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International Agricultural Trade and Policy Center

PROBABLE ECONOMIC EFFECTS OF THE REDUCTION OR ELIMINATION OF U.S. TARIFFS ON SELECTED U.S. FRESH VEGETABLES

By

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PBTC 02-2 **May 2002**

POLICY BRIEF SERIES

UNIVERSITY OF FLORIDA

Institute of Food and Agricultural Sciences

INTERNATIONAL AGRICULTURAL TRADE AND POLICY CENTER

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- Facilitate dissemination of agricultural trade related research results and publications
- Encourage interaction between researchers, business and industry groups, state and federal agencies, and policymakers in the examination and discussion of agricultural trade policy questions
- Provide support to initiatives that enable a better understanding of trade and policy issues that impact the competitiveness of Florida and southeastern agriculture specialty crops and livestock in the U.S. and international markets

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The U.S. vegetable industry is one of the largest global suppliers of fresh vegetables in the world. U.S. producers grew more than 21.5 million metric tons of fresh produce in 2001. The high value nature of fresh vegetables makes these crops attractive to both domestic and foreign producers.

Consumption of fresh vegetables has increased significantly over the last decade as consumers have become more health conscious and as more variety and higher quality produce has become available. U.S. per capita consumption of fresh vegetables increased from 142.4 pounds per person in 1990 to 176.1 pounds per person in 2000. Most of the major vegetables followed this trend with fresh tomatoes increasing from 15.5 to 17.8 pounds per person over this period, bell peppers increasing from 4.5 to 8.1 pounds per person and cucumbers increasing from 4.7 to 6.7 pounds per person.[1]

Consumption of fresh tomatoes in the U.S. was valued at $1.638 billion in 2000 with imports accounting for 39% of this value. U.S. growers produced 1,676.6 MMT and exported 186,052 metric tons (78% to Canada, 13.6% to Mexico), while imports totaled 730,063 metric tons (80% from Mexico, 13.9% from Canada). Imports accounted for 33% of the U.S. consumption quantity of fresh tomatoes.

Consumption of bell peppers in the U.S. was valued at $703 million in 2000. U.S. production totaled 885,648 metric tons and exports totaled 71,486 metric tons, while

[1] Economic Research Service/USDA. "Vegetables and Specialties Situation and Outlook Yearbook." VGS-284. July 2001: 12-13.

imports totaled 198,176 metric tons. Imports accounted for 19% of the U.S. consumption quantity of fresh bell peppers.

Consumption of fresh cucumbers in the U.S. totaled almost $379 million in 2000. U.S. production totaled 522,543 metric tons and exports totaled 25,900 metric tons, while imports totaled 346,049 metric tons. Imports accounted for 41% of the U.S. consumption quantity of fresh cucumbers.

Impacts of Tariff Reductions

Tables 1 through 3 show the tariff structures and import values for fresh tomatoes, bell peppers and cucumbers. Negotiations of trade agreements within the World Trade Organization (WTO) or as part of the Free Trade Area of the Americas (FTAA) could significantly lower these tariffs.

The U.S. International Trade Commission uses the COMPAS model, a computable general equilibrium model, to estimate the potential impacts of tariffs imposed on imports. The COMPAS model was used in this analysis to estimate the potential impact of tariff reductions on tomatoes, bell peppers and cucumbers. The COMPAS model requires certain inputs in order to estimate the impacts of tariff reduction. The key data required include the *ad valorem* equivalent tariff collected on imports, the elasticity of substitution between the domestic product and imports, the domestic demand elasticity, the supply elasticity for domestic product and the import supply elasticity. The model also requires values for domestic production (quantity and value) and imports (quantity and value). Production and value for domestic production of these crops were collected from USDA sources. The quantity and value data for imported values of these crops (tomatoes, bell peppers and squash) were collected from U.S.

Department of Commerce. The imported values used in this analysis are those for countries enjoying no special preference. As such, that would exclude Canada and Mexico since they are part of the North American Free Trade Agreement that will eventually lead to elimination of tariffs on these commodities. It would also eliminate the Caribbean Basin Initiative (CBI) who already enjoy duty free entry. It also excludes Israel and Jordan. The supply and demand elasticities were derived from previously published works.

The results of those evaluations are detailed in tables 4 through 6. The results indicate that elimination of tariffs on these commodities will have a small impact because the larger countries exporting to the U.S. already enjoy zero tariffs or are on a schedule to eliminate tariffs through existing trade agreements.

Current Production Levels

Tables 7 through 9 show production of all tomatoes (fresh and processed), peppers and cucumbers in 2001 for countries by region in the western hemisphere (Caribbean, Central America and South America). Table 10 shows the regional production of these vegetables with Mexico, Canada and the U.S. included. The results demonstrate that the U.S. is by far the largest producer of tomatoes and cucumbers in the western hemisphere with 11.27 MMT of tomatoes and 1.078 MMT of fresh cucumbers. Mexico is the second largest producer of cucumbers and peppers, but South America is the second largest producing area for fresh tomatoes, producing 5.7 MMT of fresh tomatoes. Brazil alone produces 2.99 MMT of tomatoes making it the second largest tomato producing country in the western hemisphere, followed by Mexico (2.18 MMT), Chile (1.15 MMT), Argentina (0.7 MMT) and Canada (0.67 MMT). From a productivity

point of view, clearly Brazil is the largest threat to become a regional supplier of fresh tomatoes even thought they do not currently export tomatoes in significant volumes to the U.S. As technologies improve and producers in these countries adopt longer shelf life production and shipping practices, the threat exists that they could become significant competitors in a regional market. The industry should monitor this situation and be aware that the threat of increased competition does exist in a regional trading zone such as a FTAA.

The largest threat to U.S. producers from current countries that export to the U.S. are Mexico and Canada, but those countries are already on schedule to eliminate tariffs through NAFTA. Changes in production technologies and or marketing practices could bring other countries into the global market. It would appear that countries like Brazil pose potential threats given the large productive capability they possess.

Table 1. U.S. tariff structure and import value for fresh tomatoes.

Period	Tariff	Ad Valorem Equivalent	2001 Import Value
	(cents/kg)	(--%--)	($million)
11/15 – 2/end	2.8	3.1	253.8
3/1 – 7/14 9/1 – 11/14	3.9	4.6	395.6
7/15 – 8/31	2.8	3.0	72.1

Source: U.S. International Trade Commission. 2002 Tariff Database. http://dataweb.usitc.gov

Table 2. U.S. tariff structure and import value for fresh bell peppers (excluding chili type).

Period	Tariff	Ad Valorem Equivalent	2001 Import Value
	(cents/kg)	(--%--)	($million)
Year	4.7	3.0	328.5

Source: U.S. International Trade Commission. 2002 Tariff Database. http://dataweb.usitc.gov

Table 3. U.S. tariff structure and import value for fresh cucumbers.

Period	Tariff	Ad Valorem Equivalent	2001 Import Value
	(cents/kg)	(--%--)	($million)
12/1 – 2/end	4.2	10.6	64.8
3/1 – 4/30	5.6	8.7	51.0
5/1 – 6/30 9/1 – 11/30	5.6	8.4	63.2
7/1 – 8/31	1.5	2.1	21.5

Source: U.S. International Trade Commission. 2002 Tariff Database. http://dataweb.usitc.gov

Table 4. Expected Impact of tariff reduction on the U.S. tomato industry, by season.

Season	Ad Valorem Tariff	Price Impact	Production Impact		Revenue Impact	
	(---------%----------)		(1,000 cwt)	(%)	($1,000)	(%)
11/15 – 2/end	3.1	(0.6)	(33)	(0.4)	(609.6)	(1.0)
3/1 – 7/14 9/1 – 11/14	4.6	(0.5)	(69)	(0.3)	(1,520.1)	(0.8)
7/15 – 8/31	3.0	(0.2)	(7)	(0.2)	(242.0)	(0.4)

Table 5. Expected Impact of tariff reduction on the U.S. bell peppers industry, by season.

Season	Ad Valorem Tariff	Price Impact	Production Impact		Revenue Impact	
	(---------%----------)		(1,000 cwt)	(%)	($1,000)	(%)
All Year	3.0	(0.5)	(53)	(0.4)	(1,444.7)	(0.9)

Table 6. Expected Impact of tariff reduction on the U.S. cucumbers industry, by season.

Season	Ad Valorem Tariff	Price Impact	Production Impact		Revenue Impact	
	(---------%----------)		(1,000 cwt)	(%)	($1,000)	(%)
12/1 – 2/end	10.6	(2.0)	(9)	(1.5)	(159.4)	(3.6)
3/1 – 4/30	8.7	(0.2)	(2)	(0.1)	(42.8)	(0.3)
5/1 – 6/30 9/1 – 11/30	8.4	(0.2)	(5)	(0.1)	(88.8)	(0.3)
7/1 – 8/31	2.1	0.0	0	0	(5.3)	0

Figure 7. Caribbean Production of Tomatoes, Peppers and Cucumbers in Year 2001			
Country	**Tomato Production per (MT)**	**Chillies & Peppers, Green Production per (MT)**	**Cucumbers and Gherkins Production per (MT)**
Antigua and Barbuda	170	60	200
Bahamas	3,419	0	0
Barbados	650	900	1,300
Dominica	200	0	1,650
Dominican Republic	285,546	14,557	2,500
Grenada	60	0	100
Haiti	2,300	0	0
Jamaica	21,500	4,500	13,500
Saint Kitts and Nevis	80	60	80
Saint Lucia	0	0	0
Saint Vincent and Grenadines	0	380	0
Trinidad and Tobago	2,728	400	2,572
Total	**316,653**	**20,857**	**21,902**

Figure 8. Central American Production of Tomatoes, Peppers and Cucumbers in Year 2001			
Country	**Tomato Production per (MT)**	**Chillies & Peppers, Green Production per (MT)**	**Cucumbers and Gherkins Production per (MT)**
Belize	0	0	0
Costa Rica	30,000	1,063	0
El Salvador	21,065	3,676	8,000
Guatemala	149,000	1,800	0
Honduras	31,000	1,050	24,000
Nicaragua	6,234	0	0
Panama	17,049	2,100	1,400
Total	**254,348**	**9,689**	**33,400**

Figure 9. South American Production of Tomatoes, Peppers and Cucumbers in Year 2001			
Country	Tomato Production per (MT)	Chillies & Peppers, Green Production per (MT)	Cucumbers and Gherkins Production per (MT)
Argentina	700,000	121,000	0
Bolivia	137,816	5,800	3,800
Brazil	2,993,651	0	0
Chile	1,157,000	60,000	22,000
Colombia	145,000	10,500	5,100
Ecuador	70,431	13,836	428
Guyana	1,250	0	0
Paraguay	60,000	9,500	0
Peru	197,300	12,000	18,068
Suriname	960	0	1,500
Uruguay	36,000	7,200	0
Venezuela, Boliv Rep of	215,000	80,000	18,500
Total	**5,714,408**	**319,836**	**69,396**

Figure 10. Western Hemisphere Production of Tomatoes, Peppers and Cucumbers in Year 2001			
Country	Tomato Production per (MT)	Chillies & Peppers, Green Production per (MT)	Cucumbers and Gherkins Production per (MT)
Canada	670,000	30,872	110,000
United States	11,270,000	885,630	1,078,800
Mexico	2,180,000	1,800,000	400,000
Caribbean	316,653	20,857	21,902
Central America	254,348	9,689	33,400
South America	5,714,408	319,836	69,396
Total	**20,405,540**	**3,066,884**	**1,713,498**