



Indo-German Cooperation on **Agricultural Market Development**

Building sustainable partnerships



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Ginger Global Trade – India’s Role

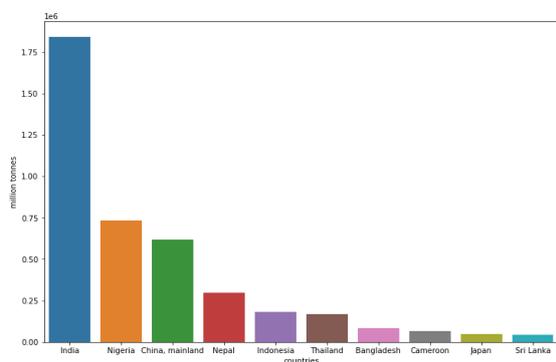


Figure 1. Figure 2. Top ten countries of Ginger production in 2020 (FAOSTAT 2021)

- In 2020, India was the world’s largest Ginger producing country contributing more than 43.81% of total world production, followed by Nigeria (16.94%), China (14.24%), Nepal (7.29%) and others (Tridge 2021).
- The global ginger market surged to \$7.3B in 2020, increasing 19% against the previous year (Globaltradeamagii).
- The global ginger market is set to reach USD 4.8 Billion by 2027, growing at a CAGR of 5.4% over 2020-2027 (Tridge 2021).
- The outbreak of the COVID-19 epidemic led to a sharp rise in demand and price in 2020; prices in the US & EU markets rose by 30 to 40% in 2020.

Table 1. Top five ginger exporters in 2020 (Tridge 2021ⁱⁱⁱ)

Country	Export Share 2020 (%)	Export Value in 2020 (US\$ million)	Export Growth Value from 2017-20 (%)
China	53.68	704.78	+67.81
Netherlands	11.42	149.92	+83.35
Peru	9.02	118.44	+116.66
India	5.96	78.28	+223.77
Thailand	4.67	61.29	-43.41

Table 2. Top five ginger importers in 2020 (Tridge 2021)

Country	Import Share 2020 (%)	Import Value in 2020 (US\$ million)	Import Growth Value from 2017-20 (%)
USA	12.2	154.17	+47.46
Netherlands	11.57	146.18	+113.26
Pakistan	7.44	93.95	+48.50
Japan	7.14	90.14	+4.83
Bangladesh	6.58	83.09	+120.67

- From 2019 to 2020, India’s ginger export growth value increased exponentially. During the last five years, the growth value increased by 141%. The Indian ginger export value has increased due to poor production in China, a rise in logistics cost and international dollar value.
- From 2014 to 2018, Indian ginger exports dropped down to 50 %. The value of exported ginger dropped significantly from US\$ 40.16 million to US\$ 19.76 million. During this period, ginger showed a high instability rate in production and productivity due to poor environmental conditions (floods, poor weather, landslides etc.) and low international market price.
- Dry ginger (bleached and unbleached), the export growth rate declined to -4.27% per annum during 2015-16 to 2019-20.
- However, the growth rate in unit price increased due to a surge in price from Rs 167.60 per kg in 2015-16, to Rs 236.08 per kg in 2019-20.
- Ginger crushed or ground share value in 2019-20 was 11.86%, the growth rate declined to -2% per annum
- In 2020, Bangladesh was the top country importing ginger from India.

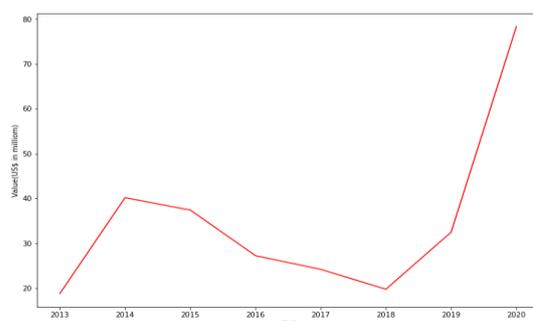


Figure 3. Indian Ginger export trends from 2013 to 2020 (Tridge 2021)

Table 3. Top five importing countries from India in 2020 (Tridge 2021)

Trade flow	Export Share in 2020 (%)	Import Value In 2020 (US\$ million)	Export Growth value 2019-20 (%)
India to Bangladesh	56.74	44.41	+263
India to Morocco	15.92	12.46	+31.58
India to UAE	3.7	2.90	+263.62
India to USA	3.54	2.77	+20.72
India to Iran	2.67	2.09	-

Ginger Import Trends in European Union

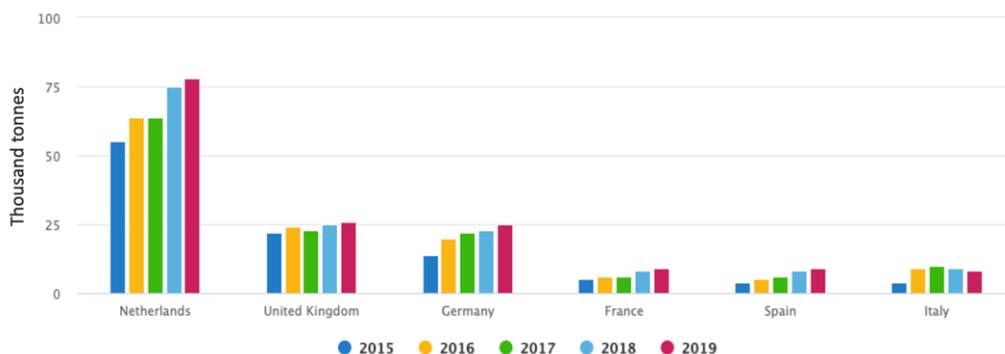


Figure 4. Leading importers of Ginger in the EU (CBI 2021^{iv})

- Since 2014, European imports for dried ginger have increased by an annual rate of 10%; at the same time, the yearly import value increased by 7.9%, with a worth of €182 million in 2019 (CBI 2021).
- From 2014 to 2019, the Netherlands was the top importer of ginger in the EU.
- China occupies more than 70% of the EU ginger market, followed by Peru, Brazil, Nigeria and India (WITS 2021)
- India exports dried ginger only to Europe. India’s share was 1.7 thousand tonnes in 2019. In general, EU ginger imports from India were stable from 2014 to 2018, with an average of 1.4 to 1.5 tonnes per annum (WITS 2021, CBI 2021)

Ginger Import Trends in Germany

- In 2020, Germany’s import value was US\$ 70.4 million, which is more than US\$ 21 million compared with 2019 (Tridge 2021). Germany’s imports of ginger have increased by an annual growth rate of 16% from 2014 to 2109 (CBI 2021).
- In 2020, China was the leading supplier of ginger to Germany, with 45%, followed by Peru, the Netherlands and Nigeria. The Netherlands is a third-party country in this regard.
- India has increased its export growth value by 6% in Germany in the last five years.
- The German market currently has limited supplies of ginger, with wholesale prices rising to about 40 Euro per 12kg, which was far higher than the average price during the period, which is usually 25 to 26 Euro per 12kg (CBI 2020).

Table 4. Table 4. Top five Ginger exporting countries to Germany in 2020

Partner	Import Share in 2020 (%)	Import Value In 2020 (US\$ million)	Export Growth value 2017-20 (%)
China	45.49	32.00	+263
Peru	20.49	14.4	+31.58
Netherlands	19.69	13.85	+263.62
Nigeria	3.79	2.67	+20.72
India	1.53	1.09	+6.05

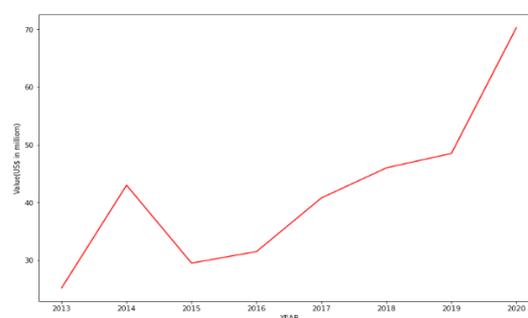


Figure 5. Ginger import trends in Germany from 2014 to 2020

Ginger Market Segmentation in Europe

- The ginger wholesale price depends on season and quality. China, the largest fresh and dried ginger exporter, strongly influences global market prices for ginger. For example, in July 2019, the price for dried Indian ginger whole was about USD 4,000 per tonne, while Chinese ginger sliced was about USD 3,000 per tonne, and Nigerian ginger was sold at about USD 2,000 per tonne (CBI 2021)¹.
- The food and drinks processing industry is roughly estimated to use 75% to 90% of all dried ginger on the European market. The most significant users within this segment include spice mixture producers; they produce either dried or liquid spice ingredients such as ginger (Ingwer) power, immune shots, ginger capsules, ginger oil. Some examples of such companies in Europe are AVO (German producer with a factory in Poland and France), Meat Cracks, Kerry Ingredients, Frutarom (part of IFF), and Farevelli Group, Food Ingredients Group, Kalsec, EHL Ingredients or Ion Mos.
- Europe dominates the retail and food-service segments for spices and herbs (often national) spice brands/companies, such as Fuchs in Germany, Verstegen and Euroma in the Netherlands, Santa Maria (Scandinavian countries) and multinational brands such as McCormick, Kraft Heinz, etc. For example, the Dutch spice specialist Silvo has been part of McCormick since 2004. Also, some strong brands are developing in South-East Europe, such as Prymat Group. These spice companies import spices worldwide and have in-house processing and R&D facilities.



Table 5. Consumer prices for various ginger products in Germany

Product	Price (€)
Fuchs Ingwer Pulver (ginger power) - 50 gm	2.99
Bio Ingwer Pulver (ginger power) -500gm	8.95
TRS ginger powder – 100gm	1.19
Increase (Bio) ginger oil – 30ml	14.90
Achterhof (Bio) 160 capsules, 595 mg	14.99
Em-eukal	4.97

EU Regulatory Requirements

The most common requirements regarding contaminants in dried ginger are related to the presence of pesticides residues, mycotoxins, heavy metals, microbiological organisms and food additives.

Mycotoxins (Aflatoxin and Ochratoxin)

The maximum level of aflatoxin for dried ginger must be maximum 5 µg/kg for aflatoxin B1 and 10 µg/kg for the total aflatoxin content (B1, B2, G1 and G2). For ochratoxin, the maximum level is 15 µg/kg

Microbiological contaminants

There were four notifications of ginger issues in the RASFF database in the first nine months of 2020. These notifications were related to salmonella, aflatoxins, and polycyclic aromatic hydrocarbons in ground ginger, and lead in fresh ginger.

Pesticides Residues

The European Commission has set maximum residue levels (MRLs) for pesticides in and on food products. Products containing more pesticide residues than allowed will be withdrawn from the European market. The European Commission regularly publishes and updates a list of approved pesticides¹ that are authorised for use in the EU.

Heavy metals

The European Commission launched a review process for the maximum allowed led levels in 2020. New limits for some products may be set in 2021. The proposed limit value is 2 mg/kg for ginger.

Food additives

There is specific legislation for additives (like colours, thickeners) and flavourings that list what E-numbers and substances are allowed for use. Additives that are authorised are listed in Annex II to the Food Additives Regulation².

¹ <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex:32011R0540>

² <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1478597149803&uri=CELEX:02008R1333-20160525>

What conditions do buyers often have?

In addition to the mandatory requirements, many other specific buyers request European Spice Association published **Quality Minima Document** specifications. These include compliance with additional food safety, quality and sustainability standards.

Ash content	- maximum 8%
Acid insoluble ash	- maximum 2%
Moisture	- 12%
Volatile oils	- Minimum 1.5 ml/100 gr
Sulphur dioxide (SO ₂)	- maximum 150 ppm
Packaging requirements	For shipping, bulk dried whole ginger roots should be packaged in PP or PE woven bags (36 kg to 65 kg) with good respiration or ventilation. Ginger processed in the form of slices or powder is packaged in multi-wall laminated bags of different weights ranging from 1 to 25 kg. exporting and importing countries may require include the bar, producer and/or packager code, as well as any extra information that can be used in order to trace the product back to its origin.
Labelling requirements	<ul style="list-style-type: none"> - name of the product - details of the manufacturer (name and address) batch number - date of manufacture - product grade - producing country - harvest date (month-year) - net weigh
Food safety certification	<p>Many EU buyers require the implementation of a (HACCP-based) food safety management system.</p> <ul style="list-style-type: none"> - Certification. International Featured Standards³ (IFS) - British Retail Consortium Global Standards⁴ (BRCGS) - Food Safety System Certification⁵ (FSSC 22000)

EU requirements for Organic Ginger

Organic certification schemes are becoming increasingly popular in Europe. According to European legislation, organic production methods must be followed to market ginger organic in Europe. An accredited certifier must audit growing and processing facilities before you may put the European Union's organic logo on your products and the logo of the standard's holder, for example, Soil Association in the United Kingdom, Naturland in Germany or Agriculture Biologique in France. Importing organic products into Europe is only possible with an electronic inspection certificate (e-COI). Each batch of organic products imported into the European Union has to be accompanied by an electronic inspection certificate as defined in Annex V of the Regulation restricting the imports of organic products from third countries. This electronic inspection certificate must be generated via the Trade Control and Expert System (TRACES).

Sustainability Certification

To improve sustainable production and sourcing of spices and herbs, mainly European companies and organisations formed the *Sustainable Spice Initiative in 2012*. The primary objective of this initiative is to strive for fully sustainable spice production and trade in the sector. The most famous sustainability certification schemes are Fairtrade, which focuses on ethical practices, and Rainforest Alliance, which focuses on environmental impacts. Fairtrade International developed a specific standard for herbs, herbal teas and spices for small-scale producing organisations. This standard defines issues related to traceability, management and production practices and labour conditions. According to this standard, a premium price of 15% over and above the negotiated price between producer and seller must be established.

³ <https://www.ifs-certification.com/index.php/en/>

⁴ <https://www.brcgs.com>

⁵ <https://www.fssc22000.com/?lang=en>

Ginger Production in India

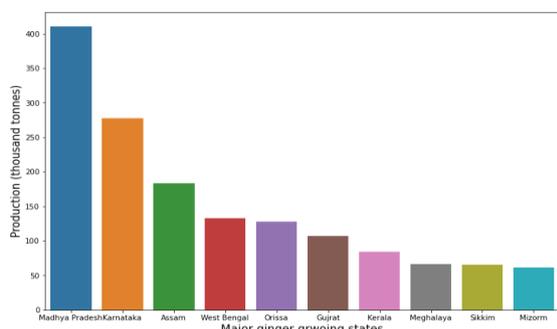


Figure 6. Major states of ginger production in 2020

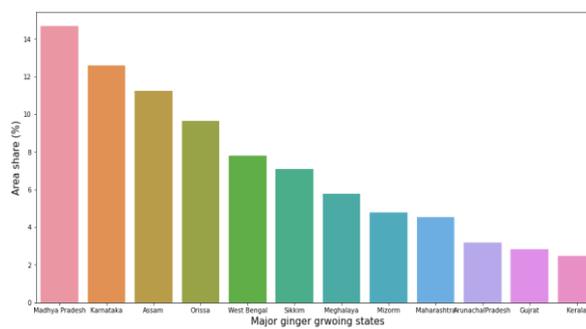


Figure 7. Major ginger cultivation states area wise in 2020

- In 2019-2020, the area under ginger cultivation was 0.172 million hectares with a production of 1.8 million metric tonnes of fresh ginger. In the last ten years, the ginger cultivated area increased to 55%.
- The states in the North-East Region have increased their area under ginger, which presently accounts for about half of the area in the country; their contribution to production is about 38.4%.
- The major ginger producing states are Madhya Pradesh with a share of 22%, Karnataka 15%, Assam 9.9%, West Bengal 7.2% followed by others in 2019-2020.
- Ginger productivity is not uniform across the states, the average is 3.58 tonnes per hectare. In 2019-20, Gujarat had a yield of 5.02 tonnes per hectare, while that of Kerala was 4.47 tonnes per hectare.
- Particularly the North-East Region reported very low productivity, e.g. Sikkim had a yield of 1.1 tonnes per hectare. Sikkim mainly produces organic ginger in the country.

Domestic ginger market in India

- The demand for ginger is not only in a fresh form for vegetable purposes but also for value-added products such as ginger powder, ginger paste.
- Ginger, both fresh and dry, have huge inter-seasonal fluctuations in prices. From 2002 to 2020 coefficient of variation of fresh ginger prices ranged from 41% to 70% and for dry ginger from 36% to 42% at various state-level APMC markets in India. Often, prices decline in the post-harvest period and increase in the lean period.
- In 2019-20, however, the price of ginger showed a marked improvement, with a growth rate of 65%. In Karnataka (Hassan), a major market for ginger, the price of fresh ginger in 2018-19 was as low as INR⁶ 30 per kg and increased sharply to INR 97 per kg in 2019-20.
- In 2016-17 lowest price of INR 6 per kg was reported in Maharashtra.

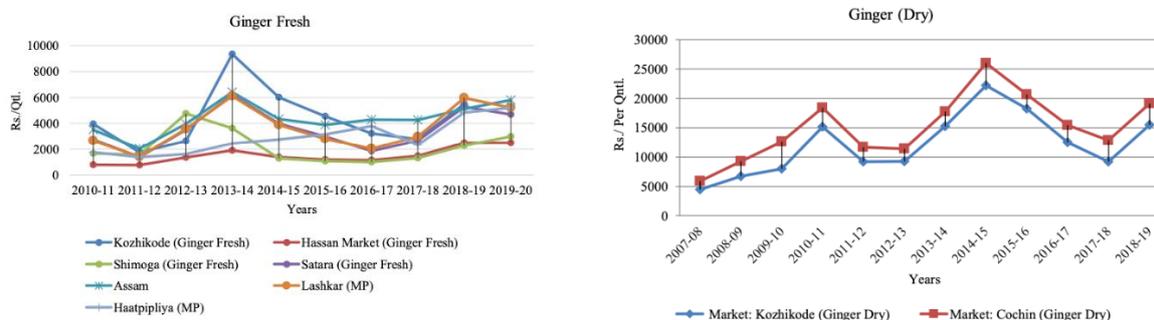


Figure 8. Ginger price fluctuations at various state-level APMC markets in India (Shroff 2020⁶)

⁶ INR=Indian Rupee

Organic Promotional schemes in India

Spice Board India^{vii}: The Spice Board offers the following subsidies which may be obtained:

- Organic spice cultivation: Subsidy towards 12.5 per cent cost of production subject to a maximum of INR 12500/- per ha. for identified spices.
 - ICS groups: 50 per cent cost of maintenance of ICS subject to a maximum of INR 75000/- as subsidy.
 - Organic certification: Assistance to the group of farmers, NGOs and Farmers Co-operative Societies/Associations in acquiring certification for their farms/processing units by meeting 50 per cent cost of the certification subject to a maximum of INR 1 lakh. Individuals are eligible for 50 per cent of the cost of certification subject to a maximum of INR 30000.
 - Vermicompost units: In order to enable the growers to establish the vermicompost units, INR 3000/- is offered as a subsidy towards 33.33% of the cost of setting up a unit.
 - Organic value addition units: 50 per cent of the cost of the equipment/machinery for setting up of primary processing unit for organic spices subject to a maximum of INR 5.00 lakh as subsidy.
- In addition, there are various schemes at the state level for the promotion of organic cultivation. These may also be accessed by the facilitating agency.

Paramparagat Krishi Vikas Yojana (PKVY^{viii}): Under PKVY farmers taking up organic farming (minimum group size of 50 farmers) are provided grant assistance of INR 20000 per acre spread over a three-year period. Farmers could utilise these funds for purchasing seed, crop harvesting and transportation of produce.

Small Farmers' Agribusiness Consortium (SFAC) Scheme^{ix}: SFAC supports the FPOs by extending the loan guarantee and equity capital support schemes: The following two schemes of SFAC would be helpful for the FPOs to leverage the loan from banks:

1. Loan/equity guarantee cover scheme: Loans to POs/FPOs/FPCs under credit guarantee cover. Under this scheme FPOs can get a term loan, working capital loan and or both. However, to be eligible to get the loan, the FPO must be 1 to 2 years old having an audited balance sheet for at least one year and minimum share capital of INR 3 lakh. The rate of interest is charged as per the NABARD refinancing rate. The loan is given up to 6 times of the net worth of FPOs or INR 1 crore whichever is less.
2. Equity Grant Fund Support to FPCs: The Equity Grant Fund enables eligible FPCs to receive a grant equivalent in amount to the equity contribution of their shareholder in the FPC, thus enhancing the overall capital base of the FPC. The Scheme shall address nascent and emerging FPCs, which have paid-up capital not exceeding INR 30 lakh as of the date of application.

What are significant challenges in the ginger supply chain?

Ginger production constraints

- | | |
|------------------------|---|
| Low productivity | <ul style="list-style-type: none"> - Insufficient availability of quality seed. - High rainfall in the country's North-Eastern region is one of the significant problems of ginger cultivation. - Ginger is an exhausting nutrient crop and if grown continuously on the same soil, productivity is likely to get reduced. - The majority of farmers use their own seed, which suffers from quality, and thus the crop suffers from diseases such as rhizome rot, which lowers the yield. |
| Cultivation constrains | <ul style="list-style-type: none"> - Increased input cost (seed, fertiliser and pesticides) - Ginger is gaining importance in the country's North-East Region, and they can promote the agricultural sector. However, there are several constraints to achieving this as farmers are resource-poor, and there are infrastructure and labour bottlenecks. |
| Post-harvest losses | <ul style="list-style-type: none"> - Lack of cold storages lead to substantial post-harvest losses - Processing of ginger is mainly in the form of sun drying. Modern infrastructure, such as mechanical driers should be encouraged to expedite the drying process and produce high-quality clean produce. |

Market constrains

- High price fluctuation.
- Sikkim is an entirely organic state, and hence the production of ginger is purely organic. However, farmers cannot realize a premium price for their produce. While marketing the product, the farmers have small lots to offer, and there is poor connectivity in the interiors.
- No minimum support prices
- unfair auction, poor weighing, grading and sorting facilities at APMCs

Difficulties in organic certification

- Organic turmeric is also produced in Erode in Tamil Nadu. While the cost of cultivating the produce is much higher, several farmers are reluctant from cultivating organic turmeric because they have to pay unaffordable fees for certification.

Comparative challenges in ginger exports from India

Productivity: The major competitors in ginger global exporters like China (10.99 tonnes per hectare) and Thailand (16.85 per hectare) are having higher productivity as compared to India (3.58 tonnes per hectare). Indian average ginger production is lower than the world average (5.42 tonnes per hectare). About 58% of countries have productivity levels higher than India (Goegoi 2020, Shroff 2020).

Product segmentation:

China also leads in the export of crushed or ground ginger in value terms, with a share of 37%, while India ranks second but is far below with 14.63 %. Ground ginger exported from India was mainly from varieties grown in Kerala, which had good flavour, low fibre and high oil content. However, India can no longer be competitive as labour costs are high in Kerala. Efforts must be made to promote the cultivation of such varieties at competitive prices.

The export of ginger products such as ginger oil from India is negligible and constitutes even less than 1% of the total exports.

EU trade: EU ginger demand is increasing at a rate of 10%, where Indian share in ginger exports to the EU are insignificant. Even though Indian exporters can offer products at a low price, at the same time, there are concerns among buyers regarding quality and quality consistency, including adulteration.

Export performance: Ginger shows a positive record in terms of production, productivity and export performance but slight year-wise fluctuation in area wise due to environmental hazards and poor harvesting. The compound annual growth rate analysis (CAGR). in terms of export value is 13.98% increased (Goegoi 2020*).

In a nutshell, there is tremendous potential for ginger exports by adopting sustainable strategies. Particularly improving productivity, market intelligence, improved processing technologies will widen domestic and EU markets.

ⁱ https://www.fao.org/faostat/en/#rankings/countries_by_commodity_exports

ⁱⁱ <https://www.globaltrademag.com/india-clashes-with-china-in-the-global-ginger-export-market/>

ⁱⁱⁱ <https://www.tridge.com/intelligences/ginger>

^{iv} <https://www.cbi.eu/market-information/spices-herbs/dried-ginger/market-potential>

^v <https://www.cbi.eu/market-information/spices-herbs/dried-ginger-0>

^{vi} Shroff, Sangeeta (2020). Assessment of ratio of different products / forms of spices being marketed: Study based on Ginger and Turmeric: AERC Report. Gokhale Institute of Politics and Economics (GIPE), Pune, India

^{vii} <http://www.indianspices.com>

^{viii} <https://pgsindia-ncof.gov.in/PKVY/Introduction.aspx>

^{ix} <https://digitalindia.gov.in/content/small-farmers-agribusiness-consortium-sfac>

^x Manuranjan Gogo, Production Performance of Ginger: A Study among Indian States, International Journal of Management, 11(12), 2020, pp. 845- 850.