

Fruit Crop Research for Export – Current Status and Opportunities

Dr. S D Sawant

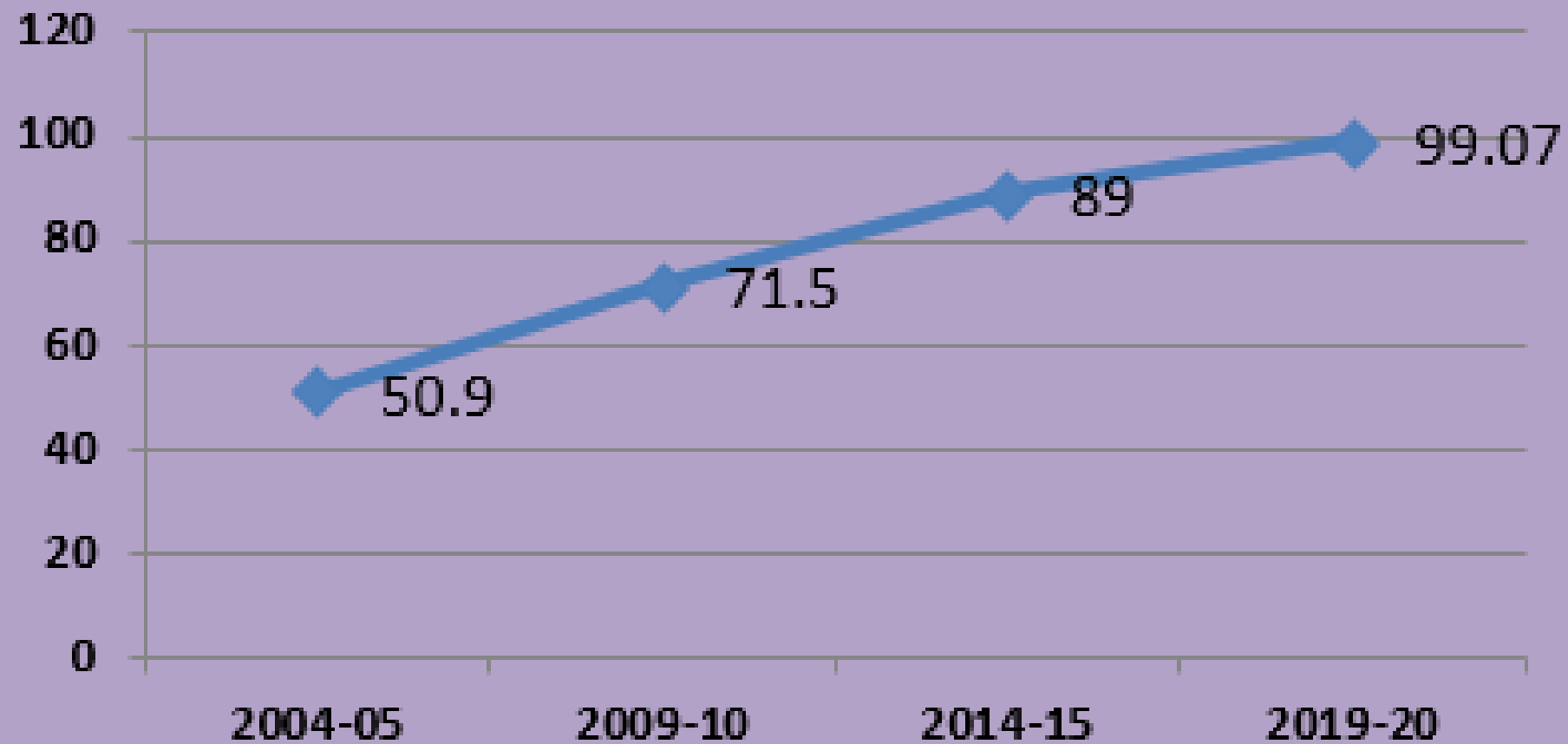
Vice Chancellor

Dr Balasaheb Sawant Konkan Krishi Vidyapeeth, Daploli

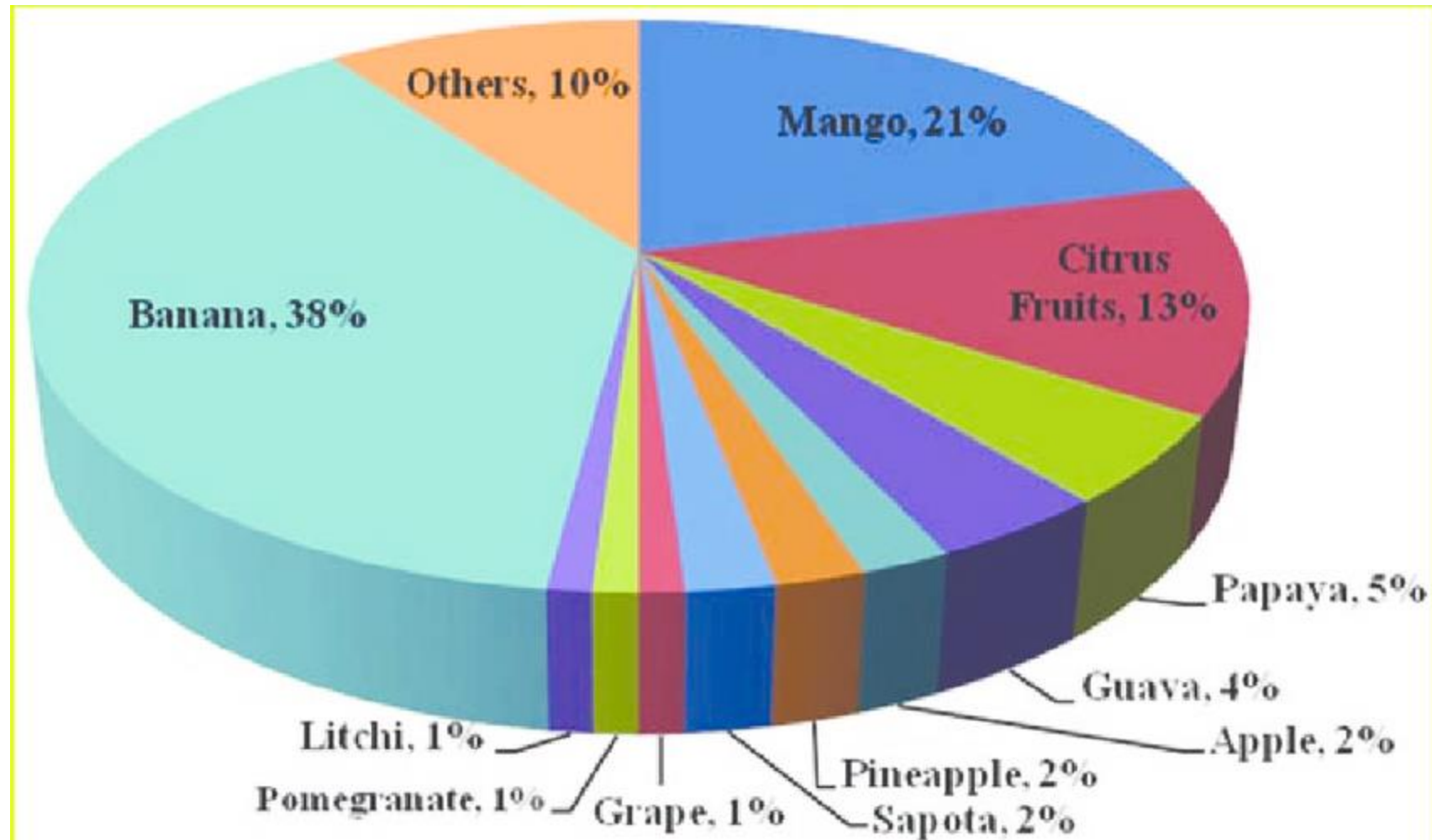
Dist. Ratnagiri 415712 MS

- **India is second largest fruit producer after China**
- **Has 10.9% share in total fruit production of the world**
- **Has about 30% share in production of tropical fruits**
- **Only 0.5% share in global fruit export**
- **Worldwide most traded tropical fruits are Banana, Pineapple, Mango, and Avacado**
- **India is a top producer of Banana and Mango**

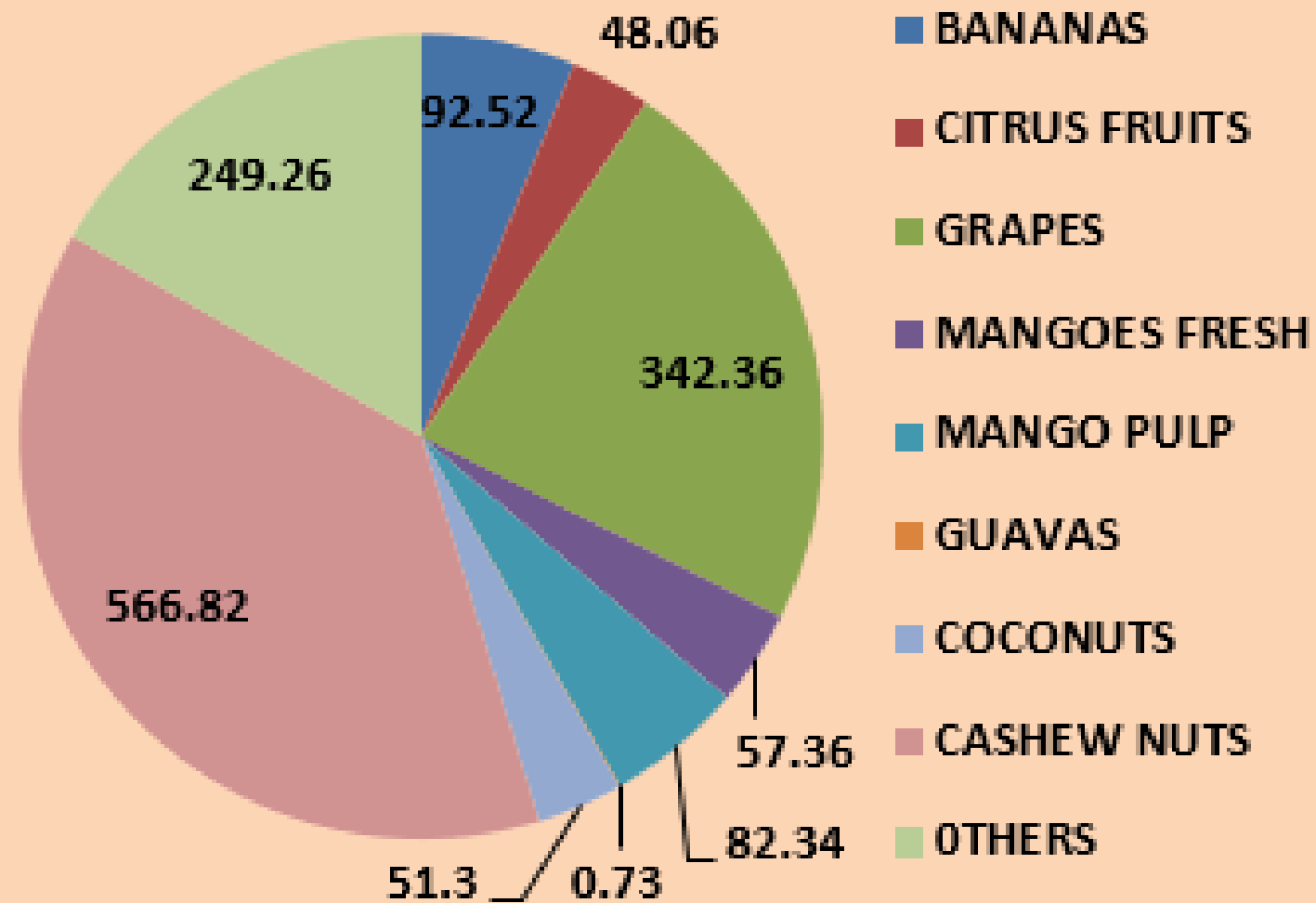
Fruits Production-India (in Million MT)



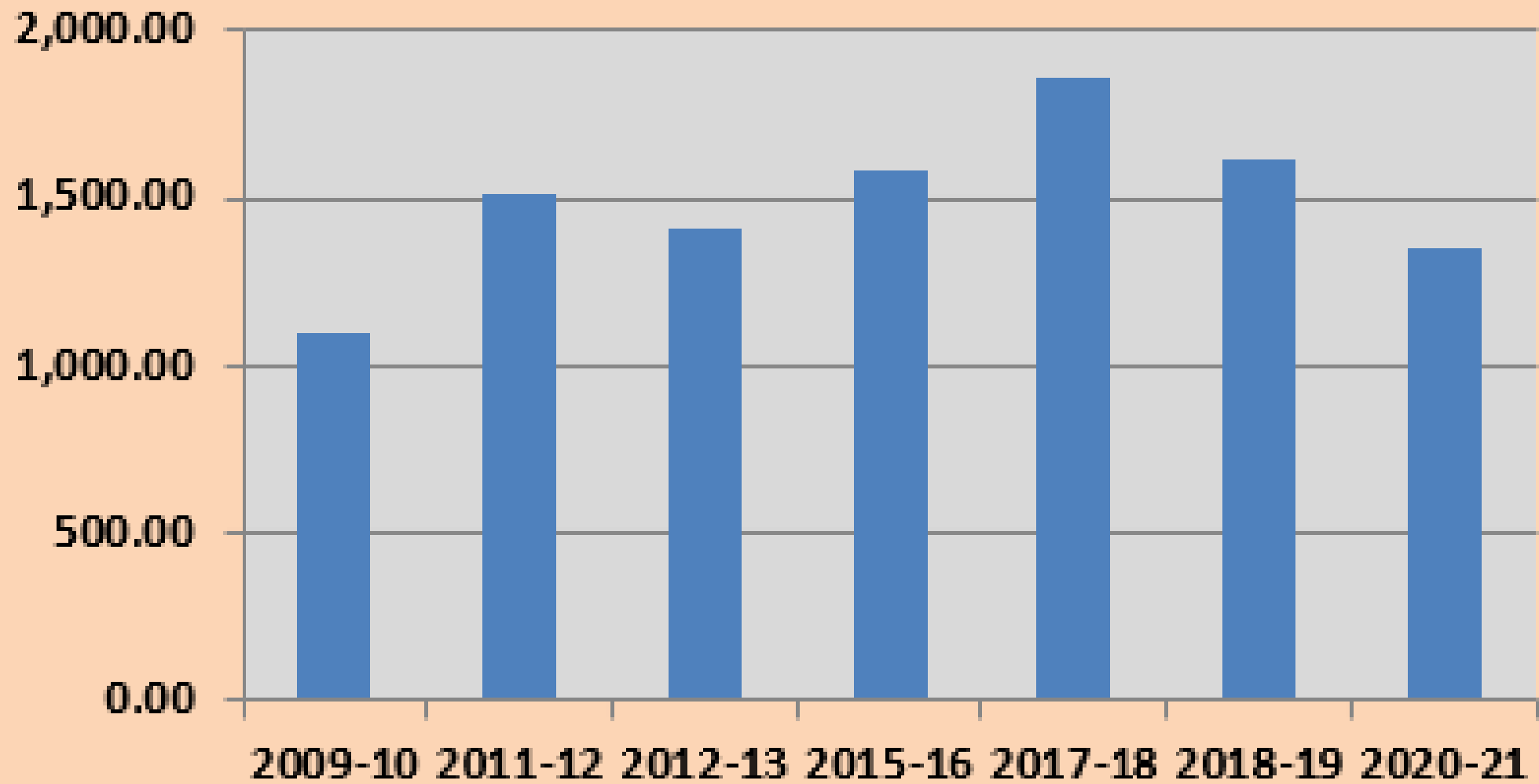
Production share of different fruits in India



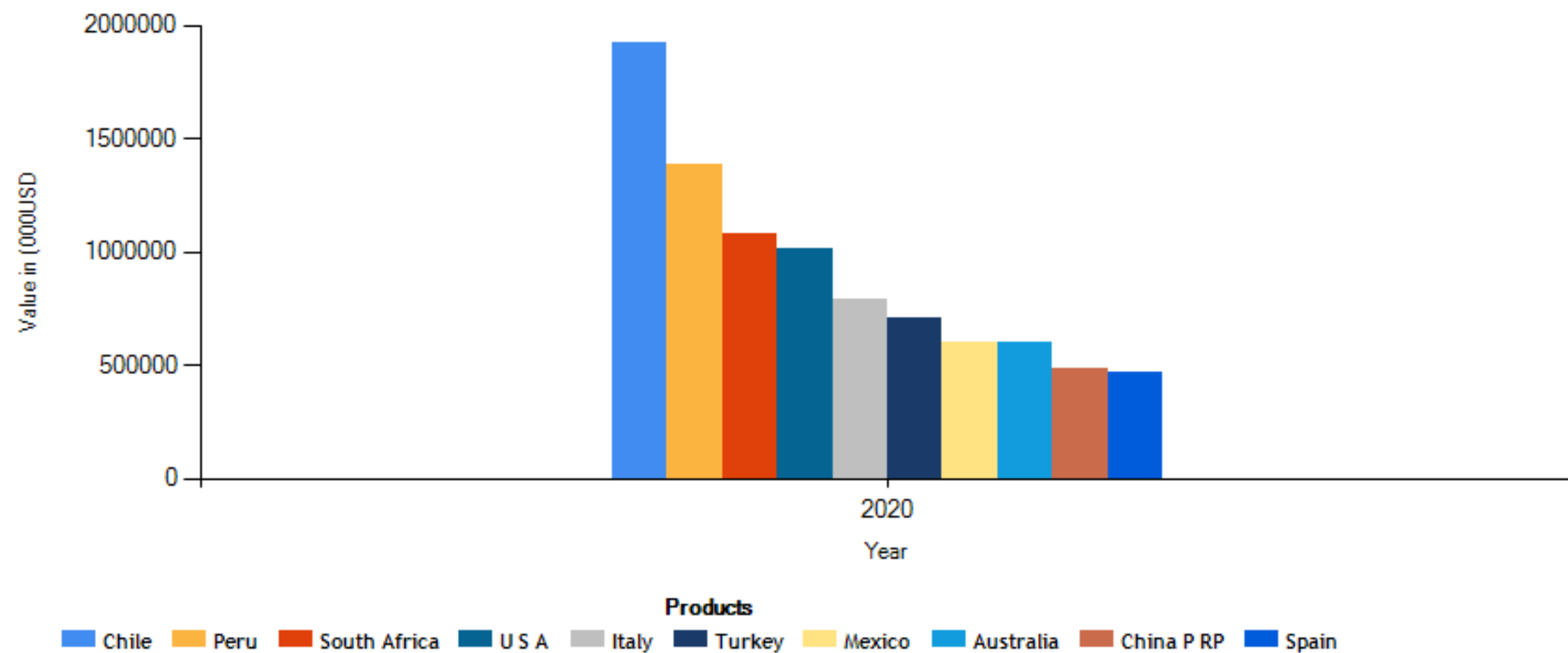
**SHARE OF DIFFERENT FRUITS EXPORTED FROM INDIA
IN 2019-20 (IN US\$ MILLION)**



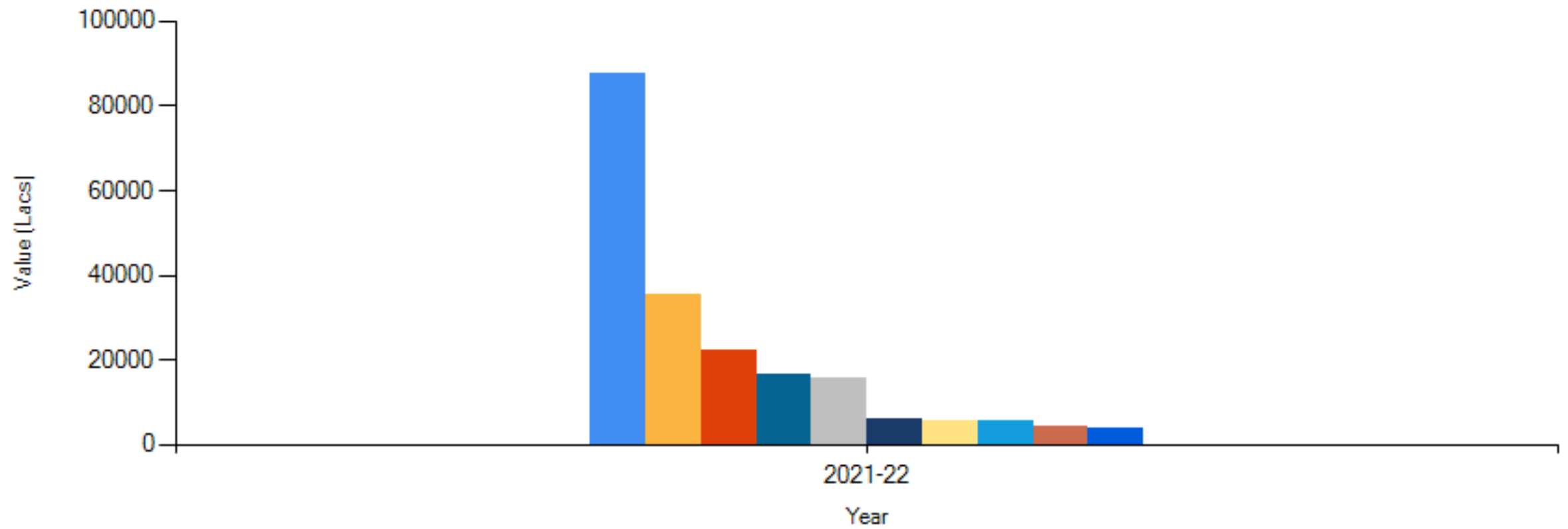
Fruits Export-India (IN US\$ MILLION)



Top 10 Exporting country for product : Fresh Grapes



Exports From India To Top 10 Countries in Fresh Grapes



Products

NETHERLAND BANGLADESH PR RUSSIA U K U ARAB EMTS GERMANY NEPAL SAUDI ARAB MALAYSIA THAILAND

Grape Export started during early 90s

Table grapes were not available in Europe during April-May

Major research helped export

- **Introduction of Dogridge rootstock**
- **Standardization of schedules of growth regulators**
- **Introduction of Varieties : Flame Seedless, 2A clone, Crimson Seedless, Red Globe etc.**
- **Electrostatic spraying system**
- **Establishment of Referral Lab for residue monitoring**
- **Bio-intensive disease management**
- **Location specific Disease Management advisory based on weather information.**
- **Plastic cover for protection from rain and hail storms**





AATTRRA 79

Both are patented varieties
Rain resistance
Bold and crispy berries
Less or no Growth regulators needed



AARRA 15

Grapes

As mentioned by exporter from Chile

Nutrition Facts

Serving Size 138g

Amount Per Serving

Calories 90 Calories from Fat 0

% Daily Value*

Total Fat 1g 2%

Saturated Fat 0g 0%

Trans Fat 0g

Cholesterol 0mg 0%

Sodium 0mg 0%

Total Carbohydrate 24g 8%

Dietary Fiber 1g 4%

Sugars 23g

Protein 23g

Vitamin A 2% Vitamin C 25%

Calcium 2% Iron 2%

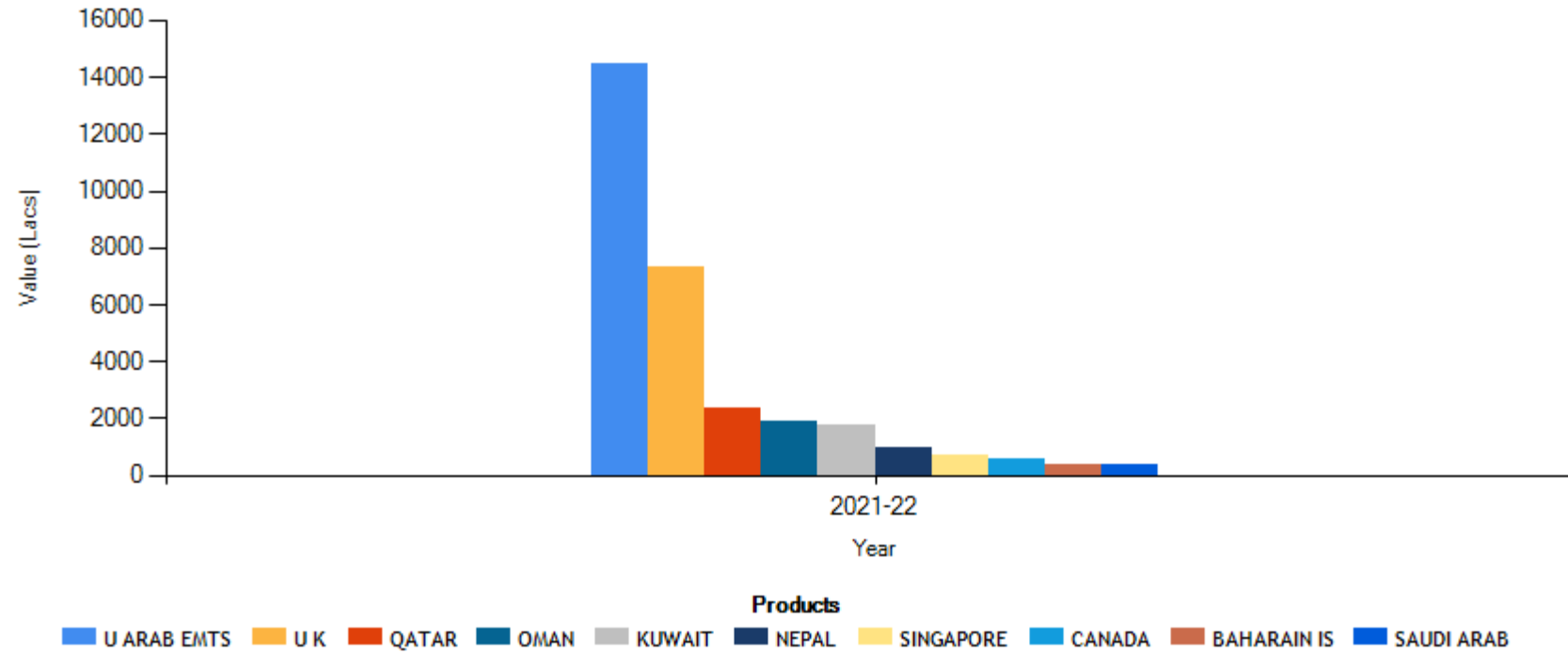
*Percent Daily Values are based on 2,000 calories diet.

Grapes contain polyphenols, which work against free radicals, hence are antioxidants

Grapes also contain vitamins K, B and Copper

Regular grapes consumption improves eye health by protecting retina

Exports From India To Top 10 Countries in Fresh Mangoes



International Mango Trade

- International Demand : 14.45 Lakh MT

Imp. Mango importers	एकुण आयात (लाख मे.टन)	भारतातून निर्यात (मे.टन)
USA	4.64	801
Netherlands	1.66	21.47
UAE	1.03	23543
England	0.80	3728
Germany	0.83	136.50
Saudi Arabia	0.64	2671
France	0.58	224

Export of Mango from India

Country	2018-19	2019-20	2020-21	2021-22	2022-23
UAE	16,398.18	15,654.75	12,756.4	12,923.69	9,299.19
England	4,014.06	4,344.99	0	0	0
Oman	3,618.13	3,596.93	1,478.27	1,693.15	919.50
Qatar	2,877.58	2,680.42	1,762.11	2,116.64	1,060.08
USA	951.34	1,077.15	1.45	16.51	701.38
Bangladesh	4,813.62	2,998.11	0	0	0
Kuwait	1,057.03	1,160.40	515.96	773.27	658.29
Saudi Arabia	1,638.53	1,485.43	166.41	337.37	93.63
Nepal	6,975.07	11,962.54	384.89	4,659.48	0
Singapore	1,125.44	682.05	373.41	350.24	234.53
Other	3041.02	4015.89	1745.35	3441.65	2831.89
Total	46,510	49,659	21,034	26,312	15798.49

Source : DGCIS Calcuta

Varietywise export from India 2020-21

अ.क्र.	Variety	2020-21		2021-22		2022-23	
		Export (MT)	Value (Rs. Lakh)	Export (MT)	Value (Rs. Lakh)	Export (MT)	Value (Rs. Lakh)
1.	Alphonso	3,129.88	4,421.65	3,718.13	6,880.76	2,394.86	4,887.24
2.	Banganapalli	585.86	658.70	1,295.48	1,481.26	484.91	722.71
3.	Chaunsa	6.00	9.95	7.65	11.14	9.34	13.59
4.	Dasheri	3.39	5.89	41.60	51.03	12.05	21.94
5.	Langra	7.57	17.69	47.59	64.09	25.80	46.82
6.	Kesar	828.49	1,871.71	1,886.22	4,187.84	1,356.07	2,946.15
7.	Totapuri	30.68	29.60	147.07	119.35	46.70	54.21
8.	Mallika	31.90	17.89	46.99	49.79	6.10	8.73
9.	Other	14,560.48	17,112.74	13,683.18	15,413.85	11,462.65	18,163.26
Total		19,184.25	24,145.82	20,873.91	28,259.11	15,798.48	26,864.65

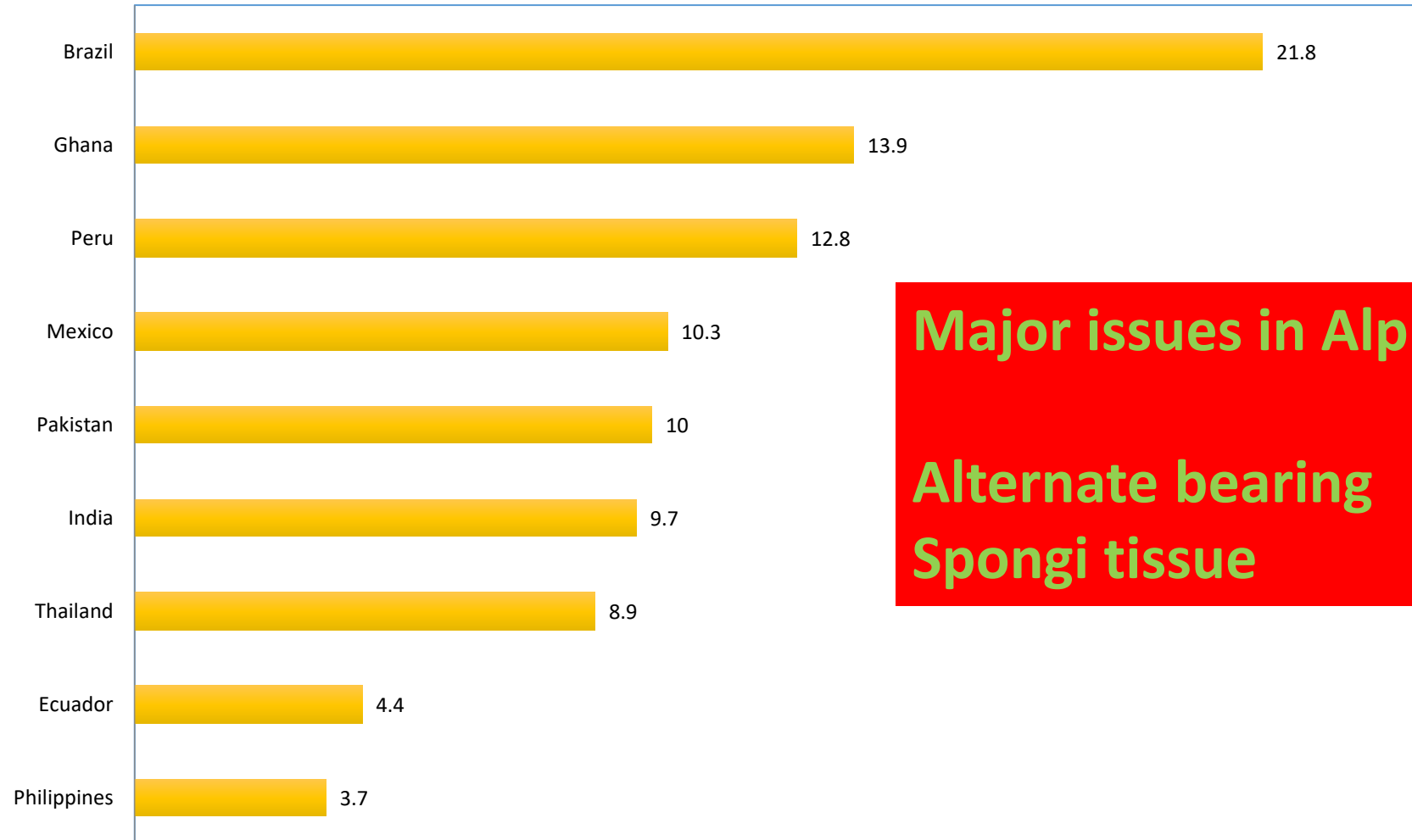
Source : DGCIS



Population of Indian origin are important consumers of Indian mango all over the world

S.No.	Country	Population of Indian origin (Lakh)
1	USA	45
2	Saudi Arabia	41
3	UAE	28
4	Malaysia	24
5	England	18
6	Canada	15
7	South Africa	13
8	Australia	5
9	France	5
10	Singapore	3
	Total	197

Worldwide Mango Productivity (MT /ha)



Major issues in Alphonso mango

**Alternate bearing
Spongi tissue**

Indias productivity is less.

Cold Storage for Mango

❖ For better shelflife (20-30 days) Mango is pre-cooled to 12.8 to 13 oC



Hot Water Treatment



For 1hr treatment



For 3 min.

- **Available at Vashi, Jamsande**

Hot Water Treatment

Fruit weight (g.)	Water temp.	Period of treat.
500 g or less	48°C or more	60 min
500 to 700 g	48°C	75 min
701 to 900 g	48°C	90 min

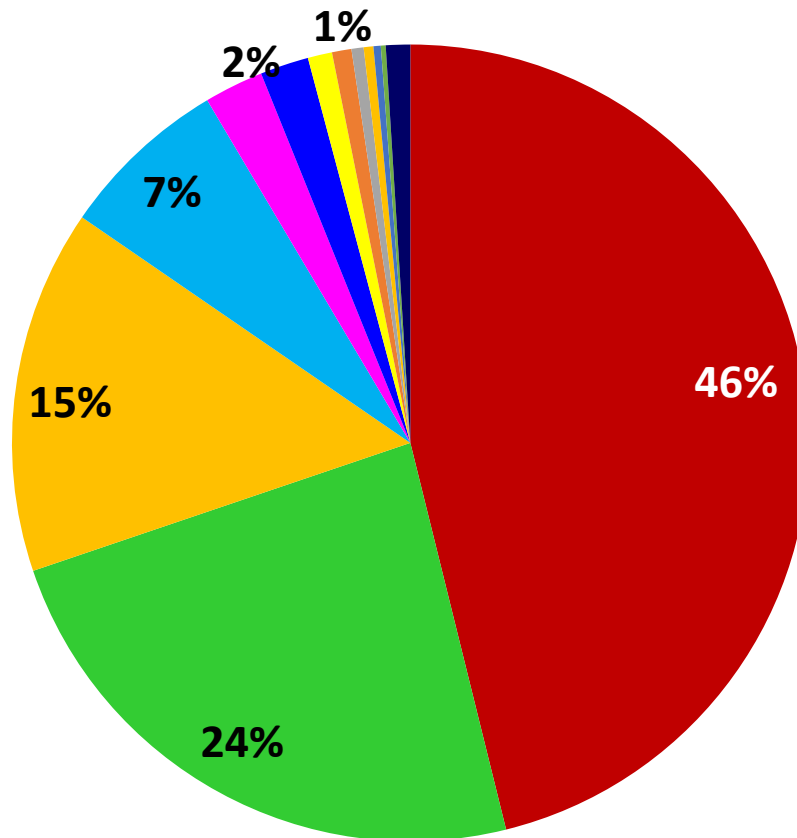
VHT Unit at Vashi



Mango Processing for Export

Country	Treatment	Location
Japan/ South Kororia	VHT 47.5 for 20 min	Vashi
Newzealand	VHT 48 for 20 Min.	Vashi
EU	VHT 46.5 for 20 Min	Vashi
	Hot Water Treat. 48 for 60 Min	Ratnagigiri, Vashi, Latur
USA / Australia	Radiation	Vashi
Iran	Hot Water Treat. 48 for 60 Min)	Vashi

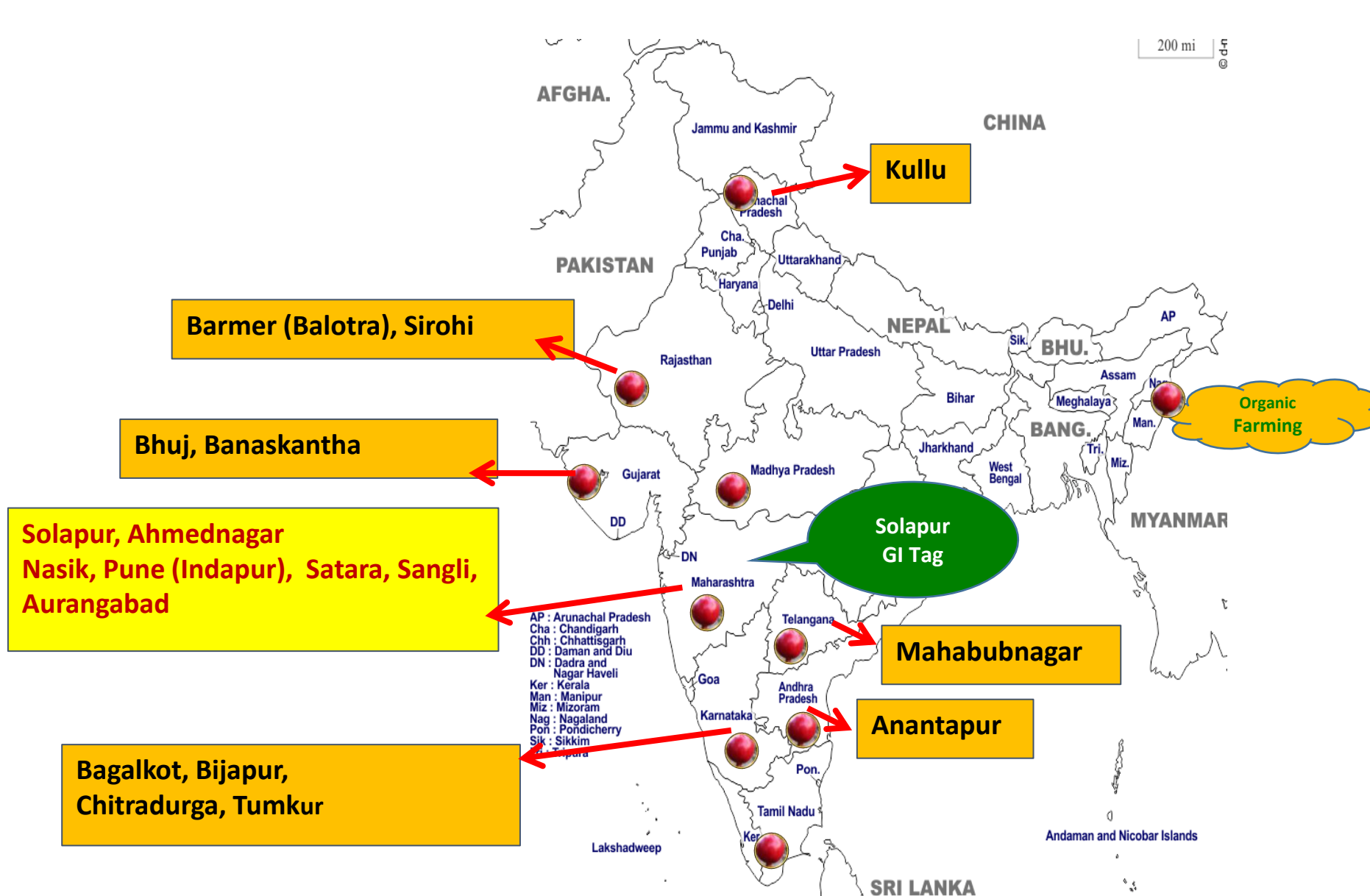
Pomegranate Area (x 1000 ha) Global Scenario



Country	Area (x 1000 ha)
India	262.00
China	120.00
Iran	75.00
Turkey	35.00
USA	12.20
Tunisia	10.0
Morocco	5.00
Spain	4.00
Israel	2.50
Greece	2.00
Italy	1.50
South Africa	1.00
Others	5.00
Estimated Global	535.3

Source: India <http://nhb.gov.in> 2018-19;
 Other countries: Estimated figures; Guida
 Illustrata Il Melograno 2018 pp54

Major Pomegranate Growing States / Districts in India

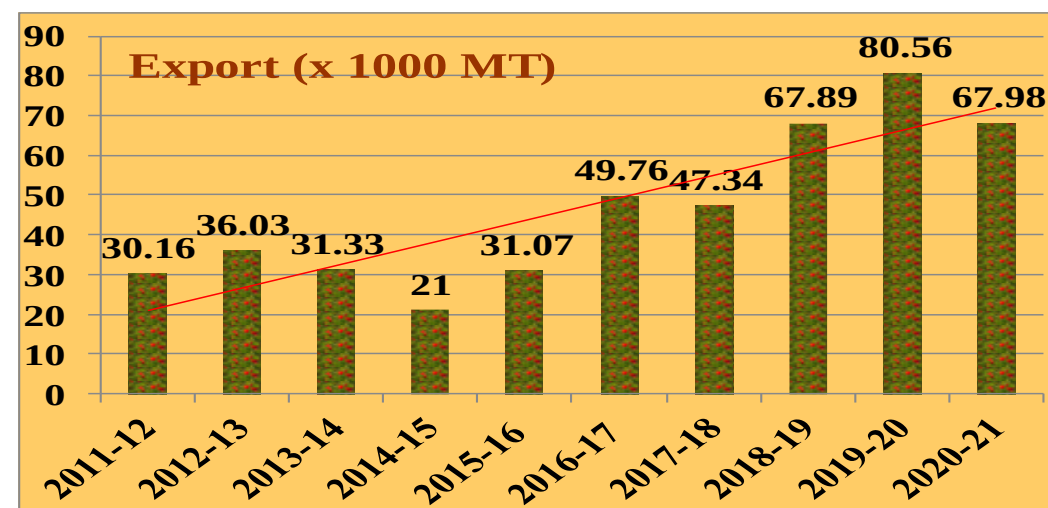
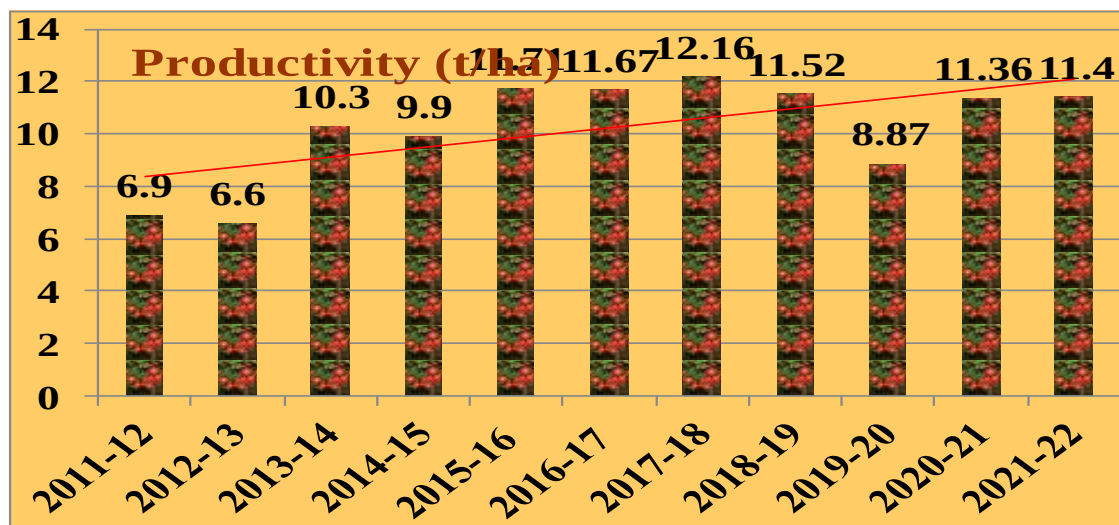
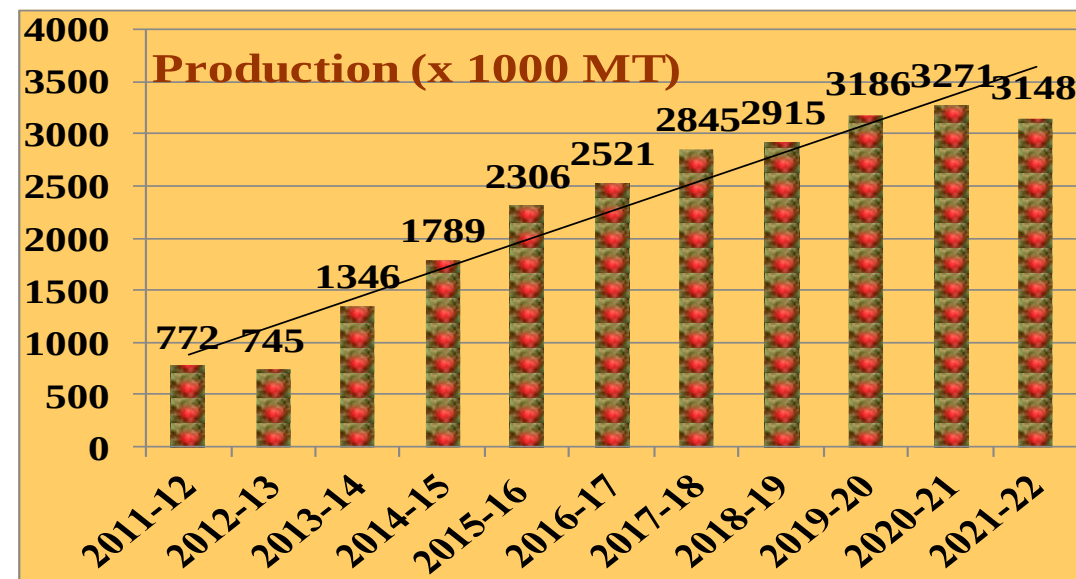
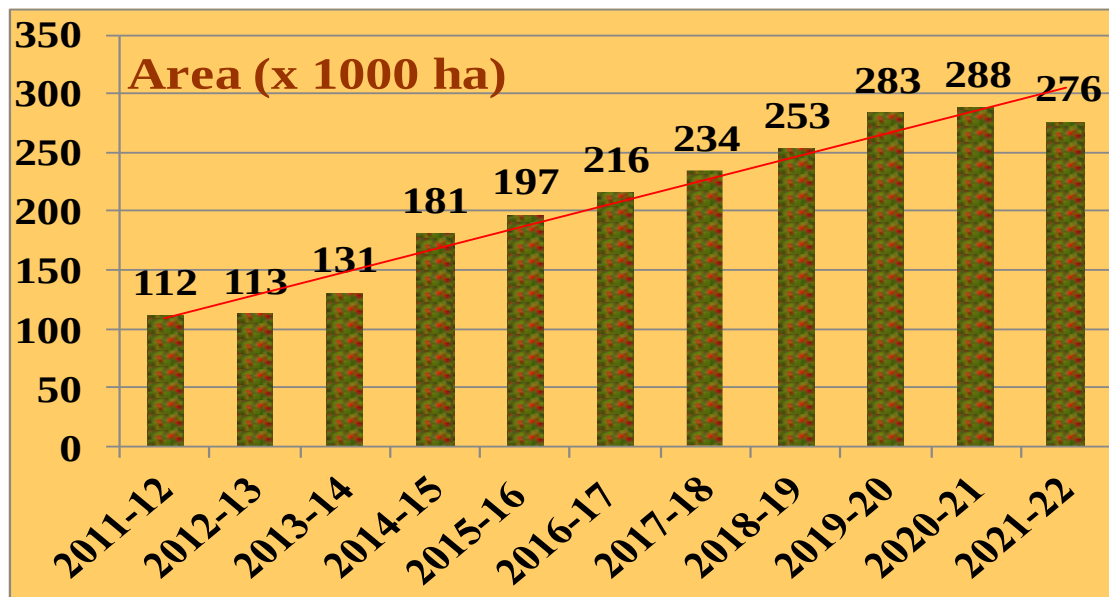


Solapur Pomegranate
Got
GEOGRAPHICAL INDICATION (GI)
tag in **February 2016** because of
highest yield,
superior fruit
quality -red colour
juicy soft seeded
arils.

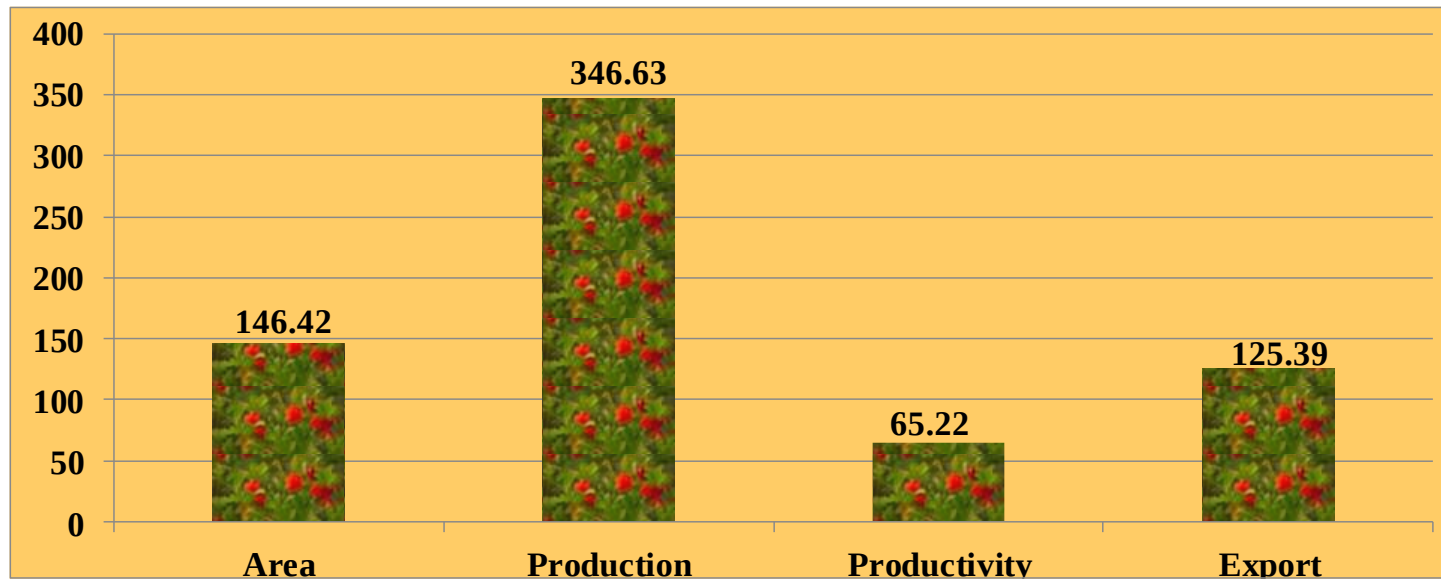
Advantage India

Pomegranate Fruit Availability Period - Global Scenario												
	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
SPAIN												
INDIA												
IRAN												
CHILE												
PERU												
EGYPT												
ISRAEL												
CHINA												
USA												

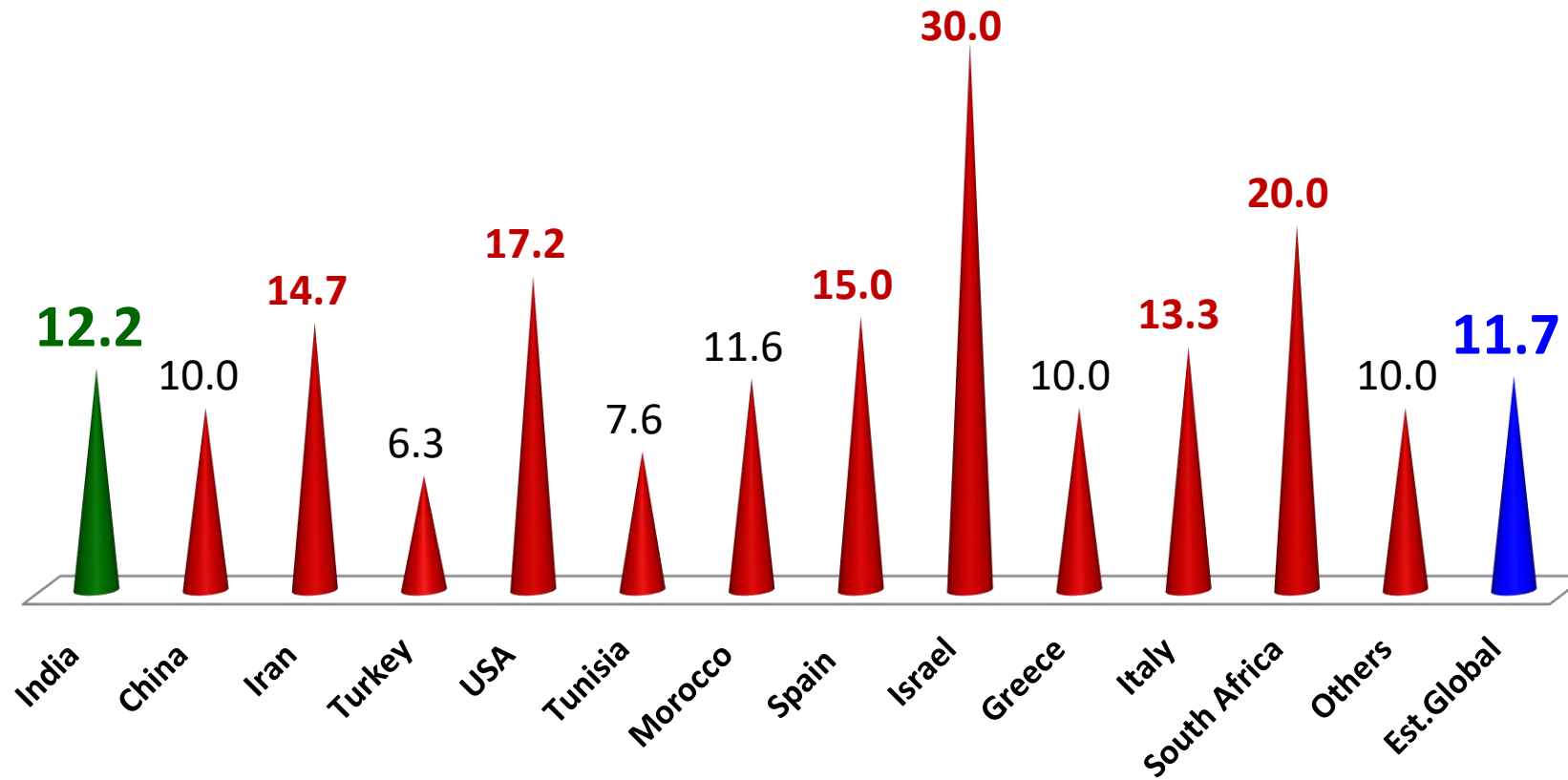
Pomegranate scenario in India 2011-2022



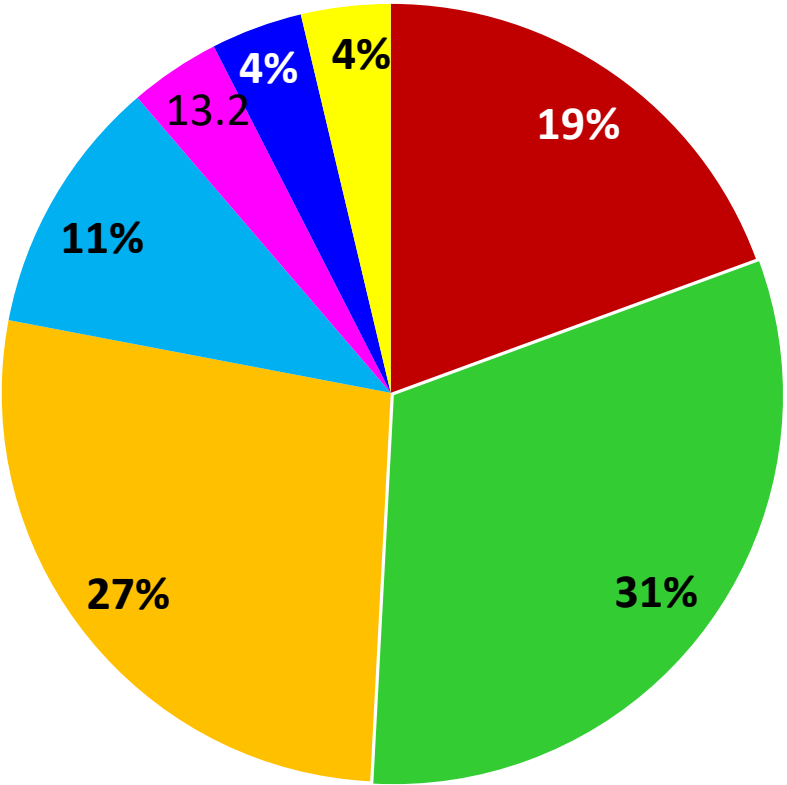
Percent increase in pomegranate area, production and export during last 11 (2011-22) years in India



1. Low Pomegranate Productivity (t/ha) Global Scenario



Pomegranate Export (x 1000 MT) Global Scenario



Country	Export (x 1000MT)
India	80.50
China	110.0
Iran	95.0
Israel	37.5
USA	13.2
Turkey	13.3
Spain	13.0
Global Export Market (estimated)	362.5

Monoculture – Bhagawa (>80% area)



Need for **import of Popular Commercial Pomegranate Varieties** from **Other Countries**



Saveh (**Iran**)



Mollar (**Spain**)



Granadas Elche (**Spain**)



Dabenzi and Tunisiruanzi
(**China**)



Tunisian soft seeded (**China**)



Wonderful (**U.S.A. and Israel**)



Granada (**U.S.A.**)



भारतीय अमरुद को मिले नए बाजार

विश्व को भाया देसी अमरुद का स्वाद

अमरुद निर्यात

\$0.58 मिलियन



अप्रैल-जनवरी
2013-14

260%



\$2.09 मिलियन



अप्रैल-जनवरी
2021-22



IMP Avacado varieties



वाण - हास

Hass



वाण - मालुमा

Maluma



Avacado is newly introduced crop in India

DBS KKV, Dapoli has introduced Patented rootstocks, Dusa, Bounty, Duke-7 for their resistance to Phytophthora and tolerance to saturated soil moisture.

Work is in progress



Different types of Dragon fruits and varieties

White Dragon Fruits : Pink skin and White flesh

David Bowie, Vietnamese Jaina, Seoul Kitchen, Lake Atitlan, Neitzel, Alice, Guyute, Harpua, Thompson

Red dragon fruits: has pink skin with a burst of red flesh.

Red Jaina, Zamorano, Costa Rican Sunset, Natural Mystic

Pink Dragon Fruits:Has Red Skin but rose pink flesh

Makisupa, American Beauty, Delight, Dark Star, Cosmic Charlie, Purple Haze, Voodoo Child

Yellow Dragon Fruits : Yellow skin with white flesh

Sour Dragon Fruits

called stenocereus and is found primarily in South and Central America, particularly in more arid regions. Has sweet and sour test









Thank You