily and Indian farmers could not get remunerative price for their produce. Government of India was fully aware of its responsibility towards consumers and farmers and multipronged strategies were implemented to enhance indigenous pulses production. Until recently India remains largest importer of pulses with average import of 5.62 m t during last 5 years (Source: http://commerce.gov.in/EIDB.aspx).

Fig. 1. Trends for pulses production in India



	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Area (lakh ha)	205	234.6	227.6	223.9	231.9	236.3	220.9	232.8	264	244.6	232.6	252.2	235.5	249.1	294.5
Production (lakh tons)	111.3	149.1	131.3	133.8	142	147.6	145.7	146.6	182.4	170.9	183.4	192.6	171.5	163.5	231.3
Yield (kg/ha)	543	635	577	598	612	625	659	630	691	699	789	764	728	656	786

The highest production of pulses during 2017-18 could be achieved due to higher price of pulses during previous year, increased awareness about high yielding varieties and more availability of quality seeds for sowing, ensured availability of phosphoric fertilizers and agro-chemicals, favourable policy support in terms of minimum support price (MSP), Pradhan Mantri Fasal Bima Yojna (PMFBY), Pradhan Mantri Krishi Sinchai Yojna (PMKSY) increased area under cultivation, and increased productivity. Further, to save precious foreign currency by reducing import and ensure nutritional security to the ever growing population and poor people of our country pulses production need to be increased from present level of 25.23 m t to 26.50 m t by 2020, and this target seems to be achievable.

India mainly imported dried and shelled peas (matar), pigeon pea (tur), chickpea (chana), lentil (masur) and mungbean/urdbean which together accounted for approximately 95% of the total import volume during 2012-13 to 2017-18. Due to less production of pulses during 2015-16 in comparison to previous 2 years production the price of pulses went up in Indian market and consumers paid heavily. During 2015-16 import of pulses

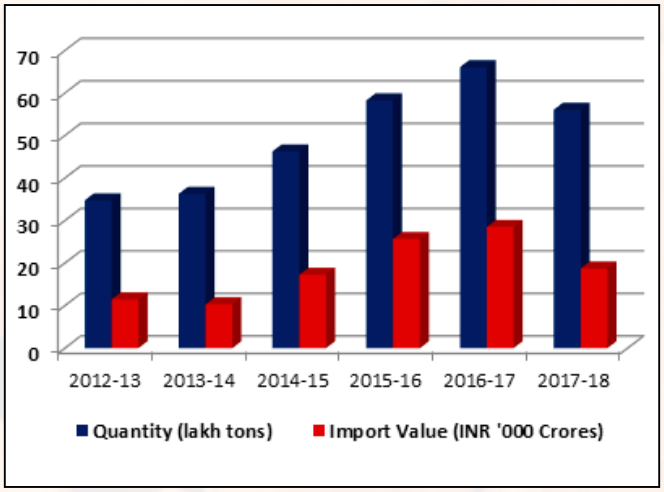


Fig. 2 Import (lakh tons) &
value of imported pulses (INR 000'crores) in India

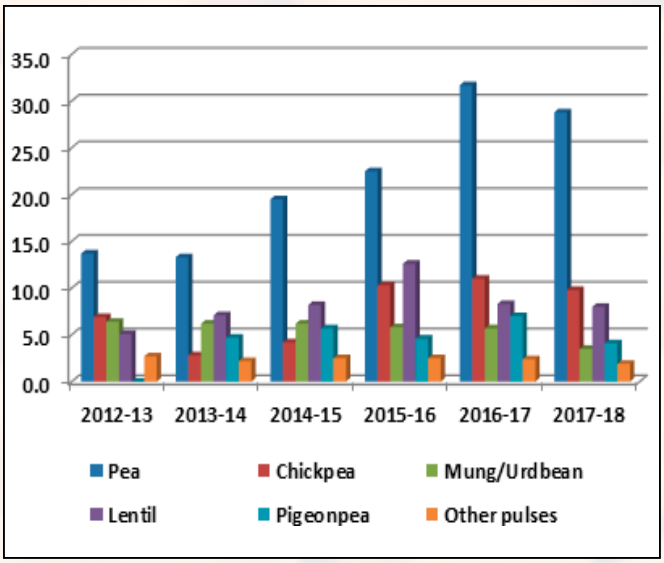


Fig.3. Import of different pulses (in lakh quintals) in India

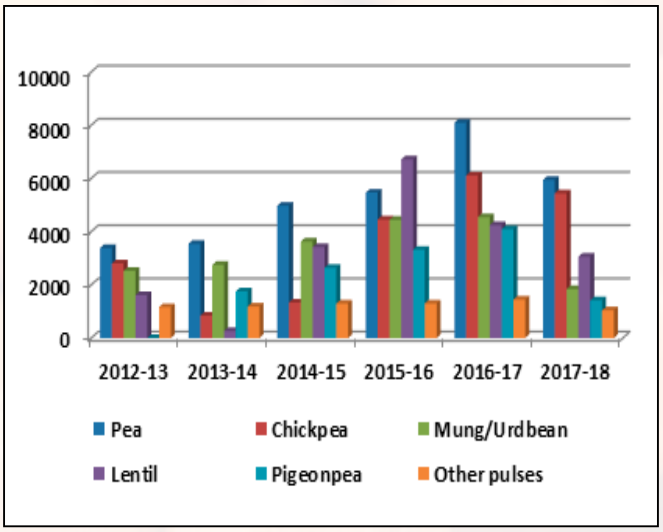


Fig. 4. Value (in INR Crores) of import of different pulses in India

3. Demand and supply

With the increasing population and people's inclination towards vegetarianism the demand for pulses is increasing continuously. Otherwise, people living in Indian-subcontinent love to eat vegetarian food, hence pulses became major source of dietary protein. Considering importance of pulses in ensuring nutritional security for ever growing population and improving soil health for sustainable agricultural production Government of India has launched several schemes for promotion of indigenous production of pulses.It is estimated that India may need about 26.50 m t of pulses to fulfil pulses demand by 2020 and 32 m t by 2030 which may further go up in subsequent years. This will help in maintaining present level of protein availability @42g per capita per day for human consumption and demand for seed and other uses.

4. Scope

If present level of area (29-30 m ha) under pulses cultivation can be sustained with even marginal increase of 150-200 kg per ha in productivity which is not a difficult task due to availability of improved varieties and matching production technologies besides favourable policy support from the Government, Indian farmers have capacity to produce 28-29 m t of pulses thereby ensuring achieve self sufficiency in pulses production. However, there will need of good investment for development of improved varieties insulated against multiple adversities, integrated crop production and protection technologies, quality seed production, favourable policy support in terms of incentives (not subsidy), human resources development for technology generation and use, efficient transfer of technologies network, processing, assured market, procurement at remunerative minimum support price, bringing pulses various social schemes for demand generation, etc. so that future demand for domestic consumption pulses can be fulfilled. Ample scope exists for export of pulses having specific traits like extra-large seeded kabuli chickpea, large seeded lentil, mungbean and pigeonpea as large number of people form Indian sub-continent are residing in different parts of the world and have preference for pulses.

5. Research network available

Under the aegis of Indian Council of Agricultural Research (ICAR), Department of Agricultural Research and Education (DARE), Govt of India dedicated research network comprising Institutes and All India Coordinated Research Projects (AICRPs) centres are working for improvement in pulse crops (http://www.iipr.res.in). Recently, ICAR-IIPR has established IIPR-Regional Research Centre, Bhopal and IIPR-Regional Centre-cum-Offseason Nursery, Dharwad to conduct intensive research on pulse crops during last decade and initiated establishment of two more regional research stations, one each in western India (Bikaner) and eastern India (Bhubaneswar). In addition, several other ICAR Institutes and CGIAR like International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and International Center for Agricultural Research in the Dry Area (ICARDA)and International Center for Tropical Agriculture (CIAT)are also working on pulses research and development.

6. Improved varieties available

More than 195 improved varieties of different pulse crops have been developed during last 10 years for cultivation in different parts of the country under varying seasons (Table 1-2). The recently established 150 Seed-Hubs at ICAR Institutes, Agricultural Universities and Krishi Vigyan Kendra (KVKs) are helping in spread of these varieties along with improved integrated crop management technologies (Sandhu and Chaturvedi, 2018). The KVKs are also involved in large scale cluster frontline demonstrations on improved varieties and production technologies of different pulses since 2015-16.

Table 1.List of varieties of pulse crops notified during last 10 years (2008-2017)

Crop	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
Chickpea	4	3	7	2	4	3	1	3	**8**	**10**	**45**
Mungbean	2	7	3	1	3	1	3	2	**10**	**3**	**35**
Pigeonpea	2	3	1	1	2	3	2	0	**5**	**2**	**21**
Urdbean	4	3	4	2	5	1	1	1	**2**	**1**	**24**
Field pea	3	0	3	2	2	0	2	1	**4**	**2**	**19**
Lentil	3	3	2	3	1	0	1	1	**2**	**6**	**22**
Cowpea	1	2	3	0	1	0	1	0	**1**	**4**	**13**
Cluster bean	1	0	4	0	0	0	0	0	**0**	**0**	**5**
Horse gram	0	0	1	1	1	0	1	0	**2**	**2**	**8**
Moth bean	0	0	0	0	0	0	0	0	**0**	**0**	**0**
Rajmash	0	0	1	0	0	0	0	0	**0**	**1**	**2**
Lathyrus	1	0	0	0	0	0	0	0	**0**	**0**	**1**
Total	**21**	**21**	**29**	**12**	**19**	**8**	**12**	**8**	**34**	**31**	**195**

7. Issues

Country has witnessed impressive growth in pulses production during last decade. Still low seed replacement and variety replacement rate; timely supply of quality seeds, matching integrated crop management practices, non-availability of critical inputs on time, biotic (diseases, insects pests, nematodes, weeds) and abiotic stresses (drought, temperature extremities, soil salinity/acidity), vertebrate pest (like Blue Bull, Monkey, Deer, Wild Boar, etc.), fluctuating prices, non-availability of storage facilities for seed in high rainfall areas, low level of farm mechanization, lack of value addition and procurement at remunerative MSP until recently etc. are some of the major constraints limiting pulses production. There is need to reprioritize and reorient research (region wise and crop wise) programs to meet future demand. Accordingly, region wise pulse crops and priority areas for their improvement are listed here (Table 3).

Table 3. Region wise pulse crops and their crop improvementresearch priorities

Crop	Region	Priority
Chickpea	North East plains	Rice-fallow: varieties early growth vigour, early maturity and high biomass
	Central & South India	Varieties amenable to Mechanized harvesting- tall & erect varieties
	Central India & Terai	Intercropping with sugarcane: Tall and erect varieties of chickpea and lentil
Lentil	NEH region & North East plains	Early maturing, high biomass varieties for rice-fallow
Fieldpea	North-east, Central India & NEH region	High biomass and early maturing varieties
Lathyrus	Central and eastern India	Low ODAP (β-N-Oxalyl-L-α,β-diamino propionic acid) varieties
Kabuli Chickpea & Lentil	Central & South India	Extra-large seeded varieties for export purpose
Pigeonpea	North-West & South India	Early/medium duration CMS based hybrids
Mungbean	North-West, North-East India	Photo-thermo-insensitive & early maturing varieties for spring/ summer season as catch crop, pre-harvest sprouting tolerance
	North and Central India	Long duration varieties for kharif season to ensure escape of maturity time from end of the season rains
Urdbean	North and Central India	Photo-thermo-insensitive, pre-harvest sprouting tolerant varieties
	Coastal areas	Short duration (70-80 days maturity) varieties possessing growth vigour and drought tolerance

8. Strategies and interventions

Total pulses output can be increased either by improving grain yield per unit area or bringing additional area under these priority crops. The transfer of know how about improved cultivation practices along with assured availability of quality seeds on high yielding varieties and critical farm inputs will certainly help in improving productivity of pulses. The frontline demonstrations conducted during recent past also indicate that there is large yield gaps exist and these can be reduced through transfer of technologies. The second option i.e. bringing additional area under pulses in eastern and peninsular India can also help in enhancing pulses production (Table 4) within 2-3 years.

Table 4.Bringing additional area under pulses

S.No.	Potential crops/ cropping systems	Specific area	Potential area (m ha)	Target area (mha)
1.	**Intercropping**			
	Mungbean with Sugarcane (irrigated)	Western, Central and Eastern Uttar Pradesh; and Bihar	0.40	0.20
	Mungbean with Cotton and millets (rainfed uplands)	Maharashtra, Andhra Pradesh and Tamil Nadu	0.30	0.20
	Pigeonpea with soybean, sorghum, cotton, millets and groundnut (rainfed upland)	Andhra Pradesh, Malwa Plateau of Madhya Pradesh, Vidarbha of Maharashtra, North Karnataka, Tamil Nadu	0.50	0.30
	Chickpea with Barley, mustard, linseed and safflower (rainfed)	South East Rajasthan, Punjab, Haryana, Uttar Pradesh, Bihar, Vidarbha of Maharashtra	0.50	0.30
	Chickpea/Lentil with autumn planted /Ratooned sugarcane	Maharashtra, Uttar Pradesh, Bihar	1.00	0.60
2.	**Catch crop:** Mungbean in Spring/Summer	Western and Central Uttar Pradesh; Haryana, Punjab, Bihar, West Bengal	1.00	0.50
3.	**Rice fallows**			
	Chickpea	Eastern Uttar Pradesh, Bihar, Jharkhand, Odisha, Chhattisgarh, West Bengal	0.40	0.20
	Lentil	Eastern Uttar Pradesh, Bihar, West Bengal, Assam, Jharkhand	0.30	0.20
	Lentil/Fieldpea	North-East Hill region	0.10	0.10
	Urdbean/Mungbean	Andhra Pradesh, Tamil Nadu, Odisha, Karnataka	0.50	0.20
4.	**Kharif fallow** Urdbean/mungbean	Bundelkhand of Uttar Pradesh and Madhya Pradesh	1.20	0.50
	Total targeted area		**6.20**	**3.30**

9. Policy support:

The positive policy support in terms of declaration of remunerative minimum support price (MSP) and purchase by the Government agencies at MSP has impacted positively on pulses output in India. Government of India has increased MSP for various pulses during last few years that have encouraged farmers to apply critical farm inputs to raise productivity. It is important to note that there was bonus of Rs. 200 per quintal on chickpea, Rs. 150 per quintal on mungbean and urdbean chickpea and Rs. 100 per quintal for lentil payable over and above the MSP in 2017-18 to the farmers. Recently Government of India has declared remunerative MSP for kharif pulses that will motivate farmers to grow more pulses with higher profitability (Table 5). It is general feeling that that assured procurement at MSP and bringing pulses under public distribution system (PDS) can be a viable preposition to ensure better return to the farmers and nutritional security to Indian population.

Table 5.Minimum Support Price (Rs/Quintal) of pulses for the last 5 years

Minimum Support Price (Rs/Quintal) of pulses							
Crops	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Pigeonpea	3850	4300	4350	4625	5050	5450	5675
Chickpea	3000	3100	3175	3500	4000	4400*	-
Mungbean	4400	4500	4600	4850	5225	5575**	6975
Urdbean	4300	4300	4350	4625	5000	5400**	5600
Lentil	2900	2950	3075	3400	3950	4250***	-

Sources:*Commission for Agricultural Costs and Prices* (CACP).* *Including bonus of Rs. 200 per quintal, ** including bonus of Rs. 150 per quintal and, *** including bonus of Rs. 100/quintal*

10. Summary

The ever highest production of pulses for two consecutive years (2016-17 and 2017-18) could be achieved due to increased supply of quality seed of targeted varieties, adoption of matching integrated crop management technologies, technology demonstrations, efforts in bringing more area under pulse crops, and favourable policies like increase in minimum support price (MSP), and procurement at MSP etc. We are sure that creation of Seed-Hubs for quality seed production, establishment of additional breeder seed production centres, Pradhan Mantri Krishi Sinchayee Yojna (PMKSY), Pradhan Mantri Fasal Beema Yojna (PMFBY), cluster frontline demonstrations (CFLDs), etc. and network of Krishi Vigyan Kendra (KVKs) are likely to play an important role in improving pulses production in years to come and country can become major pulses exporting country from a importing one. There is definite demand of processed pulses like pigeonpea in USA, Canada, Australia, UAE, UK and Canada where large number of people from Indian sub-continent live and have preference for pigeonpea dhal. The unprocessed (only graded ones) extra-large seeded kabuli chickpea and lentil has good market in UAE, Pakistan, Turkey, Saudi Arab, Algeria, etc.. The total volume of export can be increased from 1.79 lakh to 3-4 lakh tonnes within 3 years. Considering current level of production and expected increase in pulses output due to good monsoon rains this target of export seems achievable.

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Year wise number and list of varieties of pulses notified during last 10 years (2008-2017)

Crops	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total Varieties notified: 195	21	21	29	12	19	8	12	8	34	31
Chickpea (45)	Pusa 2024, Jawahar Gram- 6 (JG-6), JG-14, GNG-1581	Shubhra (IPCK 2002-29), BGD-103, Pant Kabuli Chana-1	Gujarat Junagadh Gram-3, Kripa, GPF 2, RSG-974, Ujjawal, PKV KABULI-4, MNK-1	Raj Vijay Kabuli gram 101, Raj Vijay gram 201	HK-4, PKV Harita, Raj Vijay Gram 203, L-555	GNG 1958, GNG 1969, NBeG 3,	JG-12	Bidisha (BG 1084), Vallabh Kabuli Chana-1, Raj Vijay Gram 202	CSJ 515, NGeG 119, GNG 2144, JGK 5, BDNGK 798, GJG 6, JG 36, GBM 2	GJG 0809 (GG 5), GNG 2171, Indira Chana 1, NBeG 49, Pant G 4, Pant G 3, Pantkabuli Gram 3, NBeG 47, Pant G 5, Phule Vikram
Mungbean (25)	WBM-29, WBM-4-34-1-1	IPM 02-3, Pusa 0672, KKM-3, MadhiraPesara 347, MH-125, Pant Mung-5, Piary Mung	PKV AKM-4, VBN(Gg) 3, PKV Green Bold	IPM 02-14	Swati, MH-421, BM 2003-2	SML 832	MH 421; DGGV-2; BGS-9 (Somnath)	CO 8, Shalimar Moong-2 (SKUAM -300)	Utkarsh, Yadagiri, Sri Rama, GBM 1, Shikha, Virat, SML 1115, MSJ 118, ML 2056, RMG 975	Pusa 1317, Pant Mung 8, DGG 1
Urdbean (34)	Rashmi (LB-625), Sulata (WBU 109), Prasad, VBN (Bg) 5	IPU 02-43, MadhiraMinumu – 207, Lam Minumu 752	Mash 479, Mash 391, Mash 114, Himachal Mash 1	Co6 COBG 653, VBN (Bg) 7	Vishwas, VBN 6, UH-1, DU-1, TU 40	Pratap Urd-1	DBGV-5	Vallabh Urd-1	LBG 787, PDKV Blackgold (AKU 10-1)	Tirupati Minumu 1
Pigeon pea (21)	Pusa 2002, BRG-2	TJT 501, Pant Arhar-291 (PA-291), Surya (MRG-1004)	Rajeev lochan	TS-3R	Anand Grain Tur-2, BDN 711	Rajeshwari, Rudreshwar, PKV Tara	BRG-4 (BRG 10-2); ICPH 2671(Hybrid)	-	GJP 1, PRG 176, ICPH 2740, GT 102, BRG 5	LRG 52, BDNG 716
Lentil (22)	Shekhar Masoor -2 (KLB -303), Shekhar Masoor -3 (KL -320), Moitree (WBL-77)	Pant Lentil 6 (PL 02), Pant Lentil 7 (PL 024), VL Masoor 129	Pant Lentil-8, Pant Lentil-7	VL Masoor 514, LL931, VL Masoor 133	IPL-316	-	Raj Vijay Lentil 31 (JL 31)	Shalimar Masoor-2 (SKUA-L9)	RLG 5, IPL 526	RBL 11-6, L 4147, Pant L 9, Kota Masoor 1, Shekhar Masoor 4, Shekhar Masoor 5
Field pea (19)	HFP-9426, Plant Pea -42, Shweta (KM-2241)	-	Aman, Gomati, Dantiwada Fieldpea 1	IPF 4-9, VL Matar 47	HFP 529, Gomati	-	IPFD 10-12; HFP 715	Shalimar Pea-1 (SKUA-P-8)	Indira matar 1, IPFD 11-5, IPFD 6-3, RFP 4	IPFD 12-2, Pant Pea 155
Cowpea (13)	IT-38 9561-1	Pant Lobia-1, KM-5	Hissar Cowpea-46, C 519, Hidrudaya	-	MFC-08-14	-	DCS 47-1	Pant Lobia 3	Phule Vithai	Phule Rakhumai, Tirupati Cowpea 1, DC 15, Pant Lobia 5,
Cluster bean (5)	Rajasthan Guar-1038 (RGC-1038)	-	HG 884, HG 2-20,HG 870, Guar Karnal	-	-	-	-	-	-	-
Horse gram (8)	-	-	CRIDA Latha	Indira Kulthi-1	Gujarat Dantiwada Horsegram-1	-	CRIDA Harsha (CRHG 19)	Pratap kulthi 2	CRIDA Vardhan, Phule Sakas	Chhattisgarh Kulthi 2, Chhattisgarh Kulthi 3,
Rajmash (2)	-	-	Gujarat Rajmash-1	-	-	-	-	-		Shalimash rajmash 2
Lathyrus (1)	Mahateora	-	-	-	-	-	-	-	-	-

Update Report Of Upcoming Pulses Crop

Nirav Desai
GGN Research

Kharif Pulses Crop-wise coverage for the week ending 10 Aug' 2018 ('000'Hac)

S No.	Pulses Crops	Area Covered		Change	Final area 2017
		2018	2017		
1	Tur (Arhar)	4217	4224	-7	4346
2	Urdbean	3493	3969	-476	4299
3	Mungbean	3213	3028	185	3181
4	Other	1492	1568	-76	2375
	Total	**12415**	**12789**	**-374**	**14201**

(Table No.1)

Area coverage during Kharif 2018 Pulses is lower by 374 Thousand Hactares compared to corresponding period of Kharif 2017.

Area coverage of key pulses crop for the week ending 10 Aug' 2018 ('000' Hac)

TUR (ARHAR)

S No.	States	Area Covered		Change	Final area 2017
		2018	2017		
1	Maharastra	11854	12394	-540	12738
2	Karnataka	9470	8110	1360	8830
3	Madhya Pradesh	6250	6350	-100	6510
4	Uttar Pradesh	3159	3155	4	3360
5	Telangana	2639	2400	239	2510
6	Gujarat	2251	2597	-346	2722
7	Andhra Pradesh	1230	1270	-40	2600
8	Other states	5314	5964	-650	4189
	TOTAL	**42167**	**42240**	**-73**	**43459**

(Table No.2)

URDBEAN

S No.	States	Area Covered		Change	Final area 2017
		2018	2017		
1	Madhya Pradesh	1455	1716	-261	1789
2	Uttar Pradesh	606	496	110	596
3	Rajasthan	464	540	-77	540
4	Maharastra	360	461	-101	483
5	Gujarat	100	122	-22	130
6	Karnataka	84	118	-34	130
7	Other states	425	516	-90	630
	TOTAL	**3493**	**3969**	**-476**	**4299**

(Table No.3)

MUNGBEAN

S No.	States	Area Covered		Change	Final area 2017
		2018	2017		
1	Madhya Pradesh	1455	1716	-261	1789
2	Uttar Pradesh	606	496	110	596
3	Rajasthan	464	540	-77	540
4	Maharastra	360	461	-101	483
5	Gujarat	100	122	-22	130
6	Karnataka	84	118	-34	130
7	Other states	425	516	-90	630
	TOTAL	**3493**	**3969**	**-476**	**4299**

Main Features

Area covered under Khariff pulses crop 2018 has reduced by around 3% to 124.15 Lac Hac over last year. All the khariff pulses showing a net decline in acreage except moong. (Table 1)

- All Area covered under Khariff Arhar crop has reduced by 72K Hac from previous year to 42.16 Lac Hac. All the states except Karnataka & Telengana are showing decline in acreage. (Table 2)
- All India area covered under Uradbean crop has significantly reduced by 4.76 lac hac to 34.93 Lac hac. All the states showing net decline in areage except UP. (Table 3)
- All India area covered under Mungbean crop has increased by 1.85 Lac Hac to 32.13 lac hac mainly on account of higher acreages in Rajasthan and Karnataka. While other states are showing net decline in acreage. (Table 4)

- Farmers have shifted towards soybean, cotton & sugarcane other local crop due to unsatisfactory returns and lower prices of pulses previous year.
- In Maharashtra, most of pulses crops seems good. However, area are reducing due to lower return in previous season. Much needed rainfall is required in next 4-5 days for the pod filling and protection of crops from pests.
- Government have hiked the MSP for Khariff 2018 season pulses crop but this announcement of MSP came out quite late by that time as farmers already have completed their most of khariff planting.

- Due to late the arrival of monsoonal rains in Rajasthan the planting was delayed, farmers have boosted the Moong crop sowing.
- Below average rainfall occured in almost all pulses growing areas.
- The nation's greatest rainfall deficits relative to normal continue in some western and southern parts of the nation, but no area is critically dry.
- Rainfall so far in the month of August has been more notably below average in the west and some interior southern parts of the nation. However, due to elongate restricted rainfall period still no area is drought stricken.
- Most interior western and southern crop areas in India reported less than 1.00 inch of rain during the past week to 10 days with many areas facing net drying conditions.
- This monsoonal season erratic rainfall occured in Rajasthan, parts of western Madhya Pradesh, northern & southern Maharashtra and parts of Gujarat.
- Southern India has short to very short moisture due to the drier biased environment; there is a growing need for rain as moisture deficits begin to increase. Pulses crop remain favorable in much of the region due to significant rain occurring at the beginning of the monsoon season and few time to time periods of scattered rainfall.
- Pulses crop conditions in Maharashtra and western Madhya Pradesh are favorable despite the lack of significant rain recently. Crop conditions in eastern Rajasthan are also generally favorable.
- Gujarat and the portions of western Rajasthan Crop development advanced quite slowly due to moisture stress but still crop losses are at minimum level. Some production cuts are possible if the significance rain did not increase soon.

Weather Analysis

Timely start of monsoon rain have facilitated pulses planting in MP, Maharashtra, Andhra Pradesh and Karnataka. Whereas, rains were poor in Rajasthan which have delayed planting.

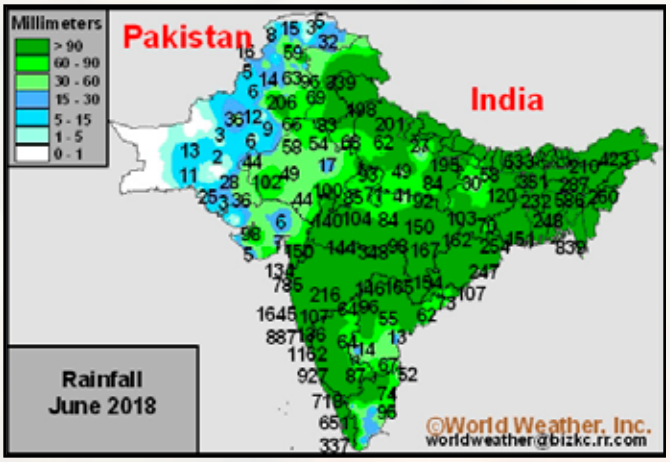
The rainfall improved in all parts of India which have supported primary development of crop and also helped in accomplishing planting in Rajasthan. In some parts of Telengana and Karnataka the monsoon rain was low.

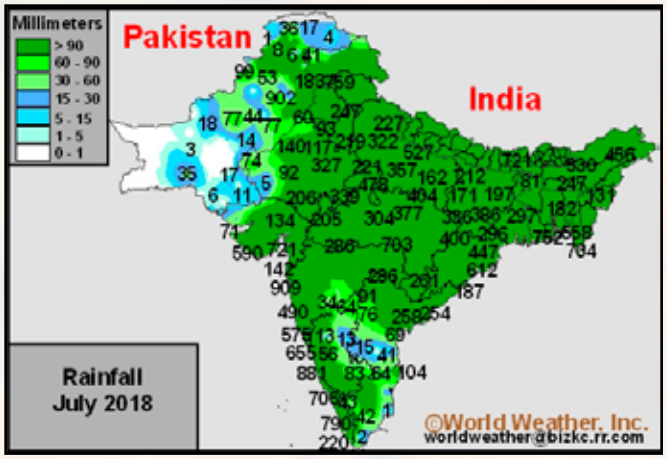
In the Current month, Monsoonal rains underperformed in the western half of the nation. Interior South, Maharashtra, west MP, Gujarat and Rajasthan received less than usual rains. Gujarat and West Rajasthan remain drier than normal. Whereas, significance of rains favoured Eastern half of nation.

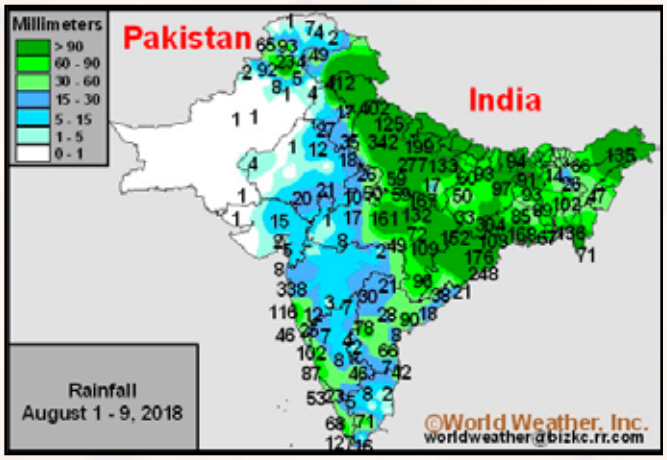
Weather Forecast

Rainfall this week will remain limited in western half of India. After that, rainfall is expected to begin increasing. The moisture boost will be most significant in Rajasthan, parts of western Madhya Pradesh, northern and eastern Maharashtra and parts of Gujarat. All these areas will experience the improvements in soil moisture.

Southern India will remain drier biased during this week and next week. After that Southern Indian will begin to see greater rainfall.Eastern half of nation will continue to see rains over a week to 10 days.







Pradeep Jindal,
Managing Director

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Logistics - *The backbone of India's EXIM Trade*

Mr. Rakesh Narendra Shah
Director
Narendra Forwarders Private Limited.

India is one of the major players in the global Export Import trade. Over a period of time India has developed a robust logistics infrastructure in Transportation, Warehousing etc. including Custom Broking for smooth operations in the field of International Trade. The role of logistics sector in the field of pulses has been immense in the recent past as India, just about a year ago, was the largest importer of Pulses in the world with annual imports of over 5 million tons per year. Over the last year and half, the Government Policies have yielded results and we are seeing record productions of pulses in last two years. (Refer below table).

DOMESTIC PRODUCTION OVER THE LAST 5 YEARS
(Unit: Million Metric Tons)

Sr. No.	Year	Kharif	Rabi	Total
1	2013-14	5.99	13.25	19.24
2	2014-15	5.73	11.42	17.15
3	2015-16	5.53	10.82	16.35
4	2016-17	9.58	13.55	23.13
5	2017-18	9.01	15.50	24.51

Source: Ministry of Agriculture & Farmers Welfare

The result of this high production of pulses is that imports have come down substantially. Since we have enough pulses of our own, Indian Government has introduced a plethora of tariff and non-tariff restrictions to curb the imports of various pulses.

The table below gives us an insight of the quantities imported in last three years.

INDIA'S IMPORTS OF MAJOR PULSES (Unit: Million Metric Tons)				
Sr. No.	**Pulses**	**2015-16**	**2016-17**	**2017-18 (Apr-Nov)**
1	Peas (Matar)	2.25	3.17	2.45
2	Chickpeas (Chana)	1.03	1.08	0.75
3	Moong / Urad	0.58	0.57	0.33
4	Lentils (Masoor)	1.26	0.83	0.70
5	Pigeon Peas (Tur)	0.46	0.70	0.31
TOTAL PULSES		**5.58**	**6.36**	**4.54**
Source: Department of Commerce				

In the current year the quantities of imports are further down. Government has taken certain measures like enhancing of MSP, Curbs on Imports etc. are to increase the income of large farmers fraternity. But this has thrown a challenge to the logistics sector. India has been the largest importer of pulses for over a decade and the entire logistics sector has planned, prepared and implemented process, manpower and equipment to manage the large quantum in a seamless and effective manner. But these sudden changes, and many of them for short-term period, have put the entire logistics value chain into a disarray. It is difficult for the stakeholders to take a decision of whether to continue keeping the infrastructure in place or to start dismantling it to ensure financial viability of operations. While the decision to impose restrictions have the best intent of encouraging domestic production and improving farmer income, but this certainly had the impact on the viability and sustainability of many logistics players who were largely working for the import of pulses. Hence It is imperative for the Government that supply sources, production cycles, global production vis-à-vis domestic pulses need to be taken into consideration while devising policies. Besides this in order to keep the Logistics sector viable, Government need to come out with a suitable policy to encourage exports of these pulses so that the infrastructure created by many players can be put to use. The increase in exports will also help the farmers to derive better price realization. It will also be important to know here that frequent changes in the import policy also create lot of confusion and chaos at the time of clearance of the cargo at customs/Port and hence all the notifications effecting changes in the policy should be clear and without any ambiguity. Any such ambiguities in the notifications leads to delay in the clearance at ports and warrants un necessary expenses.

The policies that currently govern the import of various pulses are as follows:

a. Only Millers allowed to import Tur, Urad and Moong
b. Tur imports restricted to 200,000 tons for the fiscal year
c. Urad and Moong imports restricted to 150,000 tons each per fiscal year
d. Imports have to be completed by 31.08.2018
e. Additional 150,000 tons of Tur allowed for import from Mozambique only for the fiscal year 2018-19.
f. port of Peas (includes Yellow Peas, Green Peas, Kaspa Peas and Dun Peas) restricted to 100,000 tons from 01.04.2018 to 31.12.2018.
g. Lentils and Bengal Grams/other chick peas are freely importable.

The Duty Structure of various pulses and applicable restrictions are given along with. We strongly feel that the relevant Ministries like Finance, Agriculture, Commerce, Consumer Affairs, etc. involved in the process of devising the strategies need to invite stakeholders of the entire value chain also to discuss the future plan of action and take inputs from each to ensure that neither does the farmer nor trader nor logistics service provider suffer. The Logistics partners are more than willing to work with and support the initiatives of the Government to double farmers income by 2022 but.at the same time the interest of other stake holders also must be safeguarded,

CURRENT DUTY STRUCTURE ON PULSES

Sr No.	PULSES	HS CODE	APPLICA-BLE DUTY	TARIFF RISTRICTION (CBIC)	NON-TARIFF RESTRICTIONS (DGFT)	DUTY ON LDC / ASEAN COUNTRIES
1	Peas (Pisum Sativum)	07131000	50%	NA	100,000 MTs upto Dec 31st, 2018	NIL
2	Yellow Peas	07131000	50%	NA	100,000 MTs upto Dec 31st, 2018	NIL
3	Green Peas	07131000	50%	NA	100,000 MTs upto Dec 31st, 2018	NIL
4	Kaspa Peas	07131000	50%	NA	100,000 MTs upto Dec 31st, 2018	NIL
5	Dun Peas	07131000	50%	NA	100,000 MTs upto Dec 31st, 2018	NIL
6	Kabuli Chana	07132010	60%	Nov. 02, 2018 Applicable Duty for USA Origin @ 70%	NIL	NA
7	Bengal Gram	0713 2020	60%	Nov. 02, 2018 Applicable Duty for USA Origin @ 70%	NIL	NA
8	Other Chickpeas	07132090	60%	Nov. 02, 2018 Applicable Duty for USA Origin @ 70%	NIL	NA
9	Lentils	07134000	30%	Nov. 02, 2018 Applicable Duty for USA Origin @ 40%	NIL	NA
10	Pigeon Peas	07136000	10%	If no Registration Certificate then @ 30%.	Restricted to 200,000 MTS for FY 2018-19 by Millers and Refiners Only. ***	NIL
					150,000 MTs to be imported from Mozambique basis licenses issued by DGFT for FY 2018-19. ***	
11	Urad	07139010	NIL	NIL	Restricted to 150,000 MTS EACH for FY 2018-19 by Millers and Refiners Only. ***	NA
12	Moong	07139010	NIL	NIL	Restricted to 150,000 MTS EACH for FY 2018-19 by Millers and Refiners Only. ***	NA

* - Agri Commodities imported from Least Developed Countries (LDC) List and ASEAN Countries are exempt from Import Duty. However, The Certificate of Origin should clearly mention under which Policy it is being imported.

** - Valid Certificate of Origin mentioning the required details Mandatory.

*** - Imports to be completed before Aug. 31st, 2018 (BL Date) in Non-Tariff Restrictions (DGFT).

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Trade Barriers and Implication

Brian Clancey
Stat Publishing

World trade patterns in pulses have changed significantly since India's reinstated import duties on pulses and more strictly applied its requirement that cargoes be fumigated with methyl bromide at time of shipment.

The willingness of the United States to enter into trade disputes with several countries has also contributed to shifting trade patterns because of the imposition of retaliatory import duties on a wide range of U.S. agricultural products.

Trade wears always have unintended consequences. One is to remind importers of the need to have more diversified sources of supply and look at substitute products when that is an option.

China's emergence as the world's largest importer of pulses so far in 2018 is a direct consequence. Demand for peas and other pulses by the country's noodle makers and fractionation industry were already expected to grow. What was not expected was that its livestock feed industry would look for replacements for soybean meal, resulting in a massive jump in demand for field peas to be used to make compound feeds. Prices for peas had dropped because of poor demand from India, making them competitive substitutes for other ingredients used by China's compound feed industry.

During the first half of 2018, Canadian field pea exports to China were almost 972,000 metric tons, more than double the 409,000 shipped during the same six month period the previous calendar year. In the first 11 months of Canada's 2017-18 marketing year, shipments to China reached 1.66 million metric tons, compared to almost 980,000 the previous marketing year. By contrast, shipments to India sank from 1.92 million to almost 335,000 MT.

The fact that the growth in China's demand was not enough to offset the loss of India demand is reflected in the fact total Canadian field pea exports between August and June dropped from 3.87 million to just over 2.78 million metric tons. The net result was residual supplies of field peas in Canada rose from 301,000 to an estimated 550,000 metric tons even though available supplies had dropped by 600,000 metric tons from the previous marketing year.

Diversion of food quality peas into livestock feed markets and growth in the quantity consumed by the fractionation sector is happened at a time when global field production is dropping. Production in 2018 is expected to come in around 12.2 million metric tons, down from 14.2 million last year but close to the recent five year average of 12.22 million metric tons.

Prices are still being affected by the absence of significant demand from the Indian subcontinent, but as stocks tighten relative to prospective demand, prices would be expected to trend upward. Any problems with the coming rabi season crops which stimulate demand from the Indian subcontinent would likely have a significant impact on prices. But, markets do not expect to see any improvement in demand from that region until the last half of 2019 or first half of 2020.

Some business should occur. Even with import duties and tough phytosanitary rules, the landed cost of yellow peas on the Indian subcontinent is below that of both domestic and imported pulses.

Prospects for a significant increase rabi season minimum support prices (MSP) will improve the competitiveness of yellow peas in the region. However, India is countering the problem faced by exporters by giving them a 7% subsidy on the cost and freight price. One of the first reported transactions was the sale of 2,500 metric tons of desi type chickpeas to Bangladesh.

This has a direct impact on Australia's ability to compete for demand on the Indian subcontinent and could discourage that country's farmers from expanding production next year.

India's decision to offer export subsidies while at the same time taking steps to limit imports is part of the current trend toward trade protectionism.

In 1781, Benjamin Franklin wrote, "it is best for every country to leave its trade entirely free from all encumbrances. In general I would only observe that commerce, consisting in a mutual exchange of the necessaries and the conveniences of life, the more free and unrestrained it is the more it flourishes, and the happier are all the nations concerned in it. Most of the restraints put upon it in different countries seem to have been the projects of particulars for their private interest, under the pretense of public good."

That idea was amplified by former U.S. Secretary of State and Nobel Laureate Cordell Hull in his 1948 memoir. Recalling the start of the First World War, he wrote, "I saw that you could not separate the idea of commerce from the idea of war and peace . . . [and] that wars were often largely caused by economic rivalry conducted unfairly . . . to me, unhampered trade dovetailed with peace; high tariffs, trade barriers, and unfair economic competition, with war.

"Though realizing that many other factors were involved, I

reasoned that, if we could get a freer flow of trade -- freer in the sense of fewer discriminations and obstructions -- so that one country would not be deadly jealous of another and the living standards of all countries might rise, thereby eliminating the economic dissatisfaction that breeds war, we might have a reasonable chance for lasting peace."

Duties and quantitative restrictions on imports are not the only issues facing international trade in pulses. A recent European court decision on the plant breeding technique called mutagenesis falls into the category of things we did not know that we did not know. Another way to put it is that the unexpected happens from time to time.

There is a long history of using chemicals or radiation to speed up plant breeding by forcing the genes in the plant to mutate. At first, plant breeders did not know what they might get. Newer techniques let them target specific sets of genes.

Even though the plant varieties you end up with are impossible to tell apart from those created by good old fashioned cross breeding, a court in Europe has decided such plants can be regulated as genetically modified organisms (GMO) just the same as those obtained from the insertion of foreign genes.

In making its decision the court said varieties "obtained by mutagenesis techniques which have conventionally been used in a number of applications and have a long safety record are exempt from those obligations, on the understanding that the Member States are free to subject them, in compliance with EU law, to the obligations laid down by the (GMO) directive or to other obligations."

In a recent vote on whether or not to approve three varieties of GMO corn, Spain, the United Kingdom, and Netherlands voted for the approval. Greece and Italy were among the countries voting against the approvals. Germany and Belgium were among the countries which did not vote. To the extent this might reflect sentiment toward pulse varieties created through mutagenesis, the risk of future problems seem greatest in Italy and Greece; lowest in Spain, the United Kingdom and Netherlands; and moderate in Germany and Belgium.

Following the European court decision, Japan started looking at mutagenesis, raising the prospect more countries will follow. This raises the prospect of new trade barriers.

But, as can be seen from what has happened in field pea and feed ingredient markets, tariffs and other barriers to trade may have an immediate impact on some countries. But, it also results in a change in trade patterns and the types of products used by various industries. This creates opportunities, though they may be weighted more towards those which tend to be more economical and versatile.

PRODUCTION	**2017**	**2018**	**Average**
BEANS	22,814,000	21,338,000	22,138,600
CHICKPEAS	13,973,600	14,748,900	13,052,796
LENTILS	6,113,000	6,099,000	5,585,800
PEAS	14,159,000	12,208,000	12,224,800
TOTAL	**57,059,600**	**54,393,900**	**53,001,996**
TOTAL SUPPLY	**2017**	**2018**	**Average**
BEANS	23,600,000	22,248,000	22,928,400
CHICKPEAS	14,230,600	15,001,900	13,491,796
LENTILS	6,601,000	7,113,000	6,201,000
PEAS	14,889,000	13,258,000	12,730,800
TOTAL	**59,320,600**	**57,620,900**	**55,351,996**
INFERRED USE	**2017**	**2018**	**Average**
BEANS	22,690,000	21,697,000	22,116,800
CHICKPEAS	13,977,600	14,559,900	13,090,996
LENTILS	5,587,000	6,198,000	5,526,800
PEAS	13,839,000	12,548,000	12,068,800
TOTAL	**56,093,600**	**55,002,900**	**52,803,396**
ENDING STOCKS	**2017**	**2018**	**Average**
BEANS	910,000	551,000	811,600
CHICKPEAS	253,000	442,000	400,800
LENTILS	1,014,000	915,000	674,200
PEAS	1,050,000	710,000	662,000
TOTAL	**3,227,000**	**2,618,000**	**2,548,600**
BASED on historical data from the FAO and other country specific data sources			
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"Pigeon Pea" - The Pulse of Choice

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An Indian Thali from North to South, East to West is almost next to impossible without Tur dal.

Interestingly in India, should you ask a homemaker her dal of choice- 95% of people will vote only for Tur Dal (Pigeon Pea). The texture and richness of the taste of tur dal is something all Indians love and is their favourite dal, the most integral part of every thali.

Pigeon pea, known by several names such as red gram, tur, Angola pea, Congo pea, yellow dhal and oil dhal, is one of the major grain legume crops of the tropics and sub-tropics. It is a favourite crop of small holder dryland farmers because it can grow well under subsistence level of agriculture and provides nutritive food, fodder, and fuel wood. It also improves soil by fixing atmospheric nitrogen. Pigeon peas are in some areas an important crop for green manure, providing up to 90 kg nitrogen per hectare.The woody stems of pigeon peas can also be used as firewood, fencing and thatch.

India by far is the largest pigeon pea producer, where it is consumed as decorticated split peas, popularly called as 'dhal'. It is interesting to see every community in India, savours the tur dal. In India, split pigeon peas, called *tur* in Marathi, *toor dal* or 'arhar in Hindi and *arehar ki dal* in Urdu, *kandhi pappu* in Telgu, *thuvara parippa* in Kerala and *thuvaram paruppu* in Tamil Nadu, *togari bele* in Kannada are one of the most popular pulses, being an important source of protein in a mostly vegetarian diet. In regions where it grows, fresh young pods are eaten as a vegetable in dishes such as *sambar*. In Ethopia, not only the pods, but also the young shoots and leaves are cooked and eaten. Pigeon peas are both a food crop (dried peas, flour, or green vegetable peas) and a forage/cover crop. In combination with Cereals, pigeon peas make a well-balanced meal and hence are favoured by nutritionists as an essential ingredient for balanced diets. The dried peas may be sprouted briefly, then cooked, for a flavor different from the green or dried peas. Sprouting also enhances the digestibility of dried pigeon peas via the reduction of indigestible sugars that would otherwise remain in the cooked dried peas.

It is an important ingredient of animal feed used in West Africa, especially in Nigeria, where it is also grown. Leaves, pods, seeds and the residues of seed processing are used to feed all kinds of livestock

Let us begin by opening the Pandoras box, which has an immense wealth of traditional recipes: Beginning from Gujrati Mithi Dal, or the famous Dal Dhokli (A combination of Tur dal with uncooked roti pieces), to the famous Puran poli, there aren't a single day without its use. Some other western region-specific dishes would be the famous Parsee Dhanshak and Lagan ni Poli. In the Muslim community items like Dal Ghost, Toovar dal biryani or Pulao, Dal Chawal Palidu a Bohri delicacy to smoked dal samosas are all fantasized around this glorious dal. In South Indian the delicious Sambhar eaten either with rice or idlis or dosa is one of the most nourishing meals. Elaborate researches have described Rasam and Sambhar as anti-carcinogenic foods. The Bengali Arhar jeera dal is a mouth-watering preparation, simple and easy to digest. In northern India- every dhabha on the highway beholds a standard order of dal tadka or Dal fry, both.Toor dal based eaten with fresh parathas and with this vast heritage and its roots in Indian Tradition, let us have a closer look at its nutritional properties.

Pigeon peas- Description & Nutrition facts

Pigeon peas are small, round to oval, mostly cherry-red coloured seeds in the legume family. However, they come in other colour variations like yellow, brown, variegated, etc. Pigeon peas are thought to have originated in India where they are recognized as red gram, and currently grown as pulse crop throughout the tropics and subtropics of Asia, and sub-Saharan Africa for their nutritious dry seeds.

Botanically, the seeds of pigeon pea belong to: • Family: "Fabaceae" • Genus: Cajanu • Scientific name: Cajanus cajan (L.) Millsp.

The pigeon pea is a drought-tolerant, perennial, but mostly cultivated as annual, erect shrub. It grows well in wide range soil types, varying from sandy to heavy loams. Small, rust-brown to yellow flowers appear in racemes, which develop into elongated fruit pods, enclosing 2 to 8 seeds separated from each other in the pod by slight depressions.

The pods, like in other legumes, opens along a seam on either side. Raw green seeds are ovoid, measure 6-8 mm in diameter and turn brown, red, patterned black as they dry, depending on the cultivar type.

Protein deficiency and Pulses as Sustainable Solutions

"93 per cent of Indians are unaware of their ideal protein requirement and Indian vegetarian diets are worst affected with 84 per cent being deficient in protein, while 65 per cent of Indian non-vegetarian diets too deficient in protein," explains the findings of another recent study led by InBody -- a global leader

in body composition analysis -- in association with France based IPSOS global market research.

Protein deficiency is an epidemic that is gripping us Indian .In a recent study ,it was researched Over 70 per cent of Indians have poor muscle development; characterized by lower muscle mass and protein content .In a vegetarian country Like ours It is imperative we emphasise on increasing our proteins through all legumes and diary. However Whilst Pigeon pea and all pulses have higher proteins they lack Methionine which is required for Growth and tissue repair. Complementing pulses with cereals in proportions 1:5 is important to improve quality of protein. Common examples we eat are Idli sambhar, Dal Rice, Dal Dhokli

Health benefits of Pigeon peas

A vegan Protein : As in other beans and peas, pigeon peas too are moderate sources of vegetarian protein. 100 grams of dry pulse contain 343 calories, and 21.70 g or 39% of recommended daily values of protein.

To translate it into every day plate Every Bowl (1serving size of medium density dal or 30 gm of dry Weight may contain 120kcals, 8gms of protein and 6gms of dietary fiber. To improve and complete the (vegan plant protein) amino acid composition it is best advised to consume the Dal with any cereal source like rice or, chapatis, idli or dosa.

Glycemic Index and Glycemic Load of Tuar Dal : The glycemic Load of the Dal is 15 where in the glycemic loads low range. It is suitable for weight management, Diabetes and Hypertension. The low glycemic Index creates a feeling of fullness and satiety there by blunting the glucose curve response.

Natural source Dietary fiber of Tuar Dal : Red gram peas contain good amounts of dietary fiber; provide 15 g or 39% of fiber per 100 grams Dietary fiber works as a bulk laxative, which thereby protect the colon mucosa by decreasing its exposure time to toxic substances as well as by binding to cancer-causing chemicals in the colon.

Also, dietary fiber has shown to reduce blood cholesterol levels by bringing down reabsorption of cholesterol-binding bile acids in the colon.

Rich in Antioxidants of Tuar Dal : Total isoflavone antioxidants in red gram peas is 0.58 mg. Isoflavones have been found to reduce post-menopausal cancers and osteoporosis.

Isoflavones are polyphenolic secondary plant metabolites that are produced primarily from members of the *Leguminosae*. Biosynthesis of isoflavones is part of the phenyl-propanoid pathway by which flavonoids are synthesized. However, isoflavone synthase, an enzyme involved in the conversion of flavanone precursors to isoflavones, is expressed in legumes which may alleviate as a phyto estrogen and may have a cancer protective role.

Gluten free food : Pigeon peas are gluten-free food ingredients. They particularly are preferred as gluten-free food alternatives in gluten-allergy and celiac disease patients.

It may be of value to know that most Gluten intolerant individuals may be also intolerant to Diary and Milk.In such cases the Protein content drastically is reduced if one is a vegetarian. Pulses actually help plug in this deficit.

Vitamins and Minerals : They compose good amounts of B-complex vitamins like folates, thiamine, pyridoxine, pantothenic acid, riboflavin and niacin. Most of these vitamins work as co-factors for the enzymes in carbohydrate, protein and fat metabolism.

Dry seeds carry 456 mg or 114% of daily required value folate. Raw, green pigeon peas contain 173 mg of folates. Folate, together with vitamin B-12, is one of the essential co-factors for DNA synthesis and cell division. Adequate folate in the diet around conception and during the pregnancy may help prevent neural-tube defects in the babies.

While raw green pigeon peas hold 39 mg or 65% of DV of vitamin-C, dry peas do not contain any of this vitamin. Vitamin-C is a water-soluble antioxidant which helps in boosting immunity, and fight against the oxygen-induced free radicals in the human body.

Furthermore, they are incredible sources for several essential minerals. 100 g of dry pigeon peas hold copper-117%, iron-65%, manganese-78%, phosphorus-52%, selenium-15%, calcium-13%, and zinc-25%. Both copper and iron take part in the production of blood cells in the human body.

Moreover, they are also very good sources of potassium. 100 grams hold, 1392 mg or 30%. Potassium is present inside cell and body fluids, which counters pressing effects of sodium on the heart and thereby decreases blood pressure.

Contraindications

Tur dal has a number of health benefits from weight loss, to decreasing blood pressure, maintaining heart health, reduce postmenopausal cancer and osteoporosis, and providing adequate nutrients, vitamins and minerals, .However consumption in excess can lead to certain problems.

Flatulence- Tur contains oligosaccharides, a carbohydrate which is difficult to digest, which can cause flatulence.

Practical Nutrition Tip

To reduce Flatulence also soak the dal for 3-4 hours discard the water and wash 2-3 times before using it.

Whilst Meal Planning ,schedule the dal as a lunch option rather than a dinner option especially for those with individuals having gastrointestinal irritation.Seasonings like .Asafoetida, garlic and ajwain usually used as Tadka to the dal help reducing the flatulence.

Reduce absorption of minerals such as iron and zinc- it contains high levels of “anti-nutrients” such as phytate, tannin and phenol, which can limit the body’s absorption of iron and zinc.

Take home message

There is potential importance of pigeon pea and its role in improved nutrition and health. Being a staple pulse of India, it is the major source of protein for the Indian population. It fills the gap of protein deficiency through its affordable cost and also being consumed with a cereal, usually, thereby providing good quality of protein. It benefits in cardiovascular diseases, weight loss, diabetes, anaemia, cancer and also has several other benefits of improving the soil, providing nutritive food, fodder and fuel wood. Hence it can be considered a “pulse of choice”.

CARROT CAKE WITH OAT FLAKES AND LENTILS

6 Serves 50min

INGREDIENTS
250 gr. - Carrots, grated
200 gr. - Red lentils, cooked and drained
150 gr. - Flour
3 - Eggs
100 gr. - Oat flakes
125 gr. - Brown sugar
100 gr. - Butter at room temperature
2 Tsp. - Baking powder
1 Tsp. - Vanilla essence
5 gr. - Salt
Jam or marmalade

ICING
200 gr. - Cream cheese
100 gr. - Butter at room temperature
100 gr. - Icing sugar

PREPARATION
Pre-heat oven at 170ºC. Butter a 23 cm cake pan and cover the bottom with parchment paper.
Sift flour and baking powder, set aside.
Wisk together sugar and butter until fluffy, add the eggs, one at a time and vanilla essence. Incorporate the cooked red lentils, mix well and fold in the grated carrots and the oat flakes. Add the flour mixture and beat until incorporated. Fill the pan with the batter, bake for about 30 minutes or until a toothpick inserted in the center comes out clean.
Remove from the oven, let it cool. Remove from the pan.
In a food mixer beat butter and cream cheese until blended, add the vanilla essence. Add the icing sugar beat on low speed, until incorporated. When the cake is totally cold cut in half and spread with the desired jam or marmalade. Cover and decorate with the icing.

DRY PEAS AND OAT COOKIES

4 Serves 35min

INGREDIENTS
200 gr. - Split peas, cooked
200 gr. - Oatmeal
100 gr. - Wheat flour
200 gr. - Brown sugar
2 - Eggs
100 gr. - Chocolate
150 gr. - Butter
1 Tsp. - Baking powder
1 Tsp. - Ground cinnamon
1 Tsp - Vanilla essence

PREPARATION
Pre-heat oven at 170ºC. Prepare a baking tray covered with parchment paper.
Puree peas with the eggs, set aside. Melt chocolate and butter in a bowl over a saucepan filled with hot water. Once melted, set aside and let it cool at room temperature
Sift flour, cinnamon and baking powder.
In a large bowl beat in sugar and puree. Add oatmeal, vanilla essence and the chocolate and the melted chocolate-butter. Mix well. Add the flour. Mix all together until it becomes homogenous dough.
Take small pieces of the dough and shape them into ball of about 3 cm place them on the prepared baking tray. Bake for about 20 minutes or until light golden.
Remove from the oven, let them cool before serving.

CHEESE AND CHICKPEAS BITES

6 Serves 35min

INGREDIENTS
250 gr. - Chickpeas, cooked
250 gr. - Cream cheese
50 gr. - Roquefort type cheese
2 - Eggs
50 ml. - Olive oil
150 gr. - Flour
1 Tbsp. - Oregano
1 Tsp. - Baking powder
1/2 Tsp. - Salt
A pinch of nutmeg

PREPARATION
Preheat oven at 180º C. Line a baking tray with parchment paper. Pure chickpeas, cheese, eggs and olive oil. Transfer to a large bowl. Add oregano, salt, baking powder and flour stir until all the ingredients are well incorporated.
Using two teaspoons, place small mounds onto the baking tray, spacing them about three centimeters apart. Bake for about 20 to 25 minutes or until nice and golden. Remove from the oven and let them cool.

Tip: You may cover the mounds with grated cheese before baking.

LUMACONI FILLED WITH BEANS AND SPINACH

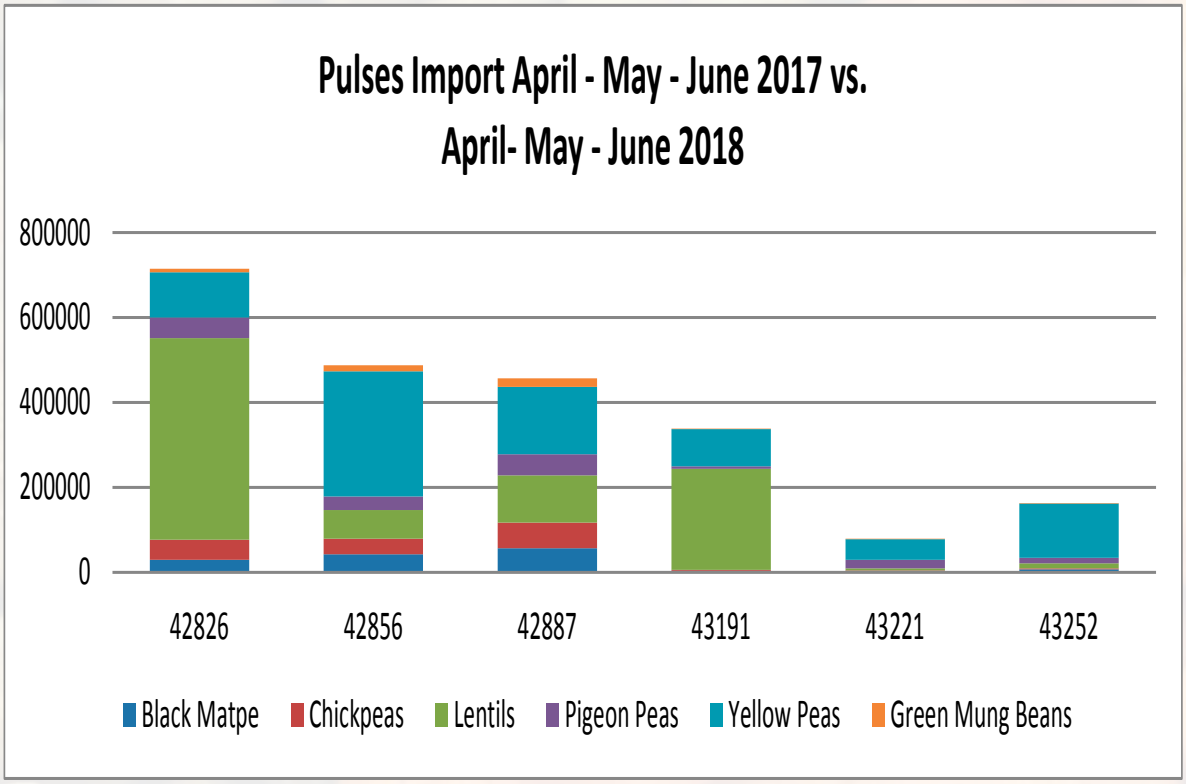
4 Serves 40min

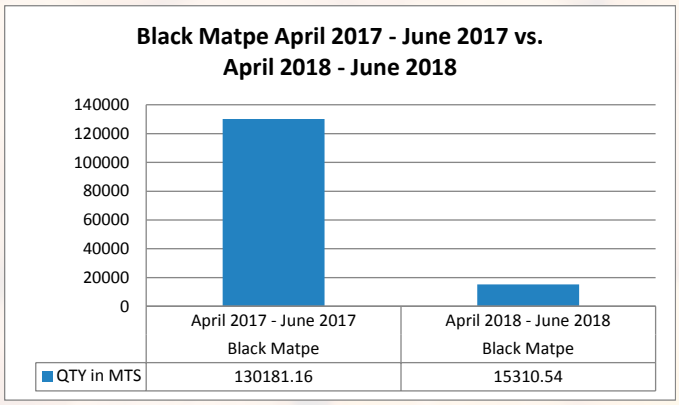
INGREDIENTS
300 gr. – Lumaconi (pasta shells) (approx. 5/person)
150 gr. - Beans, Navy or Great northern, cooked
300 gr. - Spinach, leaves
2 Tbsp. - Olive oil
200 gr. - Mascarpone
1 - Egg
Salt, pepper, nutmeg
100 gr. Parmesan cheese, grated
100 ml. - Tomato, purée

PREPARATION
Cook the lumaconi (pasta shells), follow the manufacturer's instructions, they should be "aldente"(pasta that is cooked to be firm to the bite). Drain the pasta.
Sautee the spinach with the olive oil for about two minutes, set aside.
Puree: egg, spinach, beans, Mascarpone, salt, pepper and nutmeg. Fill a piping bag with the mixture. Stuff the lumaconi (pasta shells). Brush a baking tray with olive oil and place the filled lumaconi (pasta shells), in the tray. Sprinkle the grated Parmesan cheese on top. Bake at 180ºC until light golden.

Serve, decorate with tomato puree.

Pulses Import Statistics

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80000
60000
40000
20000
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April 2017 - June 2017
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April 2018 - June 2018
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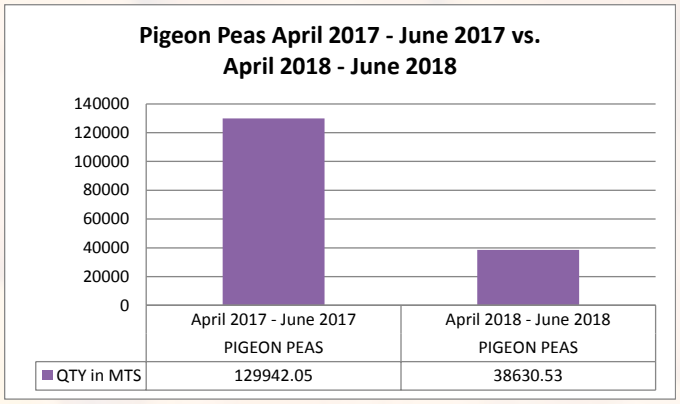
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PIGEON PEAS
April 2018 - June 2018
PIGEON PEAS
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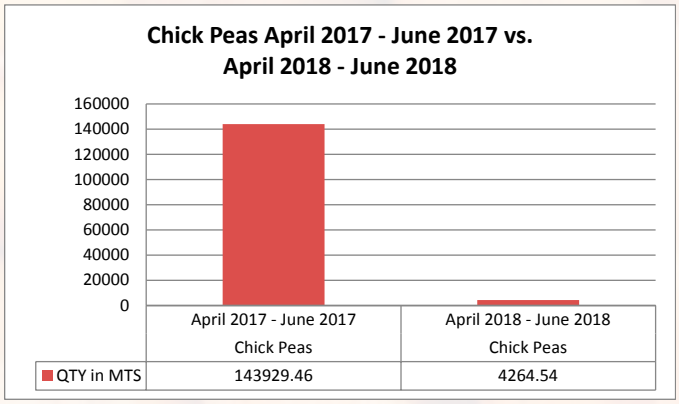
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April 2018 - June 2018
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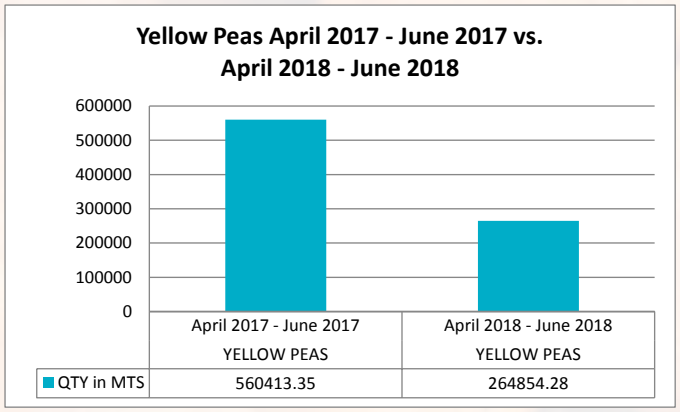
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April 2018 - June 2018
YELLOW PEAS
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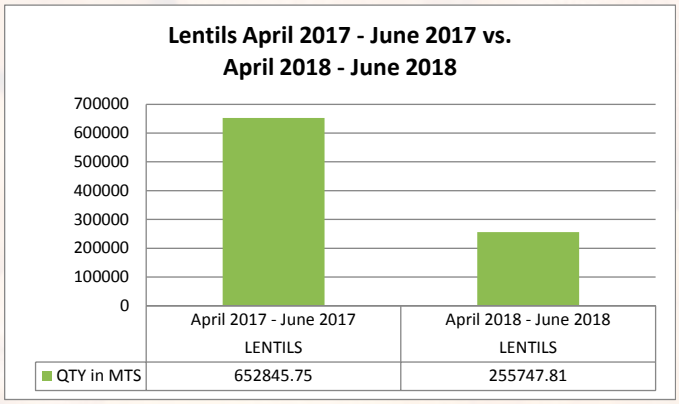
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LENTILS
QTY in MTS
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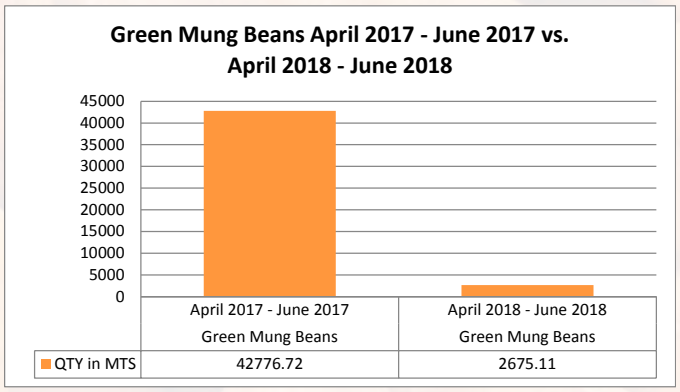
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Green Mung Beans
April 2018 - June 2018
Green Mung Beans
QTY in MTS
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2675.11

Agricultural Statistics Division
Directorate of Economics & Statistics
Department of Agriculture, Cooperation and Farmers Welfare
Fourth Advance Estimates of Production of Foodgrains for 2017-18

As on : 28.08.2018

Million Tonnes

Crop	Season	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 4th Advance Estimates	2016-17 Final Estimates	2017-18 Targets	2017-18 4th Advance Estimates
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20
Rice	Kharif	78.62	72.23	78.27	80.17	82.66	84.91	75.92	80.65	92.78	92.37	91.50	91.39	91.41	96.39	96.30	94.50	97.50
	Rabi	9.91	10.90	13.52	13.18	14.03	14.27	13.18	15.33	12.52	12.87	15.15	14.09	13.00	13.76	13.40	14.00	15.41
	Total	88.53	83.13	91.79	93.36	96.69	99.18	89.09	95.98	105.30	105.24	106.65	105.48	104.41	110.15	109.70	108.50	112.91
Wheat	Rabi	72.16	68.64	69.35	75.81	78.57	80.68	80.80	86.87	94.88	93.51	95.85	86.53	92.29	98.38	98.51	97.50	99.70
Jowar	Kharif	4.84	4.04	4.07	3.71	4.11	3.05	2.76	3.44	3.29	2.84	2.39	2.30	1.82	1.85	1.96	2.75	2.10
	Rabi	1.84	3.20	3.56	3.44	3.81	4.19	3.93	3.56	2.69	2.44	3.15	3.15	2.42	2.72	2.60	3.00	2.85
	Total	6.68	7.24	7.63	7.15	7.93	7.25	6.70	7.00	5.98	5.28	5.54	5.45	4.24	4.57	4.57	5.75	4.95
Bajra	Kharif	12.11	7.93	7.68	8.42	9.97	8.89	6.51	10.37	10.28	8.74	9.25	9.18	8.07	9.80	9.73	9.50	9.13
Maize	Kharif	12.73	11.48	12.16	11.56	15.11	14.12	12.29	16.64	16.49	16.19	17.14	17.01	16.05	19.24	18.92	19.00	20.24
	Rabi	2.25	2.70	2.55	3.54	3.85	5.61	4.43	5.09	5.27	6.06	7.11	7.16	6.51	7.02	6.98	7.00	8.47
	Total	14.98	14.17	14.71	15.10	18.96	19.73	16.72	21.73	21.76	22.26	24.26	24.17	22.57	26.26	25.90	26.00	28.72
Ragi	Kharif	1.97	2.43	2.35	1.44	2.15	2.04	1.89	2.19	1.93	1.57	1.98	2.06	1.82	1.40	1.39	2.00	1.98
Small Millets	Kharif	0.56	0.48	0.47	0.48	0.55	0.44	0.38	0.44	0.45	0.44	0.43	0.39	0.39	0.42	0.44	0.50	0.44
Barley	Rabi	1.30	1.21	1.22	1.33	1.20	1.69	1.35	1.66	1.62	1.75	1.83	1.61	1.44	1.74	1.75	1.90	1.77
Nutri/Coarse Cereals	Kharif	32.22	26.36	26.74	25.61	31.89	28.54	23.83	33.08	32.44	29.79	31.20	30.94	28.15	32.71	32.44	33.75	33.89
	Rabi	5.39	7.10	7.33	8.31	8.86	11.49	9.72	10.32	9.58	10.25	12.09	11.92	10.37	11.48	11.33	11.90	13.10
	Total	37.60	33.46	34.07	33.92	40.75	40.04	33.55	43.40	42.01	40.04	43.29	42.86	38.52	44.19	43.77	45.65	46.99
Cereals	Kharif	110.84	98.59	105.01	105.78	114.55	113.45	99.75	113.73	125.22	122.16	122.70	122.34	119.56	129.10	128.74	128.25	131.38
	Rabi	87.45	86.64	90.21	97.30	101.46	106.45	103.70	112.52	116.98	116.63	123.09	112.53	115.66	123.63	123.24	123.40	128.21
	Total	198.28	185.23	195.22	203.08	216.01	219.90	203.45	226.25	242.20	238.79	245.79	234.87	235.22	252.73	251.98	251.65	259.59
Tur	Kharif	2.36	2.35	2.74	2.31	3.08	2.27	2.46	2.86	2.65	3.02	3.17	2.81	2.56	4.78	4.87	4.25	4.25
Gram	Rabi	5.72	5.47	5.60	6.33	5.75	7.06	7.48	8.22	7.70	8.83	9.53	7.33	7.06	9.33	9.38	9.75	11.23
Urad	Kharif	1.20	0.95	0.90	0.94	1.12	0.84	0.81	1.40	1.23	1.48	1.15	1.28	1.25	2.17	2.18	1.85	2.84
	Rabi	0.27	0.38	0.35	0.50	0.34	0.33	0.42	0.36	0.53	0.47	0.55	0.68	0.70	0.63	0.66	0.75	0.73
	Total	1.47	1.33	1.25	1.44	1.46	1.17	1.24	1.76	1.77	1.95	1.70	1.96	1.95	2.80	2.83	2.60	3.56
Moong	Kharif	1.43	0.81	0.69	0.84	1.25	0.78	0.44	1.53	1.24	0.79	0.96	0.87	1.00	1.62	1.64	1.65	1.44
	Rabi	0.28	0.25	0.26	0.28	0.27	0.26	0.25	0.27	0.40	0.40	0.65	0.64	0.59	0.55	0.52	0.65	0.57
	Total	1.70	1.06	0.95	1.12	1.52	1.03	0.69	1.80	1.63	1.19	1.61	1.50	1.59	2.16	2.17	2.30	2.01
Lentil	Rabi	1.04	0.99	0.95	0.91	0.81	0.95	1.03	0.94	1.06	1.13	1.02	1.04	0.98	*	1.22	*	1.61
Other Kharif Pulses	Kharif	1.18	0.61	0.54	0.70	0.96	0.80	0.49	1.33	0.93	0.62	0.71	0.77	0.72	0.86	0.89	1.00	0.82
Other Rabi Pulses	Rabi	1.44	1.32	1.36	1.37	1.19	1.28	1.28	1.33	1.34	1.60	1.51	1.74	1.50	3.02	1.77	3.00	1.76
Total Pulses	Kharif	6.16	4.72	4.86	4.80	6.40	4.69	4.20	7.12	6.06	5.91	5.99	5.73	5.53	9.42	9.58	8.75	9.34
	Rabi	8.74	8.41	8.52	9.40	8.36	9.88	10.46	11.12	11.03	12.43	13.25	11.42	10.82	13.53	13.55	14.15	15.89
	Total	14.91	13.13	13.38	14.20	14.76	14.57	14.66	18.24	17.09	18.34	19.25	17.15	16.35	22.95	23.13	22.90	25.23
Total Foodgrains	Kharif	117.00	103.31	109.87	110.58	120.96	118.14	103.95	120.85	131.27	128.07	128.69	128.06	125.09	138.52	138.33	137.00	140.73
	Rabi	96.19	95.05	98.73	106.71	109.82	116.33	114.15	123.64	128.01	129.06	136.35	123.96	126.47	137.16	136.78	137.55	144.10
	Total	213.19	198.36	208.60	217.28	230.78	234.47	218.11	244.49	259.29	257.13	265.04	252.02	251.57	275.68	275.11	274.55	284.83

* Included in Other Rabi Pulses.