

**SANITARY AND PHYTOSANITARY  
MEASURES AT THE WTO:  
BALANCING BIOLOGICAL RISK  
AND COMMERCIAL INTEREST**

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**INTRODUCTION**

**T**HE AGREEMENT ON THE APPLICATION of *Sanitary and Phytosanitary Measures* (“*SPS Agreement*”), a side agreement of the 1994 World Trade Organization (“WTO”), was designed to accommodate national health and environmental standards within an international effort to reduce trade barriers. WTO members were concerned that they might give up their ability to protect their populations from harmful foreign products if they were more open to imports, as other countries were able to allow higher concentrations of harmful residues in food products that posed unacceptable risks to human health. They were also concerned about imports having the potential to carry damaging pests that could be costly to domestic producers or the natural environment. As each country has its own particular vulnerability to animal or plant health because of unique climatic and biological conditions, the *SPS Agreement* appeared beneficial because it allowed governments to protect these vulnerabilities.

While WTO members have not been willing to give up control over the products that come into their countries, they have also recognized that importing countries are tempted to use any ability that they have available to limit imports for the benefit of domestic producers. This suspicion was reinforced by the increasing use of non-tariff barriers in the latter part of the *GATT* era. For example, 57% of food imports into the U.S. were subject to non-tariff barriers in 1966. By 1986, this figure had risen to 90%.<sup>1</sup> The tension between the legitimate protection of human, animal, and plant health as an expression of national sovereignty and the facilitating of international trade underscores the *SPS Agreement* and its application.

WTO members agreed that scientific evidence should be required to justify SPS measures and distinguish them from disguised barriers to trade. An analysis of the first four cases where WTO Panels and Appellate

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<sup>1</sup> David G. Victor, “The Sanitary and Phytosanitary Agreement of the World Trade Organization: An Assessment After Five Years” (2000) 32 *N.Y.U. J. Int’l L. & Pol.* 865 at 874.

Bodies have ruled on SPS measures, however, shows that there are a number of non-scientific choices that determine the balance between the competing interests of national sovereignty and international trade. These choices include: on whom the onus lies; what standard of proof must be met; the deference given to minority scientific opinion; and whether countries must tolerate some minimum level of risk. The role accorded to scientific evidence is circumscribed by these considerations that ultimately establish the balance between commercial and national sovereignty interests.

### **Scientific Evidence Requirement**

Article 2.2 of the Agreement holds that an SPS measure must be based on scientific evidence. There must be evidence of the existence of the risk and that the measure effectively reduces that risk.<sup>2</sup> In the absence of any such evidence, there is a danger that the measure is a disguised barrier to trade. On the other hand, where a country has scientific evidence of a risk and evidence that the SPS measure would effectively reduce it, the country legitimately expresses its sovereignty through the SPS measure. The terms of the *SPS Agreement* suggest that members may set their own level of tolerance for risk as long as they can establish a risk and scientifically justify their response to it. Where a possible hazard has been detected, a country may provisionally adopt measures based on what is known at the time. The country must, however, seek additional evidence to either support or replace the measure within a reasonable period of time.<sup>3</sup>

Since the Agreement was signed in 1994, there have been many disputes between WTO members over SPS measures. Twenty-four of these have resulted in complaints to the WTO, of which seven have been resolved by mutual agreement. Ten disputes have been pending for a number of years, likely having been abandoned by the complainants. Three further disputes are at various stages of being heard by the dispute settlement Panels.<sup>4</sup> Prior to the *Japan—Apples* case, the subject of the following, only three had been fully adjudicated: 1) a U.S. and Canadian complaint against a European Union (“EU”) prohibition on the importation of beef raised using growth hormones (*Beef Hormones*); 2) a Canadian complaint against an Australian ban on salmon imports

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<sup>2</sup> Alan O. Sykes, “Domestic Regulation, Sovereignty, and Scientific Evidence Requirements: A Pessimistic View” (2002) 3 *Chi. J. Int’l L.* 353 at 354.

<sup>3</sup> GATT, *Agreement on Sanitary and Phytosanitary Measures, Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations*, 15 April 1994, art. 5.7.

<sup>4</sup> WTO, *Committee on Sanitary and Phytosanitary Measures: Major Decisions and Documents*, (Summer, 2006) at Appendix B, online: World Trade Organization <[http://www.wto.org/english/tratop\\_e/sps\\_e/decisions06\\_e.pdf](http://www.wto.org/english/tratop_e/sps_e/decisions06_e.pdf)>.

(*Australia—Salmon*); and 3) a U.S. complaint against Japanese measures aimed at keeping the codling moth from becoming established in Japan (*Japan—Varietals Testing*). *Japan—Apples* arose out of a US complaint that Japanese measures designed to prevent the spread of fire blight into Japan were unjustified barriers to trade.<sup>5</sup>

The complainants have been successful in all four cases, as each of the measures was found to have been contrary to the *SPS Agreement*. However, the effort and expense required to bring these cases before a dispute resolution body may limit the remedy to the few countries that have sufficient resources.<sup>6</sup> Even where there are resources, it may not be economical to complain about some SPS measures if the possible benefit does not justify the cost. For example, both Australia and South Africa have complete bans on US apple imports because they do not want to be exposed to fire blight.<sup>7</sup> The same arguments and evidence that the US used in *Japan—Apples* to remove Japanese barriers to imports would apply equally to the Australian or South African restrictions. The difference, however, is that Australia and South Africa are significant and efficient producers and exporters of apples in their own rights. Even if the barriers to US imports were removed, the US could not expect to sell apples in those markets. A complaint is likely only brought forward for adjudication when the complainant believes that it has a very strong case and there is enough at stake to make the complaint worthwhile.<sup>8</sup>

The *Japan—Apples* case does not break any new ground in the interpretation of the *SPS Agreement*. It does, however, refine elements of the three earlier decisions and give a stronger indication of how a WTO dispute settlement body will balance national protective measures against the commercial interests of exporters. The parties, particularly Japan, were able to craft their arguments and scientific evidence according to what they had learned in previous disputes. In doing so, they were able to focus the Panel more closely on the issue of what is required of scientific evidence to support a risk assessment on which an SPS measure can be based.

### The First Three Disputes

The first dispute over an SPS measure was the *Beef Hormones* complaint. The ban began in 1981, long before *GATT 1994* and the *SPS Agreement*. Moreover, the measure was clearly not intended to be a

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<sup>5</sup> *Ibid.*

<sup>6</sup> Victor, *supra* note 1 at 897-898.

<sup>7</sup> Linda Calvin & Barry Krissof, "Resolution of the U.S.-Japan Apple Dispute: New Opportunities for Trade" United States Department of Agriculture, FTS-318-01, (October 2005) at 10, f.n. 4, online: U.S. Dep't of Agriculture <<http://www.ers.usda.gov/publications/FTS/Oct05/fts31801/fts31801.pdf>>.

<sup>8</sup> Victor, *supra* note 1 at 897-898.

disguised attempt to favour domestic producers over foreign beef imports. The ban on the use of growth hormones for cows was the response to a scandal arising from an incident at a convent school in Italy. Teachers and students at this school were exposed to high levels of growth hormone residues, to the extent that boys between the ages of three and thirteen began to develop breasts because a farmer had improperly administered hormones to his cattle.<sup>9</sup> The EU eventually prohibited the use of hormones in domestic production and prohibited imports of beef from hormone treated cattle.<sup>10</sup> Overnight, US exports to the EU fell from \$100 million annually to nothing.<sup>11</sup>

The first argument that the US put forward was that the EU breached the *SPS Agreement* by insisting on standards that were stricter than those contained in international standards. Such standards did exist for the residues of some of the proscribed hormones, and the US argued that the Preamble and Article 3.1 of the *SPS Agreement* mandated that those standards had to be accepted by signatories to the agreement.<sup>12</sup> The US was arguing, in effect, that by joining the WTO, members gave up the right to determine risks and set national priorities about responses to risks. No SPS measure that was more stringent than an existing international standard could be valid. The Panel accepted the US argument, but the Appellate Body did not.<sup>13</sup> No complainant has made this argument since. It can thus be said that international standards, where they exist, are not binding on WTO members.

Nevertheless, the Appellate Body did rule in favour of the US because the hormone ban violated Article 5.1.<sup>14</sup> This article states that an SPS measure must be based on a risk assessment. There was no requirement that “a certain magnitude or threshold level of risk be demonstrated.”<sup>15</sup> Nor did the risk need to be the view of the majority of scientists to be valid according to the Body. It is enough that there was a rational relationship between the measure and the risk assessment.

The EU tried to demonstrate the risk of hormone treated beef indirectly by showing that the ingestion of the hormones by women in hormone replacement therapy caused cancer. Extrapolating from this, an

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<sup>9</sup> Charan Devereaux, Robert Z. Lawrence & Michael D. Watkins, *Case Studies in US Trade Negotiation, Vol. 2: Resolving Disputes* (Washington, D.C.: Institute for International Economics, 2006) at 37-38.

<sup>10</sup> *Ibid.* at 41.

<sup>11</sup> *Ibid.* at 51.

<sup>12</sup> Victor, *supra* note 1 at 900.

<sup>13</sup> *Ibid.*

<sup>14</sup> WTO, *EC Measures Concerning Meat and Meat Products (Hormones)*, Report of the Appellate Body, P180, WTO Doc. WT/DS26/AB/R at para. 208, online: WorldTradeLaw.net <[http://www.worldtradelaw.net/reports/wtoab/ec-hormones\(ab\).pdf](http://www.worldtradelaw.net/reports/wtoab/ec-hormones(ab).pdf)> [*Beef Hormones*].

<sup>15</sup> *Ibid.* at para. 186.

expert estimated the risk of developing cancer from eating meat from hormone treated cattle to be one in a million.<sup>16</sup> The Appellate Body rejected this evidence, stating that a proper risk assessment had to specifically evaluate the carcinogenic potential of hormone treated beef and that it was not acceptable to generalize the evidence from hormone replacement therapy.<sup>17</sup> The EU then argued that the WTO ought to consider the risks that the hormones would be overused. After all, it was the improper use of growth hormones that had caused the incident at the Italian convent school in the first place. There was also ample evidence that US ranchers had ignored veterinary evidence and used growth hormones improperly in the past.<sup>18</sup> The Appellate Body responded that the EU had not shown any evidence of the extent of this possibility. Consequently, there was no 'rational relationship' between the risk assessment and the SPS measures, and it ruled that the measures were invalid.<sup>19</sup>

The Appellate Body was not explicit on what constituted a rational relationship between a risk assessment and an SPS measure. What had become clear, however, was that the onus was clearly on the importing country to justify its measures, and there was a *de facto* presumption of invalidity. Also, the result of the measure, not the intention behind it, was the relevant factor when determining if a measure was valid. That the EU never intended the ban to be a trade barrier was not germane. The decision in *Beef Hormones* gave a mixed message about the acceptability of minority scientific opinions. On one hand, the Appellate Body held that it could legitimately justify an SPS measure. On the other, the Body was not influenced by the one proffered in the particular case.<sup>20</sup>

*Australia—Salmon* began with a Canadian complaint about a ban on the importation of fresh or frozen salmon. Australia argued that the ban was necessary to prevent the introduction of twenty-four aquatic diseases into Australian waters. Canada argued that the risk of the diseases spreading to Australian waters through headless and eviscerated salmon was based on an implausible chain of events.<sup>21</sup> Australia countered that an infected fish could plausibly be packaged and shipped while remaining infectious. Some part of this fish could then be discarded raw into a vulnerable waterway in a quantity that would allow the disease to survive and spread.<sup>22</sup>

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<sup>16</sup> *Ibid.* at para. 198, f.n. 181.

<sup>17</sup> *Ibid.* at para. 199.

<sup>18</sup> Devereaux, *supra* note 9 at 35-37.

<sup>19</sup> *EC Measures Concerning Meat and Meat Products (Hormones)*, Report of the Appellate Body, *supra* note 14 at para. 193.

<sup>20</sup> Sykes, *supra* note 2 at 360.

<sup>21</sup> Victor, *supra* note 1 at 904-906.

<sup>22</sup> *Ibid.* at 906. See also WTO, Report of the Panel on Australia Measures Affecting

Like in *Beef Hormones*, the Appellate Body ruled that the measures were not based on a risk assessment. It set out three criteria for a valid assessment. An importing country had to 1) identify the diseases and their possible consequences; 2) evaluate the likelihood of “entry, establishment and spreading” of the pathogen; and 3) evaluate the effect of the SPS measures on this likelihood.<sup>23</sup> This ruling is difficult to reconcile with the Appellate Body’s previous expressions on risk assessments. In *Beef Hormones*, risk assessments could include qualitative factors and no minimum level of risk had to be demonstrated.<sup>24</sup> In *Australia—Salmon*, however, the requirement to evaluate the likelihood of a risk implies a quantification of the risk. Moreover, that the measure be evaluated for its effectiveness in reducing the risk suggests that there is a minimum quantitative threshold for a risk to justify an SPS measure.

The WTO ruling was clouded because Australia did not apply its SPS measures consistently. Specifically, it allowed ornamental fish for aquaria and frozen bait fish to be imported. Both were possible vectors for the aquatic diseases, and the chain of events necessary to introduce them into pristine Australian waters was more plausible than for Canadian salmon.<sup>25</sup> Live ornamental fish are more likely to bring disease into Australia than dead salmon, and ornamental fish are likely to be disposed of into waterways. Frozen bait fish are just as likely as salmon to be infectious, and they are intended to be put into natural waterways.<sup>26</sup> In *Australia—Salmon*, it was unclear if a country could not apply a zero-risk policy at all or, if it was willing to tolerate some risk by allowing some imports, it could not prohibit imports with an equivalent or lesser risk. There was little doubt, however, that the SPS measures were in fact enacted to protect the developing Australian salmon farming industry.

The *Japan—Varietals Testing* case started with a US complaint about a Japanese measure designed to prevent the spread of the codling moth to Japan. Japan required that most fruit and nut imports be fumigated to kill the eggs and larvae of the moth. The US did not complain of this stipulation, but that the exporters were required to demonstrate the effectiveness of fumigation on each separate variety. Consequently, the US had to show its procedures were effective with Granny Smith apples, and then do the same for Fuji apples, and so on. The US argued that Japan had no evidence that the test results from one

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*Importation of Salmon—Recourse to Article 21.5 by Canada*, WTO Doc. WT/DS18/R at paras. 4.69-4.74, online: WTO <<http://docsonline.wto.org>>.

<sup>23</sup> Victor, *supra* note 1 at 906-907.

<sup>24</sup> *Ibid.* at 900-901.

<sup>25</sup> *Ibid.* at 906.

<sup>26</sup> *Ibid.*

variety would differ from the results for another variety and that the expense and delay of testing each variety was more restrictive of trade than required. Japan replied that the different times that varieties matured meant that the moths were in different stages of development for different varieties, so the tests were justified. Moreover, Japan argued that Article 5.7 allowed it to adopt more restrictive standards when there was not enough evidence available to allow it to rule out the risk.<sup>27</sup>

The Appellate Body ruled that the onus was on Japan to demonstrate the risks and justify the testing of varieties. Also, raising the prospect of the risk was not sufficient to justify an SPS measure. Article 5.7 did allow countries to institute measures to counter a risk before it had been formally assessed, but Japan could not avail itself of this because it had not sought the information required to justify the measure within a reasonable amount of time.<sup>28</sup>

Going into the *Japan—Apples* case, WTO members were faced with conflicting indications from previous disputes about the nature of the evidence required to justify an SPS measure. The dispute resolution bodies had stated that minority scientific opinion was a valid justification, that importers did not have to accept any minimum level of risk, that risks could take into account qualitative factors, and that importers could take into account ‘real world’ risks. Previous cases had shown that importers could not necessarily rely on these statements to allow them to control risks as they saw fit, which the judgment in the *Japan—Apples* dispute was to reinforce.

### **JAPAN—APPLES: THE DISPUTE**

**T**HE JAPANESE OPENED THEIR MARKETS to apple imports in 1971, but few countries took advantage of the opportunity, since Japan maintained strong SPS measures against many known pests. To control the codling moth, Japan mandated that fruit imports had to be fumigated, which lessened the quality of imported fruit. The measures that were directed at minimizing the risk of fire blight spreading to Japan were also onerous. The US was only authorized to export from Oregon and Washington State, and growers were required to register their orchards with the Japanese at the beginning of each growing season. The US Department of Agriculture (“USDA”) was required to inspect every tree in these orchards three times during the growing season, the third time in the presence of a Japanese inspector. Each orchard was required to have a 500m buffer zone, which also required inspection. If fire blight was detected anywhere in the orchard or in the buffer zone, the orchard

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<sup>27</sup> *Ibid.* at 909-912.

<sup>28</sup> *Ibid.* at 912.

was disqualified from exporting to Japan. In 1994-95, the first season these rules were in effect, only half of the acres originally registered still qualified for export at harvest time. No other country required orchard inspections to control fire blight, although Australia and South Africa prohibited US apple imports entirely because of the fire blight risk.<sup>29</sup>

Japan also required that harvested apples be washed in a disinfectant. The packing facility also had to be cleaned with the disinfectant, and fruit destined for Japan had to be kept separate from fruit for other markets. Further, the US was required to certify that the fruit was fire blight free. Japanese officials had to be given the access required to inspect and certify the harvested apples and the packing facilities.<sup>30</sup> American growers found these measures so onerous that for five of the eleven years that this export regime was in force, US growers registered no acreage at all.<sup>31</sup> The USDA calculated that the SPS measures cost US growers \$143.6 million per year in 2005.<sup>32</sup> While Japan is the thirteenth largest producer of apples in the world, its industry is made up of thousands of small, relatively inefficient growers. With the import barriers, the high cost of domestic production, and declining domestic production, Japan has a low per capita rate of apple consumption. Consequently, US producers believe that the Japanese market has considerable potential.<sup>33</sup>

The WTO's dispute settlement Panel first heard the US's complaint about the fire blight regulations in July 2003 and ruled in favour of the US.<sup>34</sup> The Appellate Body confirmed this ruling in December 2003.<sup>35</sup> Japan responded by slightly revising its SPS measures, reducing the buffer zone around registered orchards from 500m to 10m.<sup>36</sup> This did not satisfy the US, who again complained to the WTO, and also asked to collect damages for the amount of apple sales the US claims that it lost due to these measures. The US argued, as it had done in 2003, that there was no scientific evidence that mature, symptomless apples could be infected and act as a vector for the fire blight bacteria.<sup>37</sup>

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<sup>29</sup> Calvin & Krissof, *supra* note 7.

<sup>30</sup> WTO, *Japan—Measures Affecting the Importation of Apples, Article 21.5 Panel Report*, WTO Doc. WT/DS245/RW (23 June 2005) at paras. 8.94-8.118, online: WTO <[http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds245\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds245_e.htm)>. [*Japan—Apples*]

<sup>31</sup> Calvin & Krissof, *supra* note 7 at 11.

<sup>32</sup> *Ibid.* at 21.

<sup>33</sup> *Ibid.*

<sup>34</sup> *Ibid.* at 6.

<sup>35</sup> *Ibid.*

<sup>36</sup> *Japan—Apples, supra* note 30 at para 2.22(c) and Calvin & Krissof, *supra* note 7 at 6.

<sup>37</sup> Calvin & Krissof, *ibid.*

### Scientific Arguments

Japan argued the risk of the spread of fire blight was twofold. First, a failure of US export controls could cause infected plant material to be exported to Japan. Second, latently infected symptomless apples could carry fire blight, which could then infect the Japanese environment. Having failed to defend its SPS measures in 2003, Japan had to produce scientific evidence to support its measures. Just pointing to the risk and claiming a zero-risk policy was not sufficient. Consequently, Japan sponsored four studies that were intended to meet the scientific requirements called for in the *SPS Agreement*. The first three were to demonstrate a pathway by which infected mature apples could spread fire blight to Japan and the fourth quantified the risk and the effectiveness of the SPS measures.<sup>38</sup>

The first study had to demonstrate that mature fruit could be infected by the fire blight bacteria. This was an important point to establish, since infection was said to stop the fruit from maturing. The Japanese researchers removed a protective layer (abscission layer) between the twig and the fruit and placed a solution carrying the bacteria on the wound. Some of the bacteria were later detected in the fruit.<sup>39</sup> The second study had to show that the bacteria could survive within the apples throughout cold storage and shipment. The researchers again artificially contaminated the apples by removing the abscission layer and introducing the bacteria into the fruit. The apples were then placed in an incubator where they were left for nine days at high temperatures (twenty-five degrees Celsius) and relatively high humidity, before putting them in cold storage (five degrees Celsius). The bacteria survived for months in the fruit.<sup>40</sup>

The next step of the pathway that had to be demonstrated was that the bacteria could move from a latently infected apple to vulnerable plants. The study purported to show that flies could carry the infection from a discarded apple core to vulnerable plant material. The researchers first sedated some flies and confined them to the cut surfaces of artificially contaminated fruit for six hours to show that flies could pick up the bacteria from fruit. The flies did, in fact, have small concentrations of the bacteria on them.<sup>41</sup> Other flies were sedated, surface sterilized, then dunked into a solution containing the bacteria. They were then left in a small enclosure with surface damaged apples, pears, and plant material. The infected flies were observed feeding on the

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<sup>38</sup> *Japan—Apples*, *supra* note 30 at paras. 4.25-4.67.

<sup>39</sup> *Ibid.* at paras. 4.38-4.44.

<sup>40</sup> *Ibid.* at para. 4.25.

<sup>41</sup> *Ibid.* at para. 5.46.

fruit in the enclosure.<sup>42</sup> The fourth study used the previous three to quantitatively describe the risk and to show the effectiveness of the SPS measures. The Japanese researchers asserted that of garbage in Japan disposed of outside, ten percent was made up of apple cores or peels. With this, the risk from mature, symptomless fruit was an infection once every 565 years. The effective SPS measures reduced this risk to one infection every 1,898 years.<sup>43</sup>

The US representatives argued against these conclusions because the studies were not realistic to orchard and production conditions.<sup>44</sup> For example, the cold storage conditions were not similar to the actual conditions that export apples are subject to. Apples are never placed in incubators for nine days—instead, they are put in cold storage (zero to two degrees Celsius) within twenty-four hours of harvesting. Similarly, there was no evidence that flies would become infectious and infect vulnerable plant material if left on their own. The first three studies were similarly and obviously flawed. The fourth study was compromised by its reliance on the first three and its assumption about the proportion of garbage that is made up of apple cores and peels. Moreover, the US argued that there was no evidence that a mature, symptomless apple had ever been latently infected with the fire blight bacteria except deliberately in laboratory conditions.<sup>45</sup>

### **The Ruling**

The Panel canvassed the US and Japanese positions on this research and then put a series of questions to four experts. In effect, they all agreed with the US arguments and the Panel concluded that Japan did “not provide sufficient scientific evidence to establish, in natural conditions, the risks which Japan tries to support [...]”<sup>46</sup> Orchard and buffer zone inspection and disinfection of fruit and packing facilities were thus found to be unjustified.<sup>47</sup> The US, however, was required to certify that it was only exporting mature, symptomless apples and Japan was justified in verifying this.<sup>48</sup>

The panel ruled that Article 5.1, which requires that SPS measures should be based on a risk assessment, should be read together with Article 2.2, the obligation to base an SPS measure on scientific evidence.<sup>49</sup> It is a specific application of the more general obligation.<sup>50</sup>

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<sup>42</sup> *Ibid.* at paras. 4.64 & 5.47.

<sup>43</sup> *Ibid.* at paras. 4.57-4.67.

<sup>44</sup> *Ibid.* at para. 8.50.

<sup>45</sup> *Ibid.* at para. 4.47.

<sup>46</sup> *Ibid.* at para. 8.71.

<sup>47</sup> *Ibid.* at paras. 8.95-8.102.

<sup>48</sup> *Ibid.* at para. 8.121.

<sup>49</sup> *Beef Hormones*, *supra* note 14 at para. 180.

Consequently, the Panel determined that the risk assessment, based as it was on the four studies criticized in the Article 2.2 analysis, was not appropriate to the circumstances.<sup>51</sup> The failure to convince the Panel that the risk of fire blight spread was scientifically plausible meant that the risk assessment could not support the SPS measure.

The US argued that considering the conclusions of the experts that mature, symptomless apples carried little likelihood of spreading fire blight, current US export controls were sufficient to provide Japan with the SPS protection that it desired. Japan countered that the US procedures amounted to little more than current industry practice and that while the US may insist that its export controls are sufficient, it has failed to show that these procedures guarantee Japan's chosen level of protection. The possibility of the failure of US export controls posed a risk of the spread of fire blight to Japan. Japan pointed to the recent failure of the US export procedures to keep codling moths out of shipments of apples to Taiwan as a cause of concern.<sup>52</sup> The panel, however, was not prepared to accept this argument. Japan had not demonstrated a quantifiable risk to justify its SPS measures.<sup>53</sup>

## CONCLUSIONS

THROUGHOUT THE *JAPAN—APPLES* DISPUTE, neither the US nor the WTO alleged that the impugned measures were intended as a disguised barrier to trade. The USDA noted that other apple exporting countries were similarly disadvantaged by a range of Japanese SPS measures, and that Japanese producers saw no real benefit from them.<sup>54</sup> No protectionist purpose was alleged here, as Japanese production was already in decline for its own internal reasons. Instead, this dispute pitted the commercial aspirations of American apple growers against the biologically protective aspirations of the Japanese government. The WTO dispute settlement bodies have shown that they will rule in favour of the commercial interests over national sovereignty, largely by the mechanism of what they demand of scientific evidence.

*Japan—Apples* presents an important gloss on the earlier decisions about SPS measures. The onus clearly lies with the importer to justify the SPS measure by showing that it is rationally related to a risk assessment, based on scientific evidence. This case shows that the WTO will judge the risk assessment by evaluating the scientific evidence that it

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<sup>50</sup> *Japan—Apples*, *supra* note 30 at para. 8.124.

<sup>51</sup> *Ibid.* at paras. 8.156-157.

<sup>52</sup> *Ibid.* at paras. 8.166-168.

<sup>53</sup> *Ibid.* at paras. 8.169-8.181.

<sup>54</sup> Calvin & Krissof, *supra* note 7 at 5 & 8.

is based on. In this case, the science was found unconvincing, so the risk assessment was not appropriate. The approach of the panel in this case suggests that the preponderance of scientific evidence must support a measure, not just the presence of some evidence. It may be that the studies that the Japanese relied on here were so transparent and unconvincing that they could not support a measure at all. Whether an importer must justify its risk assessment by showing that the weight of scientific evidence is in its favour or whether it must just meet some minimal standard will have to wait for a future case where the evidence in favour of an SPS measure is better than it was here. Nevertheless, it is clear that the WTO will evaluate the scientific evidence and hold it to some standard. Just as in *Beef Hormones*, the risk assessment cannot generalize—it must weigh the particular risk in the specific circumstances.

As yet, the WTO bodies have not clearly stated what particular burden an importer must meet. The Panel judged that Japan “did not provide convincing evidence,”<sup>55</sup> that it “does not establish” a pathway,<sup>56</sup> and that the studies put forward by Japan “do not demonstrate” a risk in natural conditions.<sup>57</sup> It used measured scientific language to make a distinction that is better suited to legal analogies. After all, Japan could never muster sufficient scientific evidence to demonstrate a pathway with certainty if it had to meet a scientific burden of proof. Instead, the choice that the Panel had to make, i.e. whether to approve the SPS measures or not, is better approached through legal burdens of proof. In none of the decisions about SPS measures, however, has a WTO body articulated the standard of proof required: does an importer need to show an ‘air of reality’ to a risk, the risk ‘on the balance of probabilities,’ or does it have to demonstrate the risk ‘beyond a reasonable doubt’?

In *Beef Hormones*, the Appellate Body stated that a valid risk assessment could be based on a minority scientific opinion. It was certainly the case in *Japan—Apples* that the majority scientific opinion favoured the US position and yet a minority still supported the Japanese position. This minority was not enough to save the measures. If in fact the WTO bodies are going to weigh the evidence in favour against the evidence opposed to an SPS measure, the minority opinion will count for little. So far, the minority opinion has not been enough in either *Beef Hormones* or *Japan—Apples* to justify a measure.

Decisions in *Beef Hormones* and *Australia—Salmon* spoke of allowing countries to choose their own toleration of risk. WTO bodies have stated that a country may choose to have a zero-risk policy as long as it is based on a risk assessment. Moreover, these bodies have stated

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<sup>55</sup> *Japan—Apples*, *supra* note 30 at para. 8.50.

<sup>56</sup> *Ibid.* at para. 8.65.

<sup>57</sup> *Ibid.* at para. 8.140.

that countries may take qualitative factors into account in their risk assessment and thus they do not have to have strictly quantitative assessments of risk. All this would suggest that there is a low standard for risk assessments. In effect, a country's ability to choose its own level of acceptable SPS risk would be paramount over any concerns that the SPS measures were being misused as disguised barriers to trade.

This assertion is increasingly difficult to defend and it appears that a minimum threshold of risk must be reached to validate an SPS measure. Japan did not claim that there was a strong likelihood of infection from US apples. Even without the protection of its SPS measures, the Japanese expected infection only once every 565 years. The studies that they relied on suggested that infection was merely possible. In light of the Japanese zero-tolerance policy, this was enough to justify the measures, since anything that reduced contact between infected American plant material and pristine Japanese flora was sensible. The WTO, on the other hand, found the measures invalid because the studies did "not demonstrate a risk" in natural conditions, or "establish a pathway."<sup>58</sup> In effect, the Japanese tried to justify their measures on the possibility of infection while the WTO expected them to demonstrate the probability of infection. Where a risk is very slight, convincingly (and scientifically) establishing with precision what exactly the risk is and how an SPS measure will quantifiably reduce that risk may not be possible. The risk, however slight, may carry serious consequences for an importing country and still lack a sufficiently precise description to justify an SPS measure before the WTO.

In *Japan—Apples*, the Panel showed a tendency to overlook the arguments in favour of a zero-risk policy, which it showed by its consideration of the spread of fire blight to Great Britain in the late 1940's. The Panel suggested that the infection was likely, but not certainly, caused by contact between a wooden packing box, which had come into contact with infected plant material in the US, and vulnerable plant material in England. The Panel used this as evidence to support the US position that the fruit themselves were unlikely to spread the disease, since the spread required only one-time contact.<sup>59</sup> But viewed from a Japanese perspective, the incident could support the SPS measures. The fact that only one contact was needed to establish fire blight could be a compelling argument to limit the possibilities of contact. Also, the chain of events that led to the spread to Britain was no less implausible than those put forward by Japan in its arguments in favour of its precautions. Infected plant material had to be accidentally packed; the bacteria had to rub off on the box; after the pears were removed, the

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<sup>58</sup> *Ibid.* at paras. 8.65 & 8.140.

<sup>59</sup> *Ibid.* at para. 4.118.

box had to be disassembled and come into contact with a vulnerable plant, all before the elements could kill the bacteria.

The refusal of the WTO to consider the failure of export controls when ruling on SPS measures is also strongly in favour of the exporter. After all, Japan was able to point to a recent failure of the US's export controls when shipping apples with viable codling moths still present, despite the fact that export procedures should be able to kill moth eggs and larvae. Yet the WTO, here and in *Beef Hormones*, did not consider such failures when it ruled on importers' precautionary measures.

What does balance the interests between importers and exporters is that few SPS measures actually get challenged. Australia's and South Africa's measures against US apples are just as vulnerable as Japan's, but it is just not worth the expense to complain to the WTO about them. Further, when the WTO does find invalid measures, it removes them only very specifically for individual products. For example, it was only their orchard and buffer zone inspections and the disinfecting that was ruled invalid for apples. Other measures for apples, such as fumigation, continue and inspections are not ruled out for other products. While the actual rulings appear to favour the commercial interests of exporters, there is an institutional bias in favour of the importer's measures. Moreover, an importer, such as Japan in this case, could ignore the ruling and the US would have to apply countervailing duties against Japanese exports to the US. The EU has done this in the *Beef Hormones* dispute where it still will not permit beef raised using hormones to be imported. Japan has the resources to pay approximately \$150 million a year in duties to the US if its SPS measures are sufficiently important to it. Also, the costs of the duties are not necessarily borne by the exporter. If US consumers are going to buy the Japanese goods regardless, it is the US consumers who end up paying the countervailing duties.

Scientific evidence has not been a neutral means of distinguishing between valid efforts to protect a country's SPS integrity and disguised barriers to trade. In order to justify an SPS measure, evidence must meet standards, which are still not clear. The rigour of these standards has proven to be a barrier to SPS measures. WTO bodies have not tried to distinguish between those measures that are motivated to protect human, animal, and plant health and those designed to benefit domestic producers. Such an approach, however, is probably necessary to counterbalance the institutional factors that cause SPS measures to be created and overlooked by trading partners once they are in place.