Mexico-U.S. Avocado Trade Expansion

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Recent attention to agricultural trade policy has turned to issues of technical barriers, particularly sanitary and phytosanitary (SPS) regulations, that constrain movement of products across international borders. It is intuitive that there are public good arguments that make some SPS restrictions necessary to insure a safe food supply and protect domestic animal herds and plant stocks from pests and diseases. In other cases, regulations rationalized on technical grounds seem to lack firm scientific foundations and appear, at least to potential beneficiaries of expanded trade, to be imposed primarily to shield domestic producers from competition. That such controversies arise is not surprising. Their likelihood is suggested by the economic theory of regulation, sometimes referred to as "capture" theory. Applied to technical trade barriers, the theory suggests that when there is doubt about the merit of a technical restriction, domestic interest groups will often succeed in obtaining protective decisions from domestic regulatory agencies.

Both NAFTA and the WTO address issues of SPS and other technical trade barriers. Under NAFTA, it was agreed that each country retains the right to adopt SPS measures to protect human, animal, and plant life and health, that each country has the right to establish appropriate levels of protection, and that SPS measures must be based on scientific evidence, be non-discriminatory, and be applied only to the extent necessary. The WTO provides even stronger

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language about the use and misuse of technical trade barriers. In both cases, multilateral dispute settlement procedures are established. If an arbitration panel decides that an import regulation violates the NAFTA or WTO provisions, the non-compliant country has the option of either changing the measure or keeping it and compensating the challenging country for the value of impaired trade.

In light of the economic theory of regulation, the NAFTA and WTO provisions that address technical trade barriers are institutional innovations intended to moderate the influence of domestic interest groups on their national regulatory agencies. One hope of these agreements is that the enunciation of the principles for SPS regulations and the existence of binding adjudicatory mechanisms will contribute to negotiated resolution of some disagreements without recourse to the formal dispute settlement process.

One approach to easing technical trade restrictions is to shift from most restrictive instruments such as complete bans to less restrictive instruments of pest control. The key to such an alternative is often a systems approach to risk management, whereby a set of procedures are specified that in principle reduce the externality risk associated with trade of a commodity. Adoption of systems approaches rest on a firm foundation in Article 5.6 of the WTO SPS Agreement, which states that Members shall ensure that their measures "are not more trade-restrictive than required to achieve their appropriate level of sanitary or phytosanitary protection" (WTO, 1994).

Since 1997, a long and contentious dispute between Mexico and the United States over U.S. restrictions on importation of Hass avocados has been partially resolved by replacing an import ban with limited trade under a system of risk mitigation measures. This case illustrates that progress can be made through adoption of a systems approach—at least when the risk issues

can be sharply delineated and addressed and governments are firmly committed to the negotiations. Easing of the full import ban that has occurred must be counted as progress, but ti has opened access to less than 10 percent of the U.S. market to Mexican producers. It remains uncertain how much more trade opening will eventually be achieved.

The Avocado Quarantine

The ban on imports of Mexican avocados was promulgated in 1914 when there were no known controls (chemical or natural predators) for certain host-specific avocado pests prevalent in Mexico but not present in the United States. Subsequent development of modern pesticides and cultural practices has allowed the Mexican state of Michoacan to establish an industry of approved export-oriented avocado orchards. These orchards have successfully met the pest control standards of countries such as Canada and Japan, where there are concerns about transmission of fruit fly infestataions. Mexican quarantine authorities have argued that the Michoacan avocado export protocols also provide adequate protection against pest risks of U.S. concern: that the region has low incidence of pests of quarantine significance, that the Hass avocado is not a preferred host for some pests of concern, and that a systems approach to handling fruit for export has proven effective in eliminating risks of pest infestations being carried abroad. Mexico contends that the U.S. ban cannot be justified on a risk basis, but is maintained to protect the U.S. industry economically. The U.S. avocado industry, concentrated in southern California, has bitterly opposed opening the U.S. domestic market to Mexican avocados. The industry acknowledges that it has received prices well above those of Mexican exports, but asserts that it fears pest infestations associated with trade not competition in the marketplace. Domestic U.S. producers have challenged Mexican assessments of pest risks and the effectiveness of the systems approach to risk management.

Caught in the middle of this controversy has been the U.S. Department of Agriculture. Twice during the 1970s USDA took preliminary steps to ease the avocado import ban, but in both cases the decision was aborted.[1] The issue lay unresolved through the 1980s, but NAFTA negotiations provided an opportunity for Mexico to raise its concerns again. Avocados dominated the agenda of many meetings of a joint Phytosanitary Working Group, where scientists from USDA and Mexico's Direccion General de Sanidad Vegetal (DIGSV) sparred over data requirements, research design, and interpretation of research results concerning possible lifting of the import ban. The technical debates centered on assessment of pest populations, the host status of Hass avocados for fruit flies, and the adequacy of various proposed pest-risk mitigation strategies.

It took four years of bi-lateral procedural negotiations, data collection and analysis before USDA agreed to consider a Mexican plan for easing the avocado quarantine under a systems approach to pest risk mitigation. With some further safeguards, a proposed rule was published by USDA in July 1995 to allow imports of Mexican avocados grown and processed under specified conditions. The proposed systems approach included pre-harvest, harvest, packing, transport, and shipping, measures designed to reduce pest risks. The distribution of imports was to be further limited to the northeastern United States, to avoid geographic proximity with regions susceptible to pest risks, and to four winter months when the risk of establishment of pests was mitigated by adverse weather.[2] USDA concluded that its proposed approach would provide an adequate level of security to domestic growers. Overall, USDA reported that with the proposed systems approach in place a seed pest or fruit fly outbreak was estimated to occur on average less than once every 1,000,000 years and a stem weevil outbreak might occur on average once every

[1] Roberts and Orden (1996) provide a detailed analytic chronology of the avocado dispute.

11,402 years. A recent USDA assessment of pest risk reductions from specific measures is shown in table 4.1.

Domestic Opposition to Change

With the geographic and seasonal restrictions in USDA's proposed rule, partial easing of the ban opened less than five percent of the annual U.S. market to Mexican avocados. Even this partial access was fought aggressively by the domestic industry. The opposition was coordinated by the California Avocado Commission (CAC), which had closely monitored the deliberations from the outset of the NAFTA negotiations. The industry made the argument that the avocado quarantine should not be sacrificed to the political imperative of achieving a trade agreement. This was an aggressive strategy by the industry that turned on its head the conventional perception that regulatory processes are often under excessive pressure not from foreign but from domestic interest groups. Numerous declarations were made by the U.S. growers to the effect that "science might be traded off in a rush to sign a trade deal."[3]

The CAC argument was that imports of Mexican avocados under the proposed systems approach posed an unacceptable risk of pest infestation to domestic groves. The industry asserted that the surveys of pest incidence had failed to establish low population levels in the Michoacan growing area, that the proposed monitoring protocols were inadequate, and that Hass avocados were a better host of fruit flies than Mexico acknowledged. Technical criticism of the pest surveys were detailed, including, for example, objections to incorrect trap placement, weak trapping bait, insufficient climatological records, and inadequate trapping densities.[4] Any infestations of domestic groves that resulted from importation of Mexican avocados would be

[2] The region referred to as the northeastern United States or northeast in this paper includes two regions often separated in avocado shipment data: the northeast and east central regions.
[3] "Free Trade with Mexico," Betsey Blanchard Chess, *California Grower* , 6/91, p. 19.
[4] Statement by the California Avocado Commission, Docket No. 94 -116-1, 1/3/95.

costly to contain due to U.S. pesticide regulations and the close proximity of the domestic groves to residential neighborhoods. Thus, the CAC recommended that Mexico should be allowed to export avocados only under stringent conditions: that it could establish pest-free zones, that the imported avocados were treated with a pesticide which assured at a very high probability level that exotic pests were eliminated, or that additional scientific research unequivocally established that Hass avocados were not hosts of pests which are injurious to avocados and other fruits and vegetables grown in the United States.[5]

The conditions specified by the CAC for amendment of the avocado quarantine could effectively have preclude importation of Hass avocados from Mexico for the foreseeable future. The first condition, establishing and maintaining a pest free zone, requires substantial eradication, monitoring, and quarantine enforcement costs well beyond the perimeters of commercial export groves in Mexico. Although it might eventually prove feasible technically, such an approach was regarded as uneconomical by Mexican officials who believed pest risks were already negligible. On the second condition, all parties agreed that no adequate post-harvest treatment was available. The third condition, strictly interpreted, also could not be met. The results of DIGSV's fruit fly host status research had already indicated that fruit flies will attack Hass avocados shortly after they have been harvested. Additional research to rigorously establish the host status of unharvested Hass avocados could only confirm that they are non-preferred hosts, instead of the higher standard of "unequivocal non-host" that the CAC recommended.

Industry opposition orchestrated by the CAC was effective in temporarily blocking change to the quarantine when USDA announced it would not make a decision on a final rule to

allow avocado imports in time for the 1995-96 winter shipping season. The CAC kept up its pressure in 1996. It threatened legal action to block lifting of the ban and attempted to circumscribe USDA authority through an amendment to appropriations legislation. Full-page advertisements were placed in several national newspapers by the CAC. Against the backdrop of a hangman's noose or smoking gun, these ads claimed that "The USDA is about to sign the death warrant for a billion dollar American industry."[6] The CAC also filed a new petition with USDA in March 1996, asserting that pest surveys results for 1995-96 showed higher levels of host-specific and fruit fly infestations in Mexican orchards than had previously been reported and that there had been procedural irregularities in the rulemaking process that involved violation of federal conflict-of-interest law.[7] The CAC petition argued that the new pest survey results and procedure irregularities invalidated the rulemaking process and requested another public comment period before a final ruling was made to allow avocado imports from Mexico.

Economic Assessment

USDA's regulatory procedures for SPS decisions require sequential analysis—first determination that there is essentially no risk associated with a proposed rule and second, on that basis, that economic impacts of the rule be assessed. Such a sequential approach to decision making of this type places greater emphasis on risk assessment than on comprehensive cost-benefit analysis. When the mandate of regulatory authorities is stated in such strong terms as protecting the domestic economy from negative SPS externalities arising from trade, as it often is, then product bans and other severe quarantine measures emerge quite naturally as policy

[5] Statement by the CAC for Docket No. 94-116-1, ANPR Concerning the Importation of Fresh Hass Avocado Fruit Grown in Michoacan, Mexico, 2/95, p. 2.
[6] For example, *The Washington Post*, 3/11/96, p. A16.
[7] "American Avocado Growers Uncover New Field Surveys on Mexican Avocado Pest Infestations," PR Newswire, 3/28/96.

outcomes. A product ban is a high level of intervention to address an SPS externality, but a ban does eliminate the externality risk to the extent that trade is its proximate cause.

Even within the risk assessment dimension, there is plenty of room for dispute. First, issues arise about whether an externality threat exists in a given situation. Second, a ban may or may not be least trade distorting—perhaps there is another way to eliminate the externality risk, one that allows the product to be traded under some specified conditions. Either way, when the policy decision is perceived only in the risk assessment dimension, there is no impetus to ask whether the cost of the policy is warranted by the benefits, that is whether the level of intervention needed to achieve the risk-reduction objective is also desirable on economic criteria, such as maximizing the expected contribution of the affected markets to national welfare.

In the avocado case, the contestation over the proposed rule brought to light information about pest risks that provided the basis for a cost-benefit analysis taking uncertainty about pest infestation into account (Orden and Romano, 1996). The issues that arise in evaluating the economic effects of either full or partial easing the an import ban are illustrated in figures 1 and 2, assuming a fixed world price for the product. The first figure shows the effects of free trade when a pest infestation may raise domestic costs. The domestic price P_{D1} falls to the world price P_W and consumer surplus increases (by C+D+E) whether or not an infestation occurs. Producer surplus falls by C+D (the trade effect) and additionally by G (the infestation effect) if pests raises production costs and lower yields with certainty, shifting domestic supply from S to S'. Consumers are always better off, producers are always worse off, and the net effect on welfare (E-G) can be positive or negative. On a probabilistic basis, the expected domestic supply function will lie between S and S', with its location depending on the assumed level of pest infestation risk.

The analysis is more complicated when only a limited quantity of imports are allowed. Ignoring regional considerations, the limited imports would lower the domestic price if there is no pest infestation, but to P_{D2} in figure 2 not to the world price level. The effects on consumers, producers and net welfare are fractions of the outcomes with unrestricted free trade. Pest infestation reduces domestic supply and affects the domestic price in the opposite direction from imports. The equilibrium price can rise or fall. When the domestic price rises, as shown from P_{D1} to P_{D3} in figure 2, consumers are worse off (by c+d). Producers surplus rises (by c) with the higher prices but falls due to higher production costs (by f+i+k). Producers may be better or worse off than at the initial equilibrium (better if c>f+i+k). Producers may also be better or worse off than with trade but without a pest infestation (better if c+e>i+k). Whatever the outcome for producers, social welfare falls (by d+f+i+k) compared to its level at the initial equilibrium, or (by d+f+i+k+g) compared to its level with trade but without pest infestation.[8]

In their empirical analysis, Orden and Romano divided the domestic U.S. avocado market into two submarkets—the northeastern winter regional market and the national aggregate for all other regions and seasons. In the northeastern winter regional market, the domestic price was assumed to fall to the price level of exports from Mexico, substantially below the earlier domestic price. For the rest of the U.S., an equilibrium price was determined by domestic supply and aggregate demand with the northeastern winter regional market excluded.[9]

The proposed partial easing of the avocado import ban had expected effects if no pest infestation occurred. In the northeastern region, the winter season price fell by 35% and

[8] If the net effect of trade and a pest infestation is for the equilibrium domestic price to fall (not shown), consumers are made better off and producers worse off than without trade or pest infestation, consumers gain less, and producers may lose more or less than with trade but without pest infestation, and net welfare may rise or fall (compared to the initial equilibrium) depending on whether the net consumer gain from lower prices exceeds the infestation losses of producers.

consumption increased. The domestic price for the remaining aggregated U.S. market fell by 1.3 percent, as displacement effects from the northeastern winter market were absorbed by a combination of expanded consumption elsewhere and reduced domestic supply. A net national welfare gains of $2.5 million resulted (about 2 percent of initial total consumer plus producer surplus), mostly due to the lower price in the northeast. Consumer surplus increased by $2.2 million outside of the northeast, but producer surplus fell by a similar amount, so the net welfare gain was small outside of the northeastern winter market. In contrast, a full liberalization of trade (which was not under consideration by USDA) was estimated to depress domestic avocado production by as much as 50 percent after full adjustment to lower prices, and to raise consumer surplus by nearly $90 million nationwide.

Orden and Romano also considered the economic effects of the proposed rule if a pest infestation occurred. A pest infestation increased marginal costs and lowered yields, reducing domestic supply. In the worst-case scenario, reduced availability of avocados under the partial easing of the import ban pushed up the equilibrium domestic price (excluding the northeastern winter regional market) by 30 percent. The domestic price increase partly offset the effects on producers of lower output and higher production costs but their net loss was $14.7 million, almost seven times as large as from partial easing of the ban alone. A larger economic effect of the pest infestation was felt by consumers outside of the northeastern winter market: their surplus fell by $43.5 million with the increased domestic price. Partial easing of the avocado quarantine would not be sound phytosanitary or economic policy under these circumstances. Yet on a probabilistic basis, it took a much higher likelihood of pest infestation than reported by USDA to turn expected net welfare effects negative. For full trade liberalization, even under the worst-case

[9] See Orden and Romano (1996), Roberts Josling and Orden (1999), and Orden, Narrod and Glauber (2001) for more detailed descriptions of the analysis.

pest infestation, there was a positive benefit-cost relationship as consumer gains from lower prices more than offset the domestic producer losses.

Easing of the Ban in 1997

Despite continued industry opposition, in February 1997 USDA issued a final rule permitting limited importation of avocados from Mexico under the systems approach. In rejecting the industry arguments about pest risk, USDA reasserted its positive assessment of the safety of the proposed approach and responded to numerous comments received during the public comment period of the rulemaking process. USDA also responded to the concerns raise in the March 1996 CAC petition and subsequent CAC communication about the pending decision. It found neither substantive nor procedural grounds for further delay of a decision to allow limited imports under the systems approach being adopted (USDA, 1997). In its economic assessment, USDA evaluated effects of the rule based on diversion of from 10 to 50 percent of past Mexican exports during November-February to the U.S. market. A diversion of 50 percent resulted in imports near the level estimated by Orden and Romano. For this level of imports, USDA found similar price effects in the Northeast region and the rest of the country, but its estimates of producer surplus losses and consumer surplus gains were larger. Once the final rule was published, and imports scheduled to be allowed for the first time starting in November 1997, the domestic avocado industry did not file suit to block the USDA decision.

Under the USDA ruling, Mexican avocados began to enter the U.S. market during the winter of 1997-98. After four shipping seasons, no pest infestations traceable to avocado imports had been detected, lending credibility to the systems approach. Shipments of California avocados to the northeast winter market were largely displaced by imports from Mexico—the California shipments fell to just 1.1 million pounds during 1999-2000 from an average of 7.7 million pounds during 1986-94 (USDA/APHIS, 2001). Wholesale prices of avocados imported from Mexico have averaged about 25 percent less than wholesale prices of domestic avocados since

1997. This differential is consistent with predictions of a regional price difference from the rest of the U.S. market once imports from Mexico became available in the northeast. Avocados from Mexico and California also appear to be imperfect substitutes in the northeast market, where a similar wholesale price differential has persisted. Wholesale prices have remained above import prices, which have averaged about $0.72 per pound. This is consistent with historical import price-wholesale price differentials observed for avocados from Chile in earlier years (USDA/ APHIS, 1997).

The limited opening of trade under the 1997 rule has provided more export opportunity to Mexico than expected. Imports after the first year have averaged over 23 million pounds from over 500 separate shipments (21.5 million pounds in 560 shipments in 1998-99, 25.9 million pounds in 669 shipments in 1999-2000, and 22.5 million pounds in 576 shipments in 2000-01). The level of imports from Mexico has been well above the displaced California shipments and nearly double the import demand of 13 million pounds in the Northeast winter market predicted by Orden and Romano at the lower prices expected once imports from Mexico were allowed.

The extent to which Mexican imports have exceeded either displacements of California sales or predictions from the economic model suggest that one effect of easing of the quarantine has been expanded consumer demand due to better seasonal availability of avocados. To the extent that market expansion occurs, it provides benefits to consumers and Mexican producers at little cost to domestic producers. Prior to 1997, Chile was the major producer of avocados during the September-December period, and Chile still accounts for nearly five times as much of the total U.S. supply as Mexico. Avocados from Mexico compete with Chilean exports, but have not dampened total Chilean market sales. The value of avocado imports from Chile has grown from $16 million in 1997-98 to $51 million in 1998-99, $35 million in 1999-2000, and $74 million in

2000-01. Simultaneous growth in imports from Mexico and Chile has occurred in the context of a drop in U.S. production, which fell by an average of 35 million pounds during the three seasons 1997-98 to 1999-2000 compared to the average for the two preceding seasons. This shows that imports can serve to stabilize the market in the face of domestic supply variability, thus stabilizing consumer product availability and prices, as well as offering a product competitive with domestic production.

Increased Access in 2001

Based on early success of the avocado import program, in September 1999 Mexico requested that USDA expand its geographic and seasonal access to the U.S. market. USDA acted within a year to obtain public comments on this request and by November 2001 issued an amended final rule. The revised rule added access for avocados from Mexico to a west-central region and increased the shipping season to six winter months. Adding the west-central region increased the domestic shipments with which Mexican avocados would compete from a past average of 7.7 million pounds over 1986-94 to 10.5 million pounds. Increasing the length of the import season increased the domestic shipments with which the Mexican avocados would compete from 7.7 million pounds to 14.1 million pounds for the original access area, and to 29.3 million pounds for the expanded area. Thus, the market access is increased substantially for Mexico by the 2001 rule. Issuance of the revised rule encountered less industry opposition than the initial easing of the quarantine. Still, USDA had to overrule a late CAC petition to suspend its decision process based on a court ruling against the U.S. government on an earlier decision to permit citrus imports from Argentina.

Conclusion

The sequential issuance of the 1997 and 2001 USDA rules allowing avocado imports from Mexico are an example of successful adoption of a systems approach to risk mitigation that is less trade distorting than a complete ban. The 2001 ruling more than doubled the proportion of the total U.S. market to which Mexico has access, but that proportion remains less than 10 percent. Some further progress toward trade liberalization may be possible under the precedent set in these two rules. USDA's systems approach rests on numerous risk mitigation measures. Among these, the seasonal restriction "winter shipping only" is estimated to reduce risk for just two types of pests and by only 50-90%, which is relatively low compared to other measures (see table 4.1). Completely relaxing the seasonal restrictions on shipments of Mexican avocados to the northeast and west-central regions would again more than double the proportion of the U.S. market to which Mexico has access, and might be relatively easy to justify. Attaining access to additional regions in the southeast, southwest and pacific could prove more problematic. Limited U.S. distribution is credited with reducing all pest risks by as much as 99 percent. Unless a future case can be made that other measures provide sufficient pest risk protection without the geographic restriction, the scope for Mexican access to the U.S. market may be permanently constrained to those parts of the country where consumption is relatively low. Thus, the avocado case also illustrates how difficult it is to make progress on trade expansion when there are complex risk issues at stake and a strong domestic industry is affected by the decision making outcome.

References

Orden, David and Eduardo Romano. 1996. "The Avocado Dispute and Other Technical Barriers to Agricultural Trade Under NAFTA." Invited paper presented at the conference on NAFTA and Agriculture: Is the Experiment Working, San Antonio, Texas, November.

Orden David, Clare Narrod, and Joseph Glauber. 2001. "Least Trade-Restrictive SPS Policies: An Analytic Framework is there but Questions Remain," in The Economics of Quarantine and the SPS Agreement (Kym Anderson, Cheryl McRae and David Wilson, editors), Adelaide: Centre for International Economic Studies.

Roberts, Donna and David Orden. 1996. "Determinants of Technical Barriers to Trade: The Case of U.S. Phytosanitary Restrictions on Mexican Avocados, 1972-1995," in Understanding Technical Barriers to Agricultural Trade (David Orden and Donna Roberts, editors), St. Paul, MN: International Agricultural Trade Research Consortium, Department of Applied Economics, University of Minnesota.

Roberts, Donna, Timothy Josling and David Orden (1998). Technical Barriers to Trade: An Analytic Framework, USDA/ERS Agricultural Economic Report 1876, March.

United States Department of Agriculture (USDA). 1995. "Notice of Proposed Rule on Importation of Hass Avocados." Federal Register 7 CFR Part 319, Docket 94-116-3, pp. 34832-34842, July 3.

United States Department of Agriculture (USDA). 1997. "Importation of Hass Avocado Fruit Grown in Michoacan, Mexico." Federal Register 7 CFR Part 319, Docket 94-116-5, February 5.

United States Department of Agriculture (USDA). 2001. "Mexican Hass Avocado Import Program: Final Rule."Federal Register 7 CFR Part 319, Docket 00-003-4, pp. 55530-55552, November 1.

United States Department of Agriculture, Animal and Plant Health Inspection Service (USDA/APHIS). 2001. "Regulatory Impact and Regulatory Flexibility Analysis: The Potential Economic Impact of Expanded Importation of Hass Avocados from Mexico." October.

World Trade Organization. 1994. The Results of the Uruguay Round of Multilateral Trade Negotiations: The Legal Texts. GATT Secretariat, Geneva, Switzerland.

Table 4.1. Pest Risk Reductions under a Systems Approach to importation of Mexican Avocados

Risk mitigation measures	Pests of quarantine concern					
	Fruit flies: *Anastrepha* spp.	Small avocado seed weevils: *Conotrachelis* spp.	Avocado stem weevil: *Copturus aguacatae*	Large avocado seed weevil: *Heilipus lauri*	Avocado seed moth: *Stenoma catenifer*	Hitchhikers and other pests
	Percentage risk reduction					
Field surveys	40 – 60	95 – 99	80 – 95	95 – 99	95 – 99	40 – 75
Trapping and field treatments	55 – 75	0	0	0	0	3 – 20
Field sanitation	75 – 95	15 – 35	70 – 90	15 – 35	15 – 35	20 – 40
Host resistance	95 – 99.9	0	0	0	0	0
Post-harvest safeguards	60 – 90	0	0	0	0	40 – 60
Packinghouse inspection and fruit cutting	25 – 40	50 – 75	40 – 60	50 – 75	50 – 75	30 – 50
Port-of-arrival inspection	50 – 70	50 – 70	50 – 70	50 – 75	50 – 75	60 – 80
Winter shipping only	60 – 90	0	0	0	0	50 – 75
Limited U.S. distribution	95 – 99	95 – 99	90 – 99	95 – 99	95 – 99	75 - 95

Source: United States Department of Agriculture. 2001.

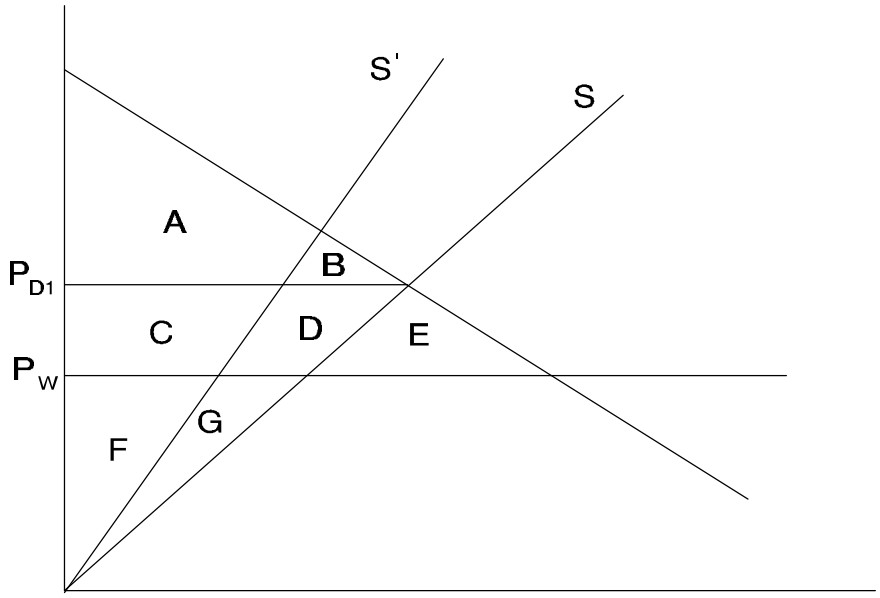

Figure 1. Free Trade

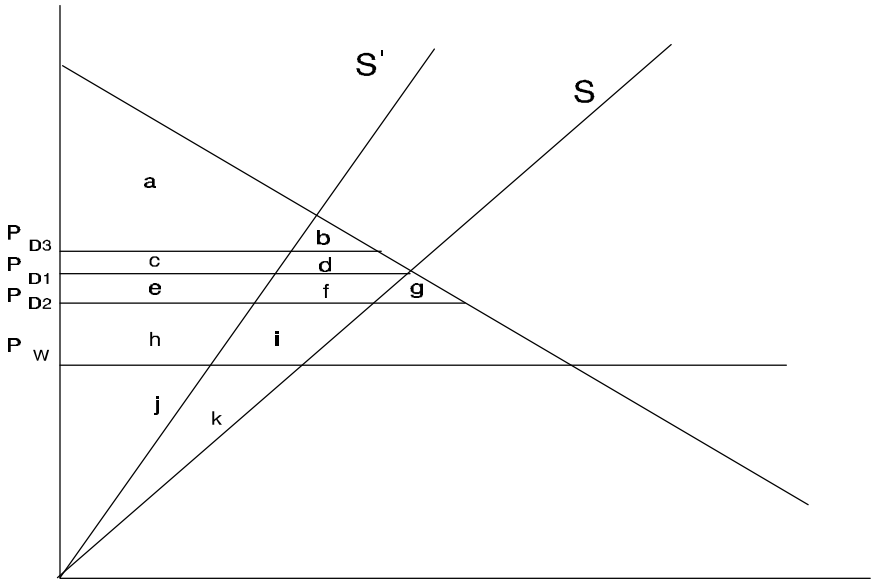

Figure 2. Limited Trade

Effects of Trade When Pest Infestations Raise Domestic Production Costs