



BRAZIL COUNTRY PAPER ON PEPPER PRODUCTION, PROCESSING AND TRADE
42nd PEPPER EXPORTERS' MEETING
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1. Introduction

Pepper is the most important spice produced in Brazil - as it is in most of the world.

For the year of 2009, compared with basic and manufactured goods exported, pepper represented 0,06% of the Brazilian foreign trade (6,5% for sugar & alcohol).

After that peak an outbreak of *Fusarium* disease through out the main producing areas dramatically affected Brazilian production and exports as the plant productive life cycle reduced from 20 to 6 years.

The impact of the disease was attenuated by government action and a number of studies developed by the Brazilian Agriculture Research Corporation (EMBRAPA), an entity of the Ministry of Agriculture, Livestock and Food Supply (MAPA). The focuses of EMBRAPA's scientists are on alternative ways to prevent and/or eliminate *Fusarium* disease. There has been some progress in the development of news cultivars through the introduction of germplasm used in breeding programs.

2. Production

2.1 Current Status of pepper production

a) Acreage pepper under cultivation for the year of 2010 and 2011 in Ha.

Year	New Planting	Productive area	Non-Productive area	Total
2010		20,000		20,000
2011		20,000		20,000

Source: Raw Estimate

No changes observed in figures since 2009.



b) Distribution of pepper cultivation for the year of 2010 and 2011

Name of State/Province	2010(ha)	2011(ha)
PARA	16,000	16,000
ESPIRITO SANTO	3,000	3,000
BAHIA	700	700
MARANHÃO	300	300
Total :	20,000	20,000

Source: Estimate

c) Production of black and white pepper for year of 2010 - 2012 in Mts.

Year	Black	White	Total
2010	32,000	2,000	34,000
Estimate 2011	33,000	2,000	35,000
Projection 2012	33,000	2,000	35,000

Source: Estimate

2.2. Factors affecting current production and productivity of pepper holdings, e. g., prices, acreage expansion, weather conditions, pests and diseases, government policies, investment programs etc.

- Pests and diseases (source: EMBRAPA, November 2011):

Main diseases of *Piper nigrum* in Brazil are *Fusarium solani* root rot and viruses, CMV and PYMoV. Other researches aim viruses control through tissue culture. A new technology for fusariosis control was developed by EMBRAPA (Tremacoldi, 2011)*, using leaves of *Azadirachta indica* incorporated to soil during seedlings production. Seedlings show 100 % control of fusariosis using the technology.

*Tremacoldi, C.R. Tecnologia para o controle da podridão de raízes em mudas de pimenteira-do-reino. Série EMBRAPA: Comunicado Técnico, 226. Belém, Pará, 4p. 2011.

3. Processing & Product Development

Main pepper products produced in Brazil are respectively: Black Pepper, White Pepper, Ground Pepper and Green Pepper.



National market is very small, Brazil's internal consumption ranges around 5.000 and 7.000 tons per year.

Due to cultural reasons, Brazilians like more peppers from the capsicum family. Besides, as piper nigrum is a foreign specie in Brazil, many people are not familiar with the plant and the pepper itself.

Some national industries and also some international brands make pepper products for the Brazilian national market. These products are basically whole black pepper, whole white pepper, ground black pepper and some mixes of black, white and pink pepper.

The manufacturers sell their products basically at supermarkets, groceries stores and vegetable, fruits and herbs markets.

Regarding the production of green pepper, Brazil decreased its production, but as this product is not differentiated at MERCOSUL (NCM) classification, it is very hard to know exactly the amount of green pepper that is produced. Because of this, Brazil discontinued to inform numbers on green pepper since 2010, and will keep this way until a specific code may be established.

Pepper in Brazil is essentially an export product and its majority is exported to traditional import markets, especially EUROPE and USA.

During the year 2010 Brazil exported 30.723 Mts of whole Pepper and during 2011 from Jan-Aug were exported so far 25.334 Mts. For the same periods, were exported respectively, 79.79 and 37 Mts. of ground pepper which is mainly exported to Germany (70%).

4. Trade

4.1. Current status of pepper export from the country

a) Exports of black and white pepper



Months	Year 2010		Year 2011	
	Qty (Mts.)	Value (US\$)	Qty (Mts.)	Value (US\$)
January	2,506	7,328,514	2,248	10,418,601
February	2,063	6,358,979	2,791	13,394,161
March	2,343	6,469,115	2,863	13,679,862
April	2,708	7,713,152	2,337	11,414,632
May	2,897	8,698,966	1,601	8,312,215
June	1,859	5,766,239	1,532	8,421,482
July	2,873	10,704,757	745	4,845,565
August	1,786	7,264,296	1,960	12,088,176
September	2,862	10,632,804	4,551	29,345,156
October	2,292	15,765,559	4,706	33,360,572
November	2,998	12,467,332	--	--
December	3,535	8,822,010	--	--
Total	30,723	107,995,723	25,335	145,280,422

Source: SECEX (Nov., 2011)

It includes black, white and green pepper, according to MERCOSUL (NCM) classification

b) Estimate of total exports for 2011. 32,000 Mts (Qty. until Oct. plus medium value from 2007-2010).

c) Projection of exports for 2012, with reasons for the increase/decrease.

Projection of exports for 2012 is 30 up to 32,000 Mts, an expected stability or increase based on historical data. Brazilian exporters are still being affected by strong currency value of the Brazilian Real against the US Dollar and the EURO and the prices that are being practiced in the local market are not fulfilling the farmer's expectations and consequently farmers are not increasing drastically the plantations as the high prices could suggest. Besides, a poor bearing and a higher death rate are being forecasted for 2012. The substitution of dead vines will be better than it was in 2011, nevertheless, it will not be sufficient to increase the production.

Finally, if the weather turns to be drier for 2012, than the crop may be even lower.

d) Export of pepper by country of destination, volume and value for 2010 and 2011 (January up to the latest available) as per attached format (Table 1)

Table1



EXPORT OF BLACK AND WHITE PEPPER BY COUNTRY OF DESTINATION
(Quantity in mt and value in US\$)

COUNTRY OF DESTINATION Black & White Pepper	2010		From January to September 2011	
	Qty(Mts.)	Value(US\$)	Qty(Mts.)	Value(US\$)
European Union	7,956	30,978,503	5,970	32,793,134
United States of America	11,258	36,207,034	8,784	46,594,124
Argentina	1,301	5,363,681	761	5,120,775
Others	10,021	35,446,505	5,113	27,411,817
TOTAL TONS/US\$	30,723	107,995,723	20,628	111,919,850
PLUS GROUND	80	231,958	36	80,995
Total	30,803	108,227,681	20,665	112,000,845

Source: SECEX (Oct., 2011)

It includes black, white and green pepper, according to MERCOSUL (NCM) classification

4.2. Other pepper products:

a) Types (and volume, if available) of pepper products produced in the country.

Green pepper produced at Northern Region of Brazil (Pará State).

b) Exports of pepper by country of destination, volume and value during 2010 and estimate for 2011 as per attached format (Table 2)



Table 2

**EXPORT OF PEPPER PRODUCTS BY COUNTRY OF DESTINATION 2010 ESTIMATE
FOR 2011 AND PROJECTION FOR 2012 (Quantity in Mts an Value in US\$)**

Country Of Destination	Ground pepper		Green Pepper** In brine		Dehydrated Green Pepper		Pepper Oil		Pepper Oleoresin		Any other form	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
2010												
GERMANY	25	158,856										
OTHERS	55	73,102										
TOTAL :	80	231,958										
2011 (estimate)	80	230,000										
TOTAL :	80	230,000										
2011 (projection)	80	230,000										
TOTAL :	80	230,000										

Sources: SECEX (Oct., 2011).

* Besides black and white pepper, Brazil produces only Green Pepper. ** Green Pepper does not have a MERCOSUL classification.

4.3.Import of pepper (if any)

a) Import of pepper and pepper products by country of origin, volume and value during 2010 and 2011 (January up to the latest available) as per attached format (Table 3)

Table 3

**IMPORT OF PEPPER AND PEPPER PRODUCTS BY COUNTRY OF ORIGIN (Quantity in mt.
and Value in US\$)**

COUNTRY OF ORIGIN Black & White Pepper	2010		2011 from January to September	
	Qty(Mts.)	Value(US\$)	Qty(Mts.)	Value(US\$)
CHINA	5.61	31,256	*	*
INDIA	0.04	2,310	0.2	6,000
VIETNAM	0.46	16,456	0.9	33,418
Others	2.99	82,205	6.9	134,768
Total	9.1	132,227	7	174,182

Source: SECEX (Oct., 2011)

* - Trace.



b) **Total estimate of import of pepper and pepper products for the year 2011.** As shown in the previous table and country papers from preceding years, import of pepper in Brazil is not expressive.

c) **Projection of pepper import for 2012. 7 Mts.**

5. Summary on production, exports, imports, domestic consumption and carry - over stock of pepper in 2008, estimates for 2009 and projections for 2010 as per attached format (Table 4)

6. Issues related to:

6.1 Production and processing of pepper

- **Pest and diseases problem.** Fusariose (Root Rot) continues to be the most serious disease of pepper crops in Brazil, spreading through the soil and aerial parts of the plants by contact either with water, rains or winds, giving rise to putrefaction of the root system and drying up of branches and leaves.

It started in Brazil in the decade of 60' s and so far it' s considered one of the biggest restraint to the improvement of pepper' s productivity and longevity. Other diseases of less economic importance are yellow wilt, cucumber' s mosaic, and foot' s putridity.

- **Quality problem.** Pepper quality has been a constant concern to the government, growers and exporters and Brazilian pepper does not usually carries filth, or other impurities as can be seen in RASFF (European Union) or in OASIS (FDA/USA).

- **Pepper product development, etc.** Brazil started exports of ground black pepper and green pepper in brine to the USA and Germany market.

Although the fourth pepper world producer, domestic consumption in Brazil currently is of 6,000 tons (32 g per capita). Most of the Brazilian pepper is for export. Black pepper is used as a condiment or minor ingredient by the food industry.

6.2 Trade of pepper within the country and overseas

- **Marketing, channels.** Most of the Brazilian exports are made through an agent or broker

- **Problems encountered.** None.



- **Changes in government trade policies.** None

- **Rate of taxes and levies, etc.** FUNRURAL 2.30 % - grower social security fund, over producer.

6.3 Domestic consumption / per-capita consumption. 6,000 MTs / 32 g

6.4 Trade and Investment Policies

- **Investment incentives for agriculture and agricultural processing industry.** None.

- **Incentive for Joint venture.** None.

- **Tax incentive facilities.** None.

- **Further development.** None.

- **Export credit etc.** ACE – Anticipation of Export Credit, interest rate 10%-12% per year.

7. Development program for pepper

7.1 On-going national programs on pepper research and development:

- **to tackle problems of production and productivity of pepper holdings.** None.

- **to improve quality of pepper and pepper products.** Brazilian monitoring program, performed by the Ministry of Agriculture collects black pepper and started on 2007 (local plan – Pará state).

In 2009 a national monitoring program took place in supermarkets and main stakeholders.

The plan was institutionalized on 2010 as dealt in Normative Instruction nr 8, October 8th 2010.

Ground pepper is monitored by the Ministry of Health.

The monitoring program is based on Codex Alimentarius to check contaminants (*Salmonella*).

The results of the year 2010 (harvesting), to be published as a Normative Instruction, reckons 78% conformity within 23 samples randomly collected in Brazil.

Non conformity samples are traced back to producing establishments for investigation and to propose/notify corrective actions.



- to develop of new products or end users. The active principle of *Azadirachta indica* (indian neem) is being identified in Embrapa's research to obtain a commercial formula for fusariosis control.

- to promote products, consumption etc. None.

7.2 Measures taken for controlling pesticides residues of pepper/spices in the country which shall cover the information on:

- present pesticide uses / control (such as guidelines to farmers for pesticide uses).

- MRLs for pesticide residues control. The active ingredients registered at the Ministry of Agriculture, for pepper cultivation are:

No	Pesticide	Crop	MRL (mg/Kg)	Comments
1	Copper oxychloride	Black and red pepper.	Must comply with national regulation for raw vegetables.	Without restrictions related to the safe application period.
2	Sulfur	Black and red pepper.	Without restrictions.	Without restrictions.

According to the Phytosanitary Pesticides System – AGROFIT as already informed by Brazil Country Papers on 2008, 2009 and 2010, currently only Cupravit Blue BR pesticide from Bayer, whose active ingredient is the copper oxychloride, is registered at the Ministry of Agriculture, Livestock and Food Supply for use in the cultivation of black pepper.

In relation to the Maximum Residues Limit (MRL) of copper oxychloride in Black pepper, according to what is disposed in the monograph from the National Health Surveillance Agency – Anvisa, the maximum level of copper must comply with the specific legislation for contaminants in fresh food, when applicable.

There is no limit established for copper oxychloride, a mineral allowed for organic farming use. Also there is no MRL recommendation from Codex Alimentarius for copper oxychloride.

- How to ensure the effectiveness of the above two items.



To increase the number of pesticides registered for use in cultivations of small areas, category in which Black pepper falls into, the Joint Normative Instruction MAPA, Anvisa and IBAMA, No. 1 was published on February 24, 2010.

This normative establishes the guidelines and requirements for the registration of pesticides, their components and similar substances used for crops with insufficient phytosanitary support, as well as the allowed maximum residues limit.

The INC no. 01/2010 is a dynamic standard which allows the rural producers to include or change crops in the MRLs extrapolation groups, and this way allow the choice of better molecules for the control of pests and diseases of each crop. The adoption of this standard seeks to ensure the legalization for the use of pesticides which have agronomic efficiency for small crops and which are safe for human health and the environment.

7.3 Estimated acreage and production for the years 2010-2012.

Years	Acreage (ha)	Production (Mt.)
2010	20,000	34,000
2011	20,000	35,000
2012	20,000	35,000



Table 4.

SUMMARY OF PRODUCTION, DOMESTIC CONSUMPTION, EXPORT, IMPORT AND STOCK CARRY-OVER (IN METRIC TONS) DURING 2009, ESTIMATE FOR 2010 AND PROJECTION FOR 2011

Pepper	2010					2011 (estimate)						2012 (projection)					2012	
	Stock brought forward	Prod.	Import	Domestic Consump.	Export	Stock brought forward	Prod.	Import	Domestic Consumpt	Export-able	Export	Stock brought forward	Prod.	Import	Domestic Consumpt	Export-able	Export	Stock carry forward
Black Pepper	26,830	32,000	450	6,000	28,723	24,557	33,000	450	6,000	52,007	33,000	19,007	33,000	450	7,000	45,457	30,000	15,457
White Pepper	--	2,000	--	--	2,000	--	2,000	--	--	2,000	2,000	--	2,000	--	--	2,000	2,000	--
Total	26,830	34,000	450	6,000	30,723	24,557	35,000	450	6,000	54,007	35,000	19,007	35,000	450	7,000	47,457	32,000	15,457

Source: MAPA, SECEX (Nov., 2011).

Table 5.

Additional Information (to the extent available):

	2009 (estimate)	2010 (IBGE - Census)	2011 (projection)
Population	191,446,848	185,712,713	--
Per capita consumption (gm/person)			
Household consumption			
Industry sector consumption			
Catering service consumption			
Consumption for indigenous medicine			

Source: IBGE (Oct, 2010)