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Unlabel Their Frankenstein Foods!: Evaluating a U.S. Challenge to the European Commission's Labeling Requirements

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Unlabel Their Frankenstein Foods!: Evaluating a U.S. Challenge to the European Commission's Labeling Requirements for Food Products Containing Genetically-Modified Organisms

ABSTRACT

The recent development of genetically-modified agriculture has been accepted enthusiastically by the U.S. agricultural producers, but the European public has expressed fear that the so-called "Frankenstein Foods" may be harmful to health and the environment. Faced with this public outcry, the European Commission passed regulations, which mandated that food products containing genetically-modified agricultural products be labeled as such. Although the European Commission appears to have passed its labeling requirements without express or hidden protective intent, the regulations stand to make U.S. producers less competitive in the European market than their European counterparts. This Note contends that the United States should challenge the European Commission's labeling requirements before the World Trade Organization (WTO). It concludes that the WTO would most likely find that the labeling requirements violate the 1994 Uruguay Round of the General Agreement on Tariffs and Trade and force the European Commission to repeal the requirements.

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I. INTRODUCTION

The development of genetically-modified agriculture in recent years has provided benefits that had been unachievable during the "green revolution" era of Mendel-derived plant breeding. Genetic engineering is responsible for crops with greater resistance to herbicides and pests, foods with longer shelf lives, and enhanced nutritional properties.[1] Consumers in the United States have accepted genetically-modified agriculture with little dissent.[2] On the other side of the Atlantic Ocean, however, their

1. *See generally* STEPHEN NOTTINGHAM, EAT YOUR GENES: HOW GENETICALLY MODIFIED FOOD IS ENTERING OUR DIET 37-79 (1998) (discussing the developments that genetic engineering has made possible).

2. *See* Nigel Williams, *Agricultural Biotech Faces Backlash in Europe*, 281 SCIENCE, Aug. 7, 1998, at 768, 768. One commentator indicated that the U.S. system for governmental approval of genetic engineering has quashed debate since the system does not require new legislation whenever a new modification

European counterparts have expressed fear that the "Frankenstein Foods" will cause health and environmental problems.[3] That fear has spurred several European nations to regulate genetically-modified agriculture and agricultural products[4] and motivated the European Commission (EC) to pass legislation requiring that food products with genetically-modified material be labeled as such.[5] Such regulation, in turn, has potentially negative consequences for U.S. food producers that rely on genetically-modified agriculture for a significant share of their output.[6]

The Uruguay Round of the General Agreement on Trades and Tariffs (GATT) created the World Trade Organization (WTO) to provide member nations with an arena for challenging the actions of other member nations that place an undue burden on international trade.[7] Since the Clinton Administration has expressed a willingness to challenge trade-burdening actions,[8] it is possible that it may be motivated to bring a complaint before the WTO against the EC's regulations of genetically-modified agriculture.

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seeks approval. *See* Bill Lambrecht, *World Recoils at Monsanto's Brave New Crops*, ST. LOUIS POST-DISPATCH, Dec. 27, 1998, at A1.

3. *See generally* James Walsh, *Alien Seed?: As Genetically Engineered Crops Begin to Enter the Food Chain, Europe Remains a Holdout Against What Eco-Warriors Call "Frankenstein Foods"*, TIME (International Edition), Aug. 24, 1998, at 38 (giving an overview of the European reaction to genetically-modified agriculture).

4. *See generally id.* (listing some of the unilateral regulatory responses).

5. *See* Council Regulation 1139/98 of 26 May 1998 Concerning the Compulsory Indication of the Labeling of Certain Foodstuffs Produced from Genetically Modified Organisms of Particulars Other than those Provided for in Directive 79/112/EEC, 1998 O.J. (L 159) 4-7 (Council of the European Union) [hereinafter Council Regulation 1139/98 of 26 May 1998].

6. *See* Williams, *supra* note 2, at 768 ("From a standing start in 1996, 27% of U.S. plantings of soybean are now genetically modified to carry resistance to herbicides and the share is expected to grow rapidly."); *see also* Walsh, *supra* note 3 (citing a study that suggests that genetically-altered varieties account for 32% of maize and 38% of soya in the United States and perhaps as much as 58% of Canada's canola oil output).

7. *See generally* William R. Sprance, *The World Trade Organization and United States' Sovereignty: The Political and Procedural Realities of the System*, 13 AM. U. INT'L L. REV. 1225, 1243-50 (1998) (providing a discussion of the Uruguay Round and the World Trade Organization).

8. *See, e.g., US Trade Negotiator Takes Tough Stance*, AGRA EUROPE, May 22, 1998, at EP, *available in* LEXIS, News Library, Magazine Stories Combined File (detailing that United States Trade Representative Charlene Barchefsky indicated that the EC's delay in approval for three varieties of genetically-modified maize was "very serious" and threatened a "substantial trade row" if the EC did not give the maize full approval).

This Note contends that the United States should use the WTO's dispute-settling process to challenge the EC's labeling requirements.[9] Part II reviews the development of genetically-modified agriculture and the European backlash against it. Part III details the procedure for challenging a perceived restriction on trade in the WTO. Part IV discusses the relevant provisions of the GATT. Finally, Part V evaluates whether the 'labeling requirements would survive WTO scrutiny. It concludes that the WTO would find that the requirements violate the GATT mandates.

II. DEVELOPMENT OF GENETICALLY-MODIFIED AGRICULTURE AND THE EUROPEAN BACKLASH

The presence of genetically-modified organisms (GMOs) in agriculture and agricultural products has become commonplace and accepted in the United States in recent years. Genetic engineering has enabled scientists to circumvent a constraint of traditional, Mendel-derived plant breeding: the impossibility of cross-fertilization between species.[10] Now genes may bypass the obstacle of sexual incompatibility and cross the species barrier.[11] A foreign gene that has been engineered into a variety can then be passed into hybrids, just as in traditional breeding.[12]

Since it approved the first marketing of a genetically-modified crop in 1994,[13] the U.S. Food and Drug Administration (U.S. FDA) has given its blessing to over thirty GMOs.[14] Today, sizable proportions of certain crops grown in the United States and Canada contain genetic modifications.[15] Moreover, the U.S. food producers' reliance on GMOs stands to increase. According to one projection, almost all U.S. crops will be genetically-modified in ten years or will be mixed with genetically-modified products.[16]

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9. Any unilateral regulations relating to genetically modified organisms (GMOs) that the individual European countries impose would also be subject to a potential U.S. complaint to the WTO, but they are outside the scope of this note.

10. *See* NOTTINGHAM, *supra* note 1, at 5.

11. *See id.*

12. *See id.*

13. The first to be approved in the United States was the "FlavrSavr" tomato. *See* Walsh, *supra* note 3.

14. *See* Williams, *supra* note 2, at 768.

15. *See* Walsh, *supra* note 3.

16. *See* Guy de Jonquie'res, *Genetically Modified Trade Wars: Widespread Worries in Europe About Genetically Modified Crops Could Result in a Transatlantic Trade War and Even the Worldwide Marginalization of European Farming*, FIN. TIMES (London), Feb. 18, 1999, at 15.

Although these developments have met little resistance in this country,[17] the European reaction differed dramatically. Signs of European disfavor with GMOs have been widespread. Polling data has revealed that high percentages of European citizens desire the complete segregation of genetically-modified foods from organically-grown products, and some of those polled favor banning GMOs altogether.[18] Protest groups of "eco-warriors"[19] have applied tactics both mild—filling supermarket carts with food and demanding that cashiers tell them which brands contain GMOs[20]—and destructive—tearing up test fields of genetically-modified crops.[21] The Prince of Wales has even lent his voice to the anti-GMO movement; Prince Charles's June 1998 newspaper commentary proclaimed that such modification "takes man into realms that belong to God, and God alone."[22]

In addition to bioethical considerations, opponents of GMOs have expressed more concrete fears about the so-called Frankenstein Foods. Two currents of concern can be identified. One stems from fear of the ecological consequences of introducing strange organisms into an ecosystem.[23] An incident in the fall of 1998 served to heighten this concern: the British Agriculture Ministry ordered the destruction of an experimental field of herbicide-resistant oilseed rape because the crop had pollinated nearby plants.[24] Such pollination, if unchecked, threatened to create a new breed of "super weeds," invulnerable

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17. *See* Williams, *supra* note 2, at 768.

18. *See, e.g.,* Richard Kamchen, *Gene-Altered Foods Face Uphill Battle in EU*, J. COM., Nov. 5, 1998, at 4A (citing a British poll in which 85% of respondents called for genetically modified foods to be completely segregated from organically-grown products and 77% desired that the modified foods be banned altogether).

19. *See* Walsh, *supra* note 3.

20. *See id.* (mentioning a Greenpeace protest in Britain).

21. *See id.* (relating the assault on a patch of herbicide-resistant oilseed rape in a town near London). After this crop pollinated nearby plants, the British Agriculture Ministry ordered that it be destroyed. *See* Christopher Leake, *"Superweed" Scare in Test Crop Blunder*, MAIL ON SUNDAY, Oct. 25, 1998, at 17.

22. H.R.H. Charles, Prince of Wales, *Seeds of Disaster: HRH the Prince of Wales, Who Farms Organically, Says the Genetic Modification of Crops is Taking Mankind into Realms That Belong to God, and God Alone*, DAILY TELEGRAPH, June 8, 1998, at 16.

23. *See, e.g., id.* ("We are told that GM crops will require less use of agro-chemicals. Even if this is true, it is certainly not the whole story. What it fails to take into account is the total ecological and social impact of the farming system.").

24. *See* Leake, *supra* note 21, at 17. In February, 1999, Monsanto pleaded guilty to a breach of the safety rules and paid a fine equivalent to $28,000. *See* Aviva Freudmann, *Monsanto Pleads Guilty to Agricultural Mishap in Britain*, J. COM., Feb. 18, 1999, at 1A.

to normal chemicals and capable of rendering fields sterile of plantlife.[25]

GMO opponents also point to potential health risks for consumers. These putative risks include the possibility that GMO foods would expose consumers to new allergens and the chance that they might upset the natural balance of microorganisms that live in the human digestive system.[26] Europe's recent maladies with the effects of science on its diet, such as mad-cow disease, contribute to this wariness.[27] Underlying all of these fears seems to be the notion that the corporations responsible for GMOs may be inclined to ignore ecological and health concerns in favor of increasing profits.[28]

No scientific study offers evidence that consumption of the three genetically-modified agricultural products accepted for sale in the EC—Monsanto's pest-resistant maize, AgrEvo's herbicide-resistant maize, and Novartis's pest and herbicide-resistant maize[29]—is hazardous to human health.[30] The fact that all of the organisms at issue have passed the demanding tests of the U.S. FDA bolsters claims that products are safe.[31] Nevertheless, some scientists have challenged the alleged safeness of GMOs. The findings of Dr. Arnpad Pusztai have drawn the most attention.[32] After he fed genetically-modified potatoes to rats, Dr. Pusztai discovered internal organ damage, weight loss, and immune-system problems.[33] Dr. Pusztai, who was forced to retire from

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25. *See* Leake, *supra* note 21, at 17.

26. *See* Walsh, *supra* note 3.

27. *See id.*

28. *See, e.g.*, Alan Simpson, *A First Victory Against Those Who Want To Play God*, EVENING STANDARD (London), Feb. 10, 1999, at 13 ("Big business has too much at stake to allow doubts about the science, the safety and the consequences to stand in the way of a large monopoly profit."); *see also* Walsh, supra note 3 (quoting Gill Lacroix, a Brussels-based biotech monitor for Friends of the Earth, "Let's not fool ourselves. Monsanto is not in this to feed the world or improve the environment. The bottom line is to improve their balance sheet and profits for their shareholders.").

29. *See* Walsh, *supra* note 3 (listing genetically-modified crops approved for sale in the EC).

30. The reaction to Dr. Arpad Pusztai's findings on the alleged harmfulness of genetically-modified potatoes suggests that they are the only instance of a scientific study that contends that GMOs are harmful. *See, e.g.*, Jim Mclean, *Food Facts They Tried To Hide: Gagged Scientist Had Warned the Government of GM 'Time Bomb'*, DAILY REC. (Scot.), Feb. 17, 1999, at 4; *see also* Williams, *supra* note 2, at 769 (" . . . regulatory bodies have determined that the modified soybeans present no health hazards . . .").

31. *See* Charles Arthur, *Why I'm Quite Happy To Eat Genetically Modified Food: Ignore Your Natural Distrust of Government Spin Doctors' Efforts To Generate Good Publicity*, THE INDEP. (London), Feb. 16, 1999, at 4.

32. *See* Mclean, *supra* note 30, at 4.

33. *See id.*

the Rowett Research Institute after his disclosure sparked charges of high meddling, further contended that he could find scant scientific proof supporting the safety of the GMOs.[34] Additionally, some scientists have expressed nagging fears that the available studies, while vouching for short-term GMO safety, provide no proof that the GMOs will not bring adverse long-term consequences.[35]

In response to the anti-GMO pressures, several European governments have passed legislation regulating, or even banning, the production and sale of food products containing GMOs. Austria and Luxembourg have prohibited the production of the three strains of EC-approved genetically-modified maize, while Norway has banned all products from crops containing antibiotic-resistance marker genes.[36] Britain has introduced a program of "managed development," which involves a ban on insect-resistant crops and strict scrutiny of any others.[37] France has adopted a "go-slow" policy for approving any new varieties for sale.[38] The coalition government in Germany, which includes members of the Green party, has agreed to labeling requirements.[39]

Although these unilateral regulations could harm the export success of GMO-reliant U.S. food producers, any Europe-wide restrictions passed by the EC would stand to cause greater harm. Having approved just three genetically-altered food plants for commercial growth within its borders,[40] the EC has been more lukewarm than the United States in accepting GMOs. In May 1998, the EC adopted regulations requiring the labeling of all foods and food ingredients "produced, in whole or in part, from . . . genetically modified soya beans [or] genetically modified maize."[41]

The regulations asserted that their purpose was to provide uniform labeling rules for foods and food ingredients containing

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34. *See id.*

35. *See* Andy Richards, *Dream or Nightmare?: Blue Grass, Chocolate Cabbage . . . How Genes Controversy Could Be Just the Beginning*, BIRMINGHAM EVENING MAIL, Feb. 18, 1999, at 6 (quoting Ralph Early, Senior Lecturer in Food Science at the Harper Adams University College at Newport, Shropshire, "With GM goods we cannot be sure of the long-term consequences. Many are likely to be safe, but in some cases regular exposure over half the lifetime of a human may be required to reveal problems. Who truly knows?").

36. *See* Williams, *supra* note 2, at 768.

37. *See* Kevin O'Sullivan, *Pressure on EU May Result in Temporary Restrictions on Genetically Modified Crops*, IRISH TIMES, Oct. 23, 1998, at 2.

38. *See* Walsh, *supra* note 3.

39. *See* O'Sullivan, *supra* note 37, at 2.

40. *See* Walsh, *supra* note 3.

41. Council Regulation 1139/98 of 26 May 1998, *supra* note 5, art. 1.1

GMOs.[42] In the EC's view, uniformity was necessary because "certain member states" had adopted individual measures for labeling the products, and any differences were "liable to impede the free movement of those foods and food ingredients and thereby adversely affect the functioning of the internal market."[43] Additionally, the regulations sought to inform consumers of "any characteristic or food property" that "renders a food or food ingredient no longer equivalent to an existing food or food ingredient."[44] Absent from the regulations was any explicit acknowledgment that the requirements were motivated by a desire to protect human health or the environment.[45]

After indicating that the labeling requirements had to be "based on a scientific evaluation," clear to enforce, and "no more burdensome than necessary but sufficiently detailed to supply consumers with the information they require," the regulations concluded that making distinctions based on the presence of protein or DNA resulting from genetic modification would satisfy those requirements.[46] The regulations then declared that food and food ingredients produced from genetically-modified soya and maize are not equivalent to any existing foods and food ingredients and, for that reason, should be subject to labeling requirements.[47] These regulations excluded food additives, flavorings for use in foodstuffs, and extraction solvents used in the production of foodstuffs from the labeling requirements.[48]

To satisfy the labeling requirements a producer must include the words "produced from genetically modified soya" or "produced from genetically modified maize" in the list of ingredients, a footnote to the list of ingredients, or some other clear location on the product.[49] The regulations indicated that the labeling requirements were minimum requirements and were not to be interpreted as barring producers from including any additional information about the properties of their products.[50]

Five months later, the EC announced its intent to remove the exemption for food additives, flavorings for use in foodstuffs, and extraction solvents used in the production of foodstuffs.[51]

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42. *See id.* ¶ 4.
43. *Id.*
44. *Id.* ¶ 9.
45. *See generally id.*
46. *Id.* ¶¶ 10-13.
47. *See id.* ¶ 16.
48. *See id.* art. 1.2.
49. *Id.* art. 2.3 (a)-(b).
50. *See id.* ¶ 20.
51. *See* Commission Decision 98/613/EC of 21 Oct. 1998 Concerning a Draft Decree of the Republic of Austria on the Identification of Genetically Modified Additives and Flavourings Used as Food Ingredients, 1998 O.J. (L 291)

Observers regarded the change as a response to increased consumer pressure.[52] Officially, the impetus for the change was Austria's attempt to pass a unilateral measure that surpassed the EC's regulations by requiring labeling of all products containing GMOs.[53] Asserting that such regulatory variance "would be sure to hinder intra-Community trade,"[54] the EC required Austria to suspend the adoption of its regulation for twelve months.[55] The Commission pointed out, however, that "it is important" for consumers "to be informed about the use of additives or flavourings genetically modified or produced by genetic engineering,"[56] and resolved that "the most satisfactory solution . . . will be to draw up a Community [labeling] provision."[57] With this amendment, all foods with GMOs would be included in the labeling requirements.[58]

While the EC regulations apply to food produced within the European Union only, it is likely that products produced elsewhere will be forced to follow these requirements.[59] When European-produced products are labeled, GMO-conscious consumers will be unwilling to purchase a food product with a label that contains no information on GMOs or one that makes vague references to the possibility that GMOs are present.[60]

This creates several problems for U.S. agricultural producers and food makers that rely on GMOs for a large percentage of their output. Foremost, any labeling requirement forces them to brand their products in a fashion that will be certain to repulse a significant portion of the European populace. Moreover, it is difficult for the food producers that use GMOs to certify that a given food product contains GMOs.[61] Because the altered crops look the same as "normal" ones, segregating the two groups during harvesting, storage, and transport is difficult.[62] To

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35, ¶¶ 4-8 (European Commission) [hereinafter Commission Decision 98/613/EC of 21 Oct. 1998]; *see also* Kevin O'Sullivan, *Consumer Victory as EU Broadens Rules on the Labeling of GM Foods*, IRISH TIMES, Nov. 13, 1998, at 5.

52. *See* O' Sullivan, *supra* note 51. Previously, the EC had rejected Green-sponsored attempts to amend the labeling requirements. *See id.*

53. *See* Commission Decision 98/613/EC of 21 Oct. 1998, *supra* note 51, ¶¶ 1-2.

54. *Id.* ¶ 6.

55. *See id.* art. 1.

56. *Id.* ¶ 6.

57. *Id.* ¶ 10.

58. *See* O'Sullivan, *supra* note 51, at 5.

59. *See Tracking Down the GMOs*, FOOD MANUFACTURE, Sept. 1998, at 69.

60. *See id.*

61. *See* Robert Koenig, *Complex Array of Label Rules Gives US Exporters Headaches*, J. COM., Jan. 11, 1999, at 7A.

62. *See id.*

overcome this problem, one U.S. producer desiring to avoid the "Contains GMO"-label developed an "Identity Preservation System" that tracks its soybeans from the farm to the store.[63] Nevertheless, developing the system was expensive,[64] and most U.S. farmers—many of whom can cite financial benefits from GMOs—lack a mechanism to separate genetically-modified products before exporting their output.[65] Finally, as originally promulgated, the GMO-labeling legislation stood to create confusion for even those producers that would be able to segregate their products.[66] The confusion can be blamed on the EC's failure to set a minimum level of genetically-modified ingredients below which no labeling would be required and to specify a specific criteria for testing for GMOs.[67]

The Clinton Administration has expressed a willingness to challenge trade measures that it considers unfair burdens on U.S. producers; it has also professed a desire to encourage the development of biotechnology.[68] In the past, the possibility of European regulation of GMOs prompted threats of trade battles.[69] Although the Clinton Administration has not spoken on the labeling requirements, it is possible that it would challenge them if it felt they impaired U.S. trade interest significantly. Considering that the GMO-labeling requirements stand to force U.S. agricultural producers to choose between incurring substantial expenses to prove to European consumers that GMOs are absent from their products and labeling those products in a fashion that would deter a large portion of the consumer public, challenging the labeling requirements would be wise. The revamped dispute mechanism of the WTO[70] provides the United States with the arena to challenge the GMO-labeling requirements.

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63. *See id.*

64. *See id.*

65. U.S. farmers using GMOs are reporting savings of as much as 50 cents per bushel of soybeans. *See* Lambrecht, *supra* note 2, at A1.

66. *See* Koenig, *supra* note 61, at 7A.

67. *See id.*

68. *See, e.g.*, Sprance, *supra* note 7 (giving an example of the Clinton Administration's stance toward protecting United States interests in these matters); *"Aggressive Action" on Trade Barriers Needed*, AGRA EUROPE, May 22, 1998, at EP *available in* LEXIS, News Library, Magazine Stories Combined File (indicating that President Clinton had asserted that the WTO "must develop rules rooted in science which will encourage the full fruits of biotechnology.").

69. *See id.*

70. See *generally* Sprance, *supra* note 7, at 1243-50 (discussing changes made in the Uruguay Round).

III. THE WORLD TRADE ORGANIZATION'S DISPUTE SETTLEMENT MECHANISM

The 1994 Uruguay GATT significantly altered the adjudication of international trade disputes. While previous GATT agreements had been plagued by ineffective dispute-settlement mechanisms, the Uruguay Round sought to make the process more judicial.[71] It accomplished this goal with the Dispute Settlement Mechanism that it included in the new WTO.[72] The WTO's Dispute Settlement Body (DSB) is responsible for consultations and dispute settlement. GATT has empowered it to establish Panels, adopt Panel and Appellate Body reports, and ensure the implementation of Panel rulings.[73]

A. *Challenging a Trade Regulation in the WTO*

Only WTO member states have standing to bring grievances before the DSB.[74] No private party may bring an action.[75] In practice, when a private party feels that a government's action may have violated some aspect of the Uruguay Round, it will try to convince its home state to act on its behalf. This happened

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71. *See generally id.*

72. Three major flaws hindered the original GATT dispute-settlement process: (1) the party defending against a trade complaint could block the formation of an adjudicatory Panel; (2) after a ruling, the unsuccessful party could block the report; and (3) if the report were adopted, the unsuccessful party could refuse to comply without fear of retaliation. *See* Sarah Hogg & Mahmud Nawaz, *Economic Considerations and the DSU, in* DISPUTE RESOLUTION IN THE WORLD TRADE ORGANISATION 59, 59 (James Cameron & Karen Campbell eds., 1998). The Uruguay Round eliminated those possibilities. *See id.* at 59-60. The voting procedure is now weighted against miscreants; a party wishing to block a Panel's report needs a consensus vote. *See id.* at 60. Although the rulings are not self-executing, they do expose defiant members to the possibility of retaliatory action. *See id.*

73. *See* General Agreement on Tariffs and Trade–Multilateral Trade Negotiations (the Uruguay Round): Understanding on Rules and Procedures Governing the Settlement of Disputes, Dec. 15, 1993, 33 I.L.M. 112, 114, art. 2.1 [hereinafter DSU]. This Note will use the abbreviation "DSB" interchangeably with the names of the Dispute Settlement Body's component parts, the WTO Panel and Appellate Body.

74. See James Cameron & Karen Campbell, *Challenging the Boundaries of the DSU Through Trade and Environment Disputes, in* DISPUTE RESOLUTION IN THE WORLD TRADE ORGANISATION, *supra* note 72, at 204, 226.

75. *See id.* Some have contended that private parties should be able to submit amicus curaie briefs to the DSB, or be able to intervene on their own. *See id.* at 226-27.

when the United States, acting at Monsanto's urging, challenged the EC's restrictions on beef hormones in 1996.[76]

The WTO has provided a three-stage process for such challenges: (1) consultation, (2) Panel hearing. and (3) appeal. Initially, the challenging party must request that the offending party enter into consultations to negotiate a mutually acceptable solution.[77] The challenged nation may avoid such negotiation entirely by refusing to enter the consultations.[78] If the challenged state agrees to negotiate, the parties have sixty days from the beginning of the consultations to resolve the dispute; if they have not reached an agreement at that point, or the challenged nation has refused to negotiate in the first place, the challenging state is permitted to request that a Panel decide the issue.[79]

B. *The WTO's Dispute Settlement Panel*

Although the Panel process was a feature of previous GATT dispute-settlement mechanisms, the current incarnation is regarded as a significant improvement over its predecessors.[80] For the first time, maximum time limits have been established for each stage of the dispute settlement process.[81] Additionally, the Panelists are now required to have extensive trade experience.[82]

The WTO Panel, which consists of three individuals, is entrusted to make "an objective assessment of the facts of the case and the applicability of and conformity with the relevant covered agreements."[83] To do so, it may seek information and advice from any individual or body it deems appropriate.[84] Once the parties agree on the Panel's composition, it must conclude its work in six months.[85]

After hearing arguments from both sides, the Panel submits an interim report to the parties.[86] Both members may register objections before the report moves to the DSB for consideration.[87]

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76. *See* NOTTINGHAM, *supra* note 1, at 115.
77. *See* General Agreement on Tariffs and Trade-Multilateral Trade Negotiations (the Uruguay Round): Agreement Establishing the Multilateral Trade Organization, Dec. 15, 1993, 33 I.L.M. 13, 17, art. 4.4 [hereinafter WTO Agreement].
78. *See id.* art. 4.7.
79. *See id.*
80. *See* Sprance, *supra* note 7, at 1247-48.
81. *See id.* at 1247-48.
82. *See* DSU, *supra* note 73, art 8.1; Sprance, *supra* note 7, at 1248.
83. DSU, *supra* note 73, art. 11.
84. *See id.* art. 13.1.
85. *See id.* art. 12.8.
86. *See id.* arts. 3.7, 12.6, 15.2.
87. *See id.* arts. 16.1-16.2.

The DSB will adopt the report, unless a party decides to appeal or all members of the board agree that it should not adopt the report.[88] The requirement of a consensus to block the Panel report is one of the major differences between the WTO and its predecessors; previously, the disagreement of a single member state was sufficient for blocking the report.[89] If a party notifies the DSB of its intention to appeal the report, the DSB will not adopt the report until after the Appellate Body decides the appeal.[90]

Once the DSB has adopted the report, the affected party has thirty days to notify the board of its intentions regarding implementation.[91] The GATT empowers the DSB to monitor the implementation of its reports permanently.[92] If a member fails to implement a Panel recommendation or provide compensatory benefits within a reasonable time, the DSB will sanction that member automatically.[93] In the event of a disagreement on the amount and duration of sanctions or time for compliance, the member has a right to arbitration.[94]

C. *The WTO's Appellate Body*

Seven members serving four-year terms constitute the DSB's standing Appellate Body, another innovation of the Uruguay Round.[95] The original parties to the dispute hold the exclusive right of appeal, although a third party who has notified the DSB of a substantial interest in the case may make written submissions and be heard by the Appellate Body.[96]

Three of the seven members hear an appeal.[97] Their review is limited to issues of law and legal interpretation.[98] If it finds that a measure is inconsistent with a WTO agreement, the Appellate Body will recommend that the offending party bring its trade measures into conformity with the appropriate agreements.[99] Absent consensus not to adopt, the DSB will

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88. *See id.* art. 16.4.
89. *See* Hogg & Nawaz, *supra* note 72, at 59-60.
90. *See* DSU, *supra* note 73, art. 16.4.
91. *See id.* art. 21.3.
92. *See id.* This is another innovation of the Uruguay Round. *See* Sprance, *supra* note 7, at 1249.
93. *See* DSU, *supra* note 73, art. 22.
94. *See id.* art. 25.1.
95. *See id.* arts. 17.1-17.2.
96. *See id.* art. 17.4.
97. *See id.* art. 17.2.
98. *See id.* art. 17.6.
99. *See id.* arts. 19-19.1.

adopt the Appellate Body's report within thirty days after its circulation to DSB members.[100]

IV. APPLICABLE LAW

Strictly speaking, WTO Panel and Appellate Body report rulings and conclusions are considered to apply only to the matter and parties in the particular case before them.[101] The system has no concept of universally-binding stare decisis.[102] The Appellate Body, however, has recognized that prior decisions are important, since the precedents create legitimate expectations among WTO members.[103] WTO cases contain many references to previous cases and prior interpretations of the GATT, so one cannot be sure of the extent to which precedents are being ignored.[104]

The GATT strives to promote the international economy by reducing barriers to trade and eliminating protective treatment of domestic goods.[105] It especially disfavors national laws that protect domestic goods at the expense of imports.[106] Two sections of the GATT agreement work to prohibit discrimination against imports.[107] Article III, the national treatment clause, forbids internal taxes and regulations that serve as protection for domestic production.[108] Article XI prohibits restrictions on import quantities.[109] The difference between Articles III and XI is that Article III applies to measures that affect the qualities of imported products, while Article XI applies to measures that affect the importation of products.[110]

If a regulation violates Article III or Article XI, it still may be permissible, as long as it qualifies under a GATT exception.[111] GATT Article XX contains the general exceptions that a regulating member may invoke to maintain a regulation that otherwise

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100. *See id.* art. 17.14.

101. *See* Debra P. Steger & Susan M. Hainsworth, *New Directions in International Trade Law: WTO Dispute Settlement, in* DISPUTE RESOLUTION IN THE WORLD TRADE ORGANIZATION, *supra* note 72, at 28, 37-38.

102. *See id.*

103. *See id.*

104. *See generally id.*

105. *See generally* General Agreement on Tariffs and Trade, Oct. 30, 1947, 61 Stat. A-11, T.I.A.S. 1700, 55 U.N.T.S. 194 [hereinafter GATT].

106. *See id.* arts. III & XI.

107. *See* Rick Franzen, *Will GATT Take a Bite Out of the Organic Food Production Act of 1990?*, 7 MINN. J. GLOBAL TRADE 399, 408 (1998).

108. *See* GATT, *supra* note 105, art. III.

109. *See id.* art. XI.

110. *See* Franzen, *supra* note 107, at 409.

111. *See id.*

violates the GATT.[112] Two products of the Uruguay Round, the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) and the Agreement on Technical Barriers to Trade (TBT Agreement), have restricted the use of Article XX defenses, however.[113] The SPS Agreement requires that measures aimed at protecting human, animal, or plant life have a scientifically supported and verifiable basis;[114] the TBT Agreement requires that packaging, marketing, and labeling requirements not create unnecessary barriers to international trade or unjustifiably or arbitrarily discriminate against imports.[115] Additionally, Article XI contains internal exceptions that a regulating member can invoke without having to rely on Article XX.[116]

Determining whether a regulation would survive a WTO challenge requires a two-step inquiry. The first step is to select the provision that governs the regulation; the second is to decide whether the regulation satisfies the requirements of the provision. In most cases, it is possible to argue that several different provisions of the GATT could cover a given regulation, depending on how the WTO elects to categorize it. When one member challenges the regulations of another, the respective parties will attempt to convince the WTO Panel of the appropriate governing provision. This process can take two paths. First, the challenging member can prove to the Panel that the regulation represents a prima facie violation of a GATT provision.[117] In that situation, the intersection between the violation and the regulating member's affirmative defense will determine the governing law.[118] Additionally, one or both of the disputing parties can contend that a Uruguay Round provision, operating

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112. *See* GATT, *supra* note 105, art. XX.

113. *See* Franzen, *supra* note 107, at 409.

114. *See* Agreement on the Application of Sanitary and Phytosanitary Measures, GATT Doc. MTN/FA II-A1A-4, art. 2.2 (Dec. 15, 1993) *reprinted in* THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS: THE LEGAL TEXTS 69, 70 (1994) [hereinafter SPS Agreement].

115. *See* Agreement on Technical Barriers to Trade, GATT Doc. MTN/FA II-AIA-6, preamble (Dec. 15, 1993) *reprinted in* THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS: THE LEGAL TEXTS, *supra* note 114, at 138 [hereinafter TBT Agreement].

116. *See* GATT, *supra* note 105, art. XI, ¶ 2. ("The provisions of paragraph 1 of this article shall not extend to the following [exceptions] . . . .").

117. *See, e.g.*, Franzen, *supra* note 107, at 412-13 (describing the procedure of a GATT Article III claim, which involves the challenging member proving a prima facie violation and the regulating member asserting an affirmative defense).

118. *See id.*

independent of the GATT, is the governing law.[119] This happened in the *Beef Hormone* case of 1996. In that case, the United States successfully challenged an EC ban on the administration of growth promotion hormones to farm animals and the sale of domestic and imported meat from animals that had received those hormones, which was passed in response to the "mad cow" scare.[120] The United States argued that the WTO should consider the ban a sanitary measure.[121] The WTO agreed, and evaluated the regulation under the SPS Agreement without investigating whether the EC's ban was an underlying GATT violation.[122]

Choosing the appropriate provision requires answering a series of questions involving the characterization of the challenged regulation.[123] For the GMO-labeling requirements, the analysis begins by asking whether the regulation should be considered sanitary measures or non-sanitary measures.[124] If the labeling requirements are judged to be sanitary measures, the inquiry moves to the second prong, and the requirements must satisfy the SPS Agreement to be sustained.

If they are considered non-sanitary measures, the analysis must include another characterization inquiry: whether the regulations attempt to control the imported products as products or whether they seek to control the process of production of the products.[125] If they are found to regulate the products as products, they can be challenged under the TBT Agreement and must meet its requirements.[126] If, on the other hand, they are viewed as a process regulation, they can be challenged as import

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119. *See, e.g., id.* at 417 (describing how the United States persuaded the WTO Panel to analyze the *Beef Hormone* case under the SPS Agreement, without examining for an underlying GATT violation).

120. *See* Layla Hughes, Note, *Limiting the Jurisdiction of Dispute Settlement Panels: The WTO Appellate Body Beef Hormone Decision*, 10 GEO. INT'L ENVTL. L. REV. 915, 917 (1998).

121. *See* Panel Report, EC Measures Concerning Meat and Meat Products (Hormones), Complaint by the United States, Aug. 18, 1997, DS26/R/USA, 1997 WL 569984, *18, ¶ 4.5 [hereinafter Beef Hormone Panel Report].

122. *See id.* The WTO Panel found that "there is no requirement . . . that a prior violation of a GATT provision need be established before the SPS Agreement applies." *Id.* at *192, ¶ 8.41

123. *See generally* Franzen, *supra* note 107, at 420-29 (describing a potential challenge to the U.S. Organic Food Production Act of 1990 under GATT).

124. *See id.* at 423.

125. *See id.* (explaining that analysis as a non-sanitary measure under GATT can be approached either as a product regulation or as a process regulation).

126. *See id.* at 426 ("As a product regulation, the OFPA [Organic Food Production Act of 1990] is open to challenge under . . . the TBT Agreement. . . .").

restrictions under Article XI, and must satisfy its internal conditions.[127]

A. *Determining Whether the Regulation Is a Sanitary Regulation*

The first step in evaluating how the WTO would analyze the GMO-labeling requirements is characterizing those requirements as sanitary measures or non-sanitary measures.[128] The SPS Agreement, designed to control regulations classified as "sanitary" or "phytosanitary," defines a sanitary or phytosanitary measure as one applied "to protect human life or health . . . from risks arising from additives, contaminants, toxins or disease-causing organisms in foods, beverages or feedstuffs."[129] If the challenged regulations are viewed as sanitary measures, they must satisfy the requirements of the SPS Agreement; if not, they would be covered by the TBT Agreement and Article XI.[130]

There are two ways the WTO classifies a regulation as a sanitary measure. First, as happened in the *Beef Hormone* case, one or both of the disputing parties can persuade the WTO Panel that the regulation is a sanitary measure and, as such, should be governed by SPS Agreement.[131] This is possible because the SPS Agreement, according to the WTO Panel, has independent significance from the GATT. The Panel found that "there is no requirement . . . that a prior violation of a GATT provision need be established before the SPS Agreement applies."[132]

To move directly to the SPS Agreement, the parties would have to establish two elements to the satisfaction of the WTO Panel: (1) that the regulation has a sanitary or phytosanitary purpose, and (2) that it "may, directly or indirectly, affect international trade."[133] The second test is not an empirical standard; the parties need not show proof that the regulation has reduced the flow of trade.[134] Rather, in the second step the parties must show that the measure applies to imported

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127. *See id.* at 423 ("If the OFPA [Organic Food Production Act of 1990] is instead viewed as a process regulation, it could be challenged as an import restriction under Article XI.")

128. *See id.* at 420.

129. SPS Agreement, *supra* note 114, Annex A, ¶ 1.

130. *See supra* notes 120-24 and accompanying text.

131. *See* Franzen, *supra* note 7 at 412-17; *supra* notes 117-19 and accompanying text.

132. *See* Beef Hormone Panel Report, *supra* note 121, at *192, ¶ 8.41.

133. Dale E. McNiel, *The First Case Under the WTO's Sanitary and Phytosanitary Agreement: The European Union's Hormone Ban*, 39 VA. J. INT'L L. 89, 113 (1998).

134. *See id.*

products; if it does, it can be presumed to have a negative effect on trade.[135]

The regulation can also be scrutinized as a sanitary regulation if the challenging member can establish that the regulation is contrary to GATT Article III.[136] To show a prima facie violation of Article III, the challenging party must demonstrate three things.[137] First, the measure must be an internal regulation.[138] GATT defines an internal regulation as any governmental action that applies to all goods, whether foreign or domestic.[139] Second, the regulation must affect the sale purchase, or use of the product.[140] This requirement has been interpreted broadly; a sale is affected if the regulation directly governs the conditions of the sale or when it may "adversely modify the conditions of competition between the domestic and imported products on the internal market."[141] Finally, the products affected must be "like" those domestic products that the measure in question protects.[142] Factors in determining whether products are "alike" include customer preferences, tariff classification, end use, and physical properties and characteristics.[143]

If the challenging member establishes these elements, the regulating member can defend its regulation by raising an affirmative defense under Article XX.[144] An Article XX defense of the EC's GMO-labeling requirement would be that it is a sanitary measure, designed to protect human health or the environment.[145] If the regulating member asserts that the regulation is a sanitary measure, the challenging member must demonstrate that the regulation fails to satisfy the requirements of the SPS Agreement.

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135. *See id.*
136. *See* Franzen, *supra* note 107, at 413.
137. *See id.* at 412.
138. *See id.*
139. *See id.*
140. *See id.*
141. *Id.* at 413 (quoting Panel on "Italian Discrimination Against Imported Agricultural Machinery," Oct. 23, 1958, GATT B.I.S.D. (7th Supp.) at 60 (1959)).
142. *See id.* at 412.
143. *See id.* at 413 (citing Panel on "Japan—Customs Duties, Taxes and Labelling Practices on Imported Wines and Alcoholic Beverages," Nov. 10, 1988, GATT B.I.S.D. (34th Supp.) at 83).
144. *See id.*
145. *See id.*

B. *WTO Evaluation of a Sanitary Measure: The SPS Agreement*

Although GATT member states designed Article III to prevent trade discrimination by requiring members to treat domestic and foreign products identically,[146] they carved out an exception in Article XX for discriminatory measures that are "necessary to protect human, animal or plant life or health."[147] The SPS Agreement is the WTO's means for applying this exception to measures implemented to protect against pests, diseases, and risks arising from additives, contaminants, toxins, or disease-causing organisms in food.[148] In other words, it "strives to clarify the situations under which discrimination is permissible to protect health and the environment."[149]

The WTO's DSB has had three opportunities to interpret the SPS Agreement.[150] In all three disputes, it overturned the challenged regulations because they failed to satisfy the Agreement. The first was the *Beef Hormone* case.[151] Later, the DSB upheld a Canadian challenge to an Australian ban on the importation of fresh, chilled, and frozen salmon from Canada.[152] Finally, the DSB, at the urging of the United States, struck down a Japanese requirement that banned individual varieties of some agricultural products from importation until each variety had been tested for the required quarantine treatment.[153] The Appellate Body's conclusions of law in the *Beef Hormone* and *Salmon* cases and the Panel's conclusions in the *Japan-Agricultural* case are not binding on future SPS Agreement cases, but they are indicative of the approach that the Panel and Appellate Body would be likely to take.[154]

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146. GATT, *supra* note 105, art. III, ¶ 4.

147. *Id.* art. XX(b), ¶ I(b).

148. *See* SPS Agreement, *supra* note 114, Annex A, ¶ 1.

149. Hughes, *supra* note 120, at 917.

150. *See* Terence P. Stewart & David S. Johanson, *The SPS Agreement of the World Trade Organization and International Organizations: The Roles of the Codex Alimentarius Commission, the International Plant Protection Convention, and the International Office of Epizootics*, 26 SYRACUSE J. INT'L L. & COM. 27, 34.

151. *See supra* notes 119-22 and accompanying text.

152. Australia had contended that the prohibition was necessary to protect fish from diseases that could enter the country through the imported salmon. *See* Stewart & Johanson, *supra* note 150, at 36.

153. *See id.* at 39. Unlike the other two disputes decided under the SPS Agreement, which advanced to the Appellate Body, the Japan-Agriculture case was heard at the Panel level only at the time of writing this note. *See id.* at 40. The Japanese intend to appeal the findings of the Panel. *Id.*

154. *See* DSU, *supra* note 73; *supra* notes 86-90 and accompanying text.

It is possible that the EC's GMO-labeling requirements could violate the SPS Agreement in three ways: (1) the SPS Agreement's "scientifically supported/necessary" requirement;[155] (2) the "arbitrary or unjustifiable distinction" requirement;[156] and (3) the "international standards" requirement.[157] A sanitary measure must satisfy all three to gain the blessing of the DSB.

The "scientifically supported/necessary" requirement, as dictated by Articles 2.2, 5.1, and 5.6, has two elements.[158] Under the "scientifically supported" prong, a sanitary measure must be "based on" a risk assessment and not "maintained without sufficient scientific evidence."[159] The "necessary" prong requires that the measure be necessary for achieving the regulating member's selected level of protection.[160]

The *Beef Hormone* case provided significant interpretations of the "risk assessment" and "scientific evidence" elements of the "scientifically supported" prong. Its guidance on the "risk assessment" element is particularly helpful. Article 5.1 of the SPS Agreement requires members to base their SPS measures "on an assessment, as appropriate to the circumstances, of the risks to human, animal or plant life or health, taking into account risk assessment techniques developed by the relevant international organizations."[161] SPS Agreement Annex A defines a risk assessment as the

> evaluation of the likelihood of entry, establishment or spread of a pest or disease within the territory of an importing Member according to the sanitary or phytosanitary measures which might be applied . . . [or] the evaluation of the potential for adverse effects on human or animal health arising from the presence of additives, contaminants, toxins or disease-causing organisms in food, feedstuffs and beverages.[162]

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155. The "scientifically supported/necessary" requirement is mandated by Articles 2.2, 5.1 and 5.6. *See* Vern R. Walker, *Keeping the WTO from Becoming the "World Trans-science Organization": Scientific Uncertainty, Science Policy and Factfinding in the Growth Hormones Dispute*, 31 CORNELL INT'L L.J. 251, 271-72 (1998).

156. The "arbitrary or unjustifiable distinction" finds its source of authority in Article 2.3. *See* McNiel, *supra* note 133, at 127-28.

157. The "international standards" requirement comes from Articles 3.1, 3.2, and 3.3. *See* Walker, *supra* note 155, at 273.

158. *See id.* at 271-72.

159. SPS Agreement, *supra* note 114, ¶ 6; Walker, *supra* note 155, at 271.

160. *See* SPS Agreement, *supra* note 114, ¶ 5; Walker, *supra* note 155, at 271.

161. SPS Agreement, *supra* note 114, ¶ 16.

162. *Id.* Annex A, ¶ 4. The Appellate Body in the *Beef Hormone* case held that this did not require a minimum magnitude of risk before a member could establish a measure. *See* World Trade Organization, Report of the Appellate Body:

In the *Beef Hormone* case, the Appellate Body ruled that the risk assessment was a substantive requirement.[163] It held that Article 5.1, by requiring that measures be "based on" a risk assessment, imposed a substantive obligation that the measure bear an "objective relationship" to the information derived from the risk assessment.[164] This reversed the Panel's interpretation that Article 5.1 required that a member establish that it considered the results of the risk assessment when enacting an SPS measure.[165] The Appellate Body required only that risk studies be produced in a dispute settlement hearing; it did not require evidence of the EC's past reliance on such studies.[166] Moreover, a member is not required to conduct its own risk assessment.[167] It can defend its measures by relying on an assessment conducted by another member or an international organization.[168]

Article 5.2 specifies the nature of the risk assessment: a regulating member "shall take into account available scientific evidence; relevant processes and production methods; relevant inspection, sampling and testing methods; prevalence of specific diseases or pests; existence of pest-[free] or disease-free areas; relevant ecological and environmental conditions; and quarrantive or other treatment."[169] The Appellate Body in the *Beef Hormone* case held that this list was not exclusive.[170] Additionally, Article 5.2 indicates that the risk assessment requirement included risks not ascertainable in a laboratory, but "risk in human societies as they actually exist, in other words, the actual potential for adverse effects on human health in the real world where people live and work and die."[171] In the *Beef*

EC Measures Concerning Meat and Meat Products (Hormones), Jan. 16, 1998, 1998 WL 25520, *57 (W.T.O.) [hereinafter Beef Hormone Appellate Report].

163. *See id.*, at *54, ¶193.

164. *Id.* The Appellate Body saw the substantive requirement as a specific application of the basic obligation in Article 2.2, which requires that SPS measures be based on "scientific principles" and not maintained without "sufficient scientific evidence." Beef Hormone Appellate Report, *supra* note 162, at *50.

165. *See* Hughes, *supra* note 120, at 925.

166. *See* Walker, *supra* note 155, at 298-99. The requirement that a defending member have performed or obtained adequate risk assessment studies prior to the Panel's request for them could be considered a minimal procedural requirement. *See id.*

167. *See id.* at 298 (citing Beef Hormone Appellate Report, *supra* note 162, at *53, ¶ 190).

168. *See id.*

169. SPS Agreement, *supra* note 114, ¶ 17.

170. *See* Beef Hormone Appellate Report, *supra* note 162, at *52, ¶ 187.

171. *Id.*

Hormone case, this was held to mean that as long as the EC could establish that the use of growth hormones in beef posed a potential danger to human health, it would have the right to set any level of protection it wanted.[172]

Similarly, the WTO rejected the EC's attempt to invoke the Precautionary Principle—the idea that in cases of uncertain or unknown health or safety risks, it is better to err on the side of safety by regulating too stringently, rather than too leniently—in the *Beef Hormone* case.[173] The EC had claimed that the unknown long-term effects of hormones justified a complete ban to protect customers.[174] The Appellate Body affirmed the Panel's conclusion that the SPS Agreement incorporated the Precautionary Principle rendering it invalid as an independent defense.[175] This demonstrates that caution alone, without scientific support, probably will not be sufficient to support a sanitary measure.[176]

Although the *Beef Hormone* decision's treatment of the "scientifically supported" prong was less extensive than its coverage of the "risk assessment" prong, it also offered valuable guidance. The DSB ruled that the requirement that sanitary measures "not be maintained without sufficient scientific evidence" demanded specific scientific proof of the harmful effects of the regulated item.[177] In the *Beef Hormone* case, the Appellate Body determined that the scientific information that the EC submitted in support of the measure did not provide sufficient support; the evidence showed the existence of a general risk of cancer but was not specific enough.[178] This suggests that a member seeking to establish or maintain sanitary measures is obliged to provide scientific studies that assess the risk posed by the specific target of regulation when used in a specific way.[179] Similar to its approach to the risk assessment prong, the DSB refused to distinguish between older evidence and "new evidence" produced for the first time in the context of the Panel proceeding.[180]

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172. *See id.* at *53, ¶ 189-90.

173. *See* Franzen, *supra* note 107, at 417.

174. *See* Beef Hormone Panel Report, *supra* note 121, *16, ¶ 3.6.

175. *See* Beef Hormone Appellate Report, *supra* note 162, at *70, ¶ 253; Beef Hormone Panel Report, *supra* note 121, at *231, ¶ 8.249.

176. *See* Franzen, *supra* note 107, at 418.

177. Walker, *supra* note 155, at 299.

178. *See id.* (quoting Beef Hormones Appellate Report, *supra* note 162, at *56, ¶ 200).

179. *See id.* at 299-300.

180. *See id.* at 310 (quoting Beef Hormones Appellate Report, *supra* note 162, at *53-56, ¶¶ 192-209).

Commentators have criticized the potential power of a risk assessment and scientific justification for deciding the "scientifically supported" prong in SPS Agreement disputes. The WTO's SPS Agreement jurisprudence suggests that a member seeking to sustain a sanitary regulation need only find a scientist who would be willing to issue a report concluding that a certain activity targeted by a regulation poses a serious risk to human health or the environment sufficient to justify a ban on that activity.[181]

The "necessary" prong of the "scientifically supported/necessary" requirement has two elements.[182] First, the measure must be reasonably effective in bringing about the targeted level of protection.[183] If a trade measure does not help to protect, it cannot be justified as a means of providing protection.[184] Additionally, it must be reasonably efficient in achieving that protection, which means that it must minimize collateral effects on international trade.[185] A member may take effective measures for achieving its level of protection, provided that it does not have any alternative means for achieving the same level of protection that are "significantly less restrictive to trade."[186]

The "arbitrary or unjustifiable distinctions" requirement is mandated by Article 2.3.[187] It requires members to avoid arbitrary or unjustifiable distinctions in the levels of protection they consider appropriate in different situations, "if such distinctions result in discrimination or a disguised restriction on trade."[188] The concept of "arbitrary or unjustifiable" has been widely regarded as challenging to define because of the difficulty of determining consistency among levels of protection involving different substances, different adverse effects, and different products.[189] For this reason, it has been suggested that regulations should be found "arbitrary or unjustifiable" in the most blatant and unexplainable cases only.[190] Although it is early in the development of WTO jurisprudence, this narrow interpretation may be emerging as the DSB's approach. The Appellate Body found that a challenged sanitary measure violated

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181. *See* McNiel, *supra* note 133, at 93.
182. *See* Walker, *supra* note 155, at 271.
183. *See id.*
184. *See id.*
185. *See id.*
186. *Id.*
187. *See* McNiel, *supra* note 133, at 127-30.
188. SPS Agreement, *supra* note 114, art. 5, ¶ 5.
189. *See* Walker, *supra* note 155, at 269.
190. *See id.* at 270.

this principle only once in the *Australia Salmon* decision.[191] In that case, Australia had been more restrictive towards imports of salmon than towards imports of ornamental live fish, even though the ornamental fish posed higher risks.[192] By contrast, the Appellate Body in the *Beef Hormone* case reversed the Panel's finding of "arbitrary or unjustifiable."[193] It ruled that even if the difference in levels of protection created by the measures was unjustifiable, the degree of difference between the two levels had to be sufficient enough to force reversal; the degree of difference between the "no residue" and "unlimited residue" levels was not sufficient.[194]

Finally, the "international standards" requirement is based on the harmonization requirements of Articles 3.1 and 3.3.[195] In evaluating whether a sanitary regulation satisfies this requirement, the initial inquiry is whether the regulation conforms to international standards.[196] The SPS Agreement defines "internationally-accepted standards" for measures aimed at human health as the standards established by the Codex Alimentarius Commission (Codex Standards).[197] For plant life, the appropriate standards are the International Plant Protection Convention Standards (IPPC Standards).[198]

If a sanitary measure conforms to the appropriate international standard, the measure is presumed to be consistent with the SPS Agreement.[199] None of the Agreement-interpreting cases have dealt with a challenge to a regulation that conformed to the international standards, but it is likely that the challenging member would need to overcome a heavy burden of proof to rebut this presumption.

On the other hand, if the measure fails to conform to international standards, an equally heavy burden does *not* shift to the regulating party, according to the Appellate Body decision in the *Beef Hormone* case.[200] Rather, the Appellate Body held

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191. *See* World Trade Organization, Report of the Appellate Body: Australia—Measures Affecting Importation of Salmon, Oct. 20, 1998, WT/DS18/AB/R, AB-1998-5, 1998 WL 731009, at *9-20, 28, ¶¶ 85-86, 93 and 124.

192. *See id.* at *35-40, ¶¶ 154-78.

193. Beef Hormones Appellate Report, *supra* note 162, ¶ 225.

194. See Walker, *supra* note 155, at 312-13 (citing Beef Hormones Appellate Report, *supra* note 162, ¶¶ 236-46).

195. *See* Hughes, *supra* note 120, at 919-28.

196. *See* SPS Agreement, *supra* note 114, art. 3, ¶¶ 1 & 3; Hughes, *supra* note 120, at 919-20.

197. *See* SPS Agreement, *supra* note 114, Annex A, ¶ 3.

198. *See id.*

199. *See id.* art. 3, ¶ 2.

200. *See* Hughes, *supra* note 120, at 920; Walker, *supra* note 155, at 314-15 & nn.306-07.

that the harmonization of SPS measures with "international standards" constitutes a "goal" that the agreement considered "yet to be realized in the future."[201] It follows that a member's failure to meet such international standards would not be damning enough to warrant reversing the burden of proof. Instead, the regulating member is required to "counter or refute" the claimed inconsistency with the SPS Agreement.[202] Although this is a vague formulation, it suggests a far lower burden than a full-blown burden of proof.[203] Since the Appellate Body viewed the international standards as voluntary recommendations, not norms, one commentator interpreted this ruling as converting the obligation to base sanitary measures on existing international standards into "an idealistic but wholly unenforceable objective."[204]

If a non-conforming measure is challenged in the WTO, the member imposing the measure must support it with a scientific justification, which the Appellate Body interpreted in the *Beef Hormone* case as requiring both a risk assessment and a justification based on scientific evidence.[205] In this respect, the "international standards" requirement applies the same analysis as the "necessary/scientifically supported" requirement.[206] If the WTO's DSB decides that the challenged measure is a sanitary measure, it will evaluate the measure according to the SPS Agreement. If, however, the DSB concludes that it is not a sanitary measure, the governing provision may be Article III, Article XI, or the TBT Agreement.

C. *WTO Evaluation of a Non-Sanitary Measure*

If the WTO's DSB decides that a regulation is not a sanitary measure, the analysis turns to whether the regulation attempts to regulate the products as products, or whether it seeks to regulate the process of the product's production.[207] Although it preceded the Uruguay Round, the 1991 *Tuna/Dolphin* case provides guidance on how the WTO Panel and Appellate Body would distinguish between product regulations and process-of-

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201. Beef Hormone Appellate Report, *supra* note 162, ¶ 165.
202. *Id.* ¶ 98; Walker, *supra* note 155, at 315 n.307.
203. *See id.*
204. McNiel, *supra* note 133, at 123.
205. *See* Beef Hormones Appellate Report, *supra* note 162, ¶ 177; Hughes, *supra* note 120, at 923.
206. *See supra* notes 159-86 and accompanying text.
207. *See* Franzen, *supra* note 107, at 423-24.

production regulations.[208] In that case, Mexico and the EC challenged a U.S. ban on the importation of tuna harvested by methods resulting in the incidental deaths of dolphins.[209] The Panel concluded that the ban was a "process" regulation because it distinguished tuna products based on the method by which they were harvested, rather than the end products themselves.[210] This led the Panel to rule that Article III did not apply, since Article III applies to regulations affecting the quality, safety, or features of the end product only.[211] Instead, it ruled that Article XI governed this case.

If the WTO characterizes the regulation as dealing with "products as products," the challenging state must bring its claim under Article III or the TBT Agreement.[212] Considering the Article III possibility is unnecessary, however.[213] As with a sanitary measure, the challenging party would attempt to make a prima facie case of an Article III violation. If it succeeded, the regulating party would have to counter with an Article XX defense, which would shift the dispute away from non-sanitary adjudication under Article III into SPS Agreement territory.[214] Although the DSB has never evaluated a challenged regulation under the TBT Agreement, the DSB's experience with its fellow Uruguay Round creation, the SPS Agreement, suggests that it would allow an independent challenge under the TBT Agreement, without requiring proof of a GATT violation.[215] For this to happen, one or both of the parties would have to persuade the WTO Panel that the regulation dealt with the products themselves, not the process of their production.[216]

If, on the other hand, the WTO finds that the regulation regulates the process of the product's production, Article XI would govern the challenge.[217] In that situation, the challenging

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208. *See* United States—Restriction on Imports of Tuna, Sept. 3, 1991, GATT B.I.S.D. (39th Supp.) at 155 (1993) (Panel report not adopted by the GATT Contracting Parties) [hereinafter Tuna/Dolphin]; Franzen, *supra* note 107, at 424.

209. *See* Tuna/Dolphin, *supra* note 208, ¶¶ 5.1-5.4.

210. *See id.* ¶ 5.11.

211. *See* Franzen, *supra* note 107, at 411-12.

212. *See id* at 423-29 (analyzing a potential challenge to the U.S. Organic Food Production Act of 1990 as a non-sanitary measure that deals with products as products).

213. *See id.* at 428-29.

214. *See id.* at 429.

215. *See supra* notes 131-35 and accompanying text.

216. *See id.* (describing the process of persuading the DSB that a regulation is a sanitary regulation).

217. *See* GATT, *supra* note 105, art. III, ¶ 4 (indicating that GATT Article III does not apply to regulations based on the process by which a product is made or manufactured); Tuna/Dolphin, supra note 208, ¶ 5.10; Franzen, *supra* note 107, at 429.

party would attempt to show that the regulation constitutes a prima facie violation of Article XI.[218] If it does, the regulating member would counter with one of Article XI's internal exceptions.[219]

1. Evaluation as a Regulation of the Product as a Product: The TBT Agreement

If the regulation is a non-sanitary regulation that controls the product as a product, it is open to challenge under the TBT Agreement. In passing the TBT Agreement, GATT members sought to "ensure [that] technical regulations and standards . . . do not create unnecessary obstacles to international trade."[220] The TBT Agreement applies to all industrial and agricultural products.[221] Although the *Beef Hormone*, *Australia Salmon*, and *Japan-Agriculture* cases provide some guidance as to how the WTO might evaluate an SPS Agreement case, no counterparts exist for the TBT Agreement; instead, this is an undeveloped area of WTO jurisprudence.[222]

Included in the definition of technical regulations are documents that contain "product characteristics or their related processes and production methods," which "may . . . include . . . labelling requirements as they apply to product, process or production method."[223] Article 2.2 of the TBT Agreement forbids technical regulations and standards that are "prepared, adopted, or applied with a view to or with the effect of creating unnecessary obstacles to international trade" and requires that the regulations and standards "fulfill a legitimate objective."[224] Legitimate objectives include prevention of deceptive practices, protection of human health and safety, and protection of the environment.[225] Additionally, Article 2.8 of the Agreement requires that "[w]herever appropriate . . . technical regulations [shall be] based on product requirements in terms of performance rather than design or descriptive characteristics."[226]

Unlike the SPS Agreement, the TBT Agreement does not require regulations to have a scientific basis.[227] This has led to

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218. *See id.* at 424-25.
219. *See id.* at 414.
220. TBT Agreement, *supra* note 115, preamble.
221. *Id.* art. 1, ¶ 3.
222. *See* Franzen, *supra* note 107, at 420.
223. TBT Agreement, *supra* note 115, Annex 1, ¶ 1.
224. *Id.* art. 2, ¶ 2.
225. *See id.*
226. *Id.* art. 2, ¶ 8.
227. *See generally*, TBT Agreement, *supra* note 115.

one commentator's suggestion that a regulating party, aware that its ostensibly health-minded regulation was not supported by credible scientific evidence, might be able to argue that the SPS Agreement did not apply because the regulation was not intended to protect human health or plant life.[228] Instead, it could contend that it adopted the regulation for some other legitimate purpose, such as harmonizing intra-EC regulations, which would make the TBT Agreement the governing provision.[229] Although the commentator contends that a legislative history that strongly suggests that the measure did have a sanitary purpose—as was the case with the EC in the *Beef Hormone* case—should estop such a claim, he indicates that it would be a closer case for a multi-purpose regulation.[230] Since the WTO did not address the question of whether the *Beef Hormone* regulations violated the TBT Agreement, and the relevant texts fail to provide guidance, this issue remains open for debate.[231]

2. Evaluation as a Regulation of the Process of Production: GATT Article XI

GATT Article XI restricts prohibitions or restrictions on importation of products.[232] The prohibition encompasses both de jure and de facto import prohibitions and restrictions. Although Article XI strongly disfavors such regulations, it does provide limited exemptions.[233] Article XI Section 2(c)(i) allows an exemption for bans of agricultural products in certain situations.[234] When the WTO interpreted this exemption in a 1988 challenge to a Japanese agricultural restriction, it concluded that a party invoking the exemption must meet seven criteria: (1) only import restrictions, not prohibitions, are permitted; (2) the restriction must be on an agricultural product; (3) the government must restrict domestic supplies of the

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228. *See* McNiel, *supra* note 133, at 115.

229. *See id.* at 115-16.

230. *See id.*

231. *See id.* at 116.

232. *See* GATT, *supra* note 105, art. XI. ("No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or export licenses or other measures, shall be instituted or maintained . . . on the importation of any product. . . .").

233. *See id.* art. XI, ¶ 2 ("The provisions of paragraph 1 of this Article shall not extend to the following [exceptions]. . . .").

234. *See id.* art. XI, ¶ 2(c). ("Import restrictions on any agricultural . . . product . . . necessary to the enforcement of [a] governmental measures . . . which operate: (i) to restrict the quantities of the like domestic product . . ., or, if there is no substantial domestic production of the like product, of a domestic product for which the imported product can be directly substituted. . . .").

product; (4) restrictions must be imposed on "like" products; (5) import restrictions must be necessary for the enforcement of the domestic restriction; (6) public notice must be given; and (7) import restrictions must not reduce the proportional market share of each importing country.[235] This narrow construction has made it difficult for a regulating party to employ this defense.[236]

V. WTO ADJUDICATION OF A UNITED STATES CHALLENGE TO THE LABELING REQUIREMENTS

If the United States were to initiate a WTO challenge to the EC's GMO labeling requirements, it is conceivable that the parties could settle their dispute at the consultation stage.[237] Given the shakiness of scientific support for the regulations, settling at that stage may be wise for the EC. Settling a weak case at the consultation stage may allow a regulating party to maintain some portion of its regulation, but an unfavorable WTO ruling would force it to abolish the regulation entirely. This section of the Note, however, assumes that the challenge has passed the consultation stage and moved to WTO adjudication. Presumably, the United States initially would attempt to challenge the GMO-labeling requirements as sanitary measures under the SPS Agreement. If it were unable to persuade the WTO that the requirements are sanitary measures, it would next attempt to challenge them as non-sanitary measures under the TBT Agreement or GATT Article XI.

A. *Adjudication of the GMO-Labeling Requirements as Sanitary Measures*

The GMO-labeling requirements would be adjudicated as sanitary measures if the United States, the EC, or both were able to persuade the WTO Panel that the requirements are sanitary measures and should be evaluated under the SPS Agreement, independently of GATT.[238] Given the volatility of the scientific basis for the regulations, the EC may not want to take this approach; conversely, the United States may favor it for the same reason.

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235. *See* Japan—Restrictions on Imports of Certain Agricultural Products, Mar. 22, 1988, GATT B.I.S.D. (35th Supp.) at 163, 223-27 (1989).

236. *See* Franzen, *supra* note 107, at 414.

237. *See supra* notes 77-79 and accompanying text.

238. *See supra* notes 131-35 and accompanying text.

Determining whether the United States would be able to demonstrate both elements necessary to establish that the GMO-labeling requirements are sanitary measures—a sanitary purpose and an effect on trade—is difficult.[239] The problem lies in the first prong: whether the regulation has a sanitary purpose.[240] The GMO-labeling requirements describe their purpose as creating uniform regulations among the EC member states. They also claim a desire to clarify labeling for consumers.[241] Nowhere do they mention anything about being passed for the purpose of protecting "human, animal or plant life or health."[242] If the WTO Panel accepts the stated purposes at face value, the United States would fail to establish the first element of the test, which would mean that it could not challenge the GMO-labeling requirements under the SPS Agreement.

Several factors suggest, however, that the actual purpose of the requirements was "to protect human, animal or plant life or health" from some sort of risk. The most prominent is the fact that the EC passed the requirements in response to a public outcry fueled by the fear that GMOs would have dire consequences for human health and the environment.[243] In that light, it is easy to imagine that the labeling requirement has a sanitary purpose. The presence of the labels could serve to warn consumers that the food product contained inside may be hazardous to their health. Additionally, although the connection between regulation and risk prevention is more attenuated, the labels could deter environmentally-conscious consumers from purchasing products that contained GMOs which would give agricultural producers an incentive to refrain from using them. This, in turn, would protect plant life from hazards like the runaway patch of oilseed rape in England.[244] Since regulating members admitted sanitary purposes of their regulations in all three previous SPS Agreement decisions, those decisions give no guidance on how the WTO would resolve this problem.

It would be considerably easier for the United States to satisfy the "affect international trade" prong.[245] The labeling requirements stand to hurt U.S. agricultural trade in Europe in several ways. First, the requirements would force GMO-reliant U.S. producers to spend more money to ensure that their

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239. *See supra* note 133 and accompanying text.
240. *See id.*
241. *See supra* notes 42-45 and accompanying text.
242. *See generally id.*
243. *See supra* notes 17-28, 35-58 and accompanying text.
244. *See supra* notes 23-25 and accompanying text.
245. *See supra* note 133 and accompanying text.

products would meet the labeling standards.[246] So labeled, those products would probably be disfavored by much of the European consuming public.[247] Moreover, if the U.S. producer elected to bypass that expense and send its products to the EC states without labels, it is likely that consumers would shy away from those unlabeled products.[248]

If the United States cannot persuade the WTO that it should move directly to the SPS Agreement, it is unlikely that it would be able to succeed via the other route to the SPS Agreement. The other route would constitute demonstrating a prima facie violation of GATT Article III and forcing the EC to plead an affirmative defense under Article XX, which would be scrutinized by the SPS Agreement.[249] The United States could show that the GMO-labeling requirements affect the sale of food products containing GMOs and that their products are "like" the European agricultural products being treated more favorably.[250] The problem, however, would be that the regulations, as written, apply to European goods only; the disadvantaged U.S. producers comply solely because of market necessities.[251] Because of this, the regulations would not be considered "universal," and the United States would not be able to establish all three elements of a prima facie violation.[252]

If the WTO Panel decides to characterize the GMO-labeling requirements as sanitary regulations, the next step would be to evaluate whether the requirements pass the "scientifically supported/necessary," "arbitrarily or unjustifiably discriminates," and "international standards" requirements.[253] To be sustained, the GMO-labeling requirements would have to satisfy all three requirements. Based on the previous WTO decisions and current scientific knowledge, the GMO-labeling requirements would be likely to fail the "scientifically supported/necessary" and the "international standards" prongs of this analysis.

The GMO-labeling requirements would probably fail to satisfy both the "scientifically supported" and "necessary" prongs of the "scientifically supported/necessary" requirement. Given the

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246. *See supra* notes 61-65 and accompanying text.
247. *See id.*
248. *See supra* notes 59-60 and accompanying text.
249. *See supra* notes 136-45 and accompanying text.
250. *See supra* notes 137, 140-43 and accompanying text (describing "affects sale" and "like" elements of three-part test).
251. *See supra* notes 59-60 and accompanying text (describing how GMO-labeling requirements apply to European goods only).
252. *See supra* notes 138-39 and accompanying text (describing "universal" element of three-part test).
253. *See supra* notes 155-57 and accompanying text.

current state of scientific knowledge, the EC would be unlikely to demonstrate to the WTO's satisfaction that its regulation was based on a risk assessment and not maintained without sufficient scientific knowledge.[254] The WTO's requirement for specificity in scientific proof would be particularly harmful for the EC's cause, since no currently-existing studies show that the GMOs subject to the labeling requirements pose a specific threat to human or plant health.[255] Even if accepted as true, Dr. Pusztai's findings on genetically-modified potatoes would fail for lack of specificity. The EC would need to produce a similar study showing adverse effects from genetically-modified soya or corn.[256]

If the DSB found that the EC based its regulations on insufficient scientific knowledge, the regulations would also fail the risk assessment requirement; without a scientifically-proven risk, a risk assessment that results in regulation is necessarily insufficient. The DSB's express rejection of the Precautionary Principle in the *Beef Hormone* case would also be harmful for the EC.[257] Perhaps the strongest possible grounds for sustaining the GMO-labeling requirements would have been that they protect against an unknown or uncertain risk.[258]

Moreover, it also follows that the requirements would not be sufficiently "necessary" to survive WTO scrutiny.[259] If the GMOs subject to the labeling requirements do not have a harmful effect on human health, the requirements could not be considered "effective" for achieving a sanitary goal.[260] Additionally, the United States could challenge the requirements' efficiency in protecting the environment on the grounds that it would be less trade-restrictive to require careful cultivation of the crops when they are grown in EC member states. Such regulation would have a less detrimental effect on the trade efforts of non-EC members than the labeling requirements.

The GMO-labeling requirements would be likely to pass the "arbitrarily or unjustifiably discriminates" requirement.[261] Based on its limited treatment of this requirement, the WTO seems inclined to find a violation in the most blatant cases only, such as when Australia banned the importation of Canadian salmon while

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254. *See supra* notes 29-35, 161-81 and accompanying text.
255. *See supra* notes 29-31, 177-79 and accompanying text.
256. *See supra* notes 32-35 and accompanying text.
257. *See supra* notes 173-76 and accompanying text.
258. *See supra* note 35 and accompanying text.
259. *See supra* notes 182-86 and accompanying text.
260. *Cf.* Walker, *supra* note 155, at 271 ("If a trade-restrictive measure does not in fact help to protect, then it cannot be justified as a means of providing protection.").
261. *See supra* notes 187-94 and accompanying text.

permitting the entry of a more harmful fish.[262] No equally obvious counterpart to the genetically-modified agriculture is permitted to enter the European markets unscathed by regulation, so the DSB probably would not find that the requirements "arbitrarily or unjustifiably discriminate" against international trade.

Finally, the GMO-labeling requirements would probably fail the "international standards" requirement.[263] Codex's standards recommend mandatory labeling when the genetic modification creates material differences in food products.[264] This suggests that the WTO would not regard the labeling requirements as being based on Codex standards. Resolution of this issue, however, would not be tremendously significant; it would determine whether the GMO-labeling requirements were presumed valid, with the possibility of a U.S. rebuttal or whether the EC would be forced to "counter or refute" the presumption that the requirements were in violation of the SPS Agreement.[265] Since the requirements lack any scientific support, they would be likely to fail regardless of the presumption.

B. *Adjudication of the GMO-Labeling Requirements as Non-Sanitary Measures*

Should the DSB decline to characterize the GMO-labeling requirements as sanitary measures, the United States would have to challenge them as non-sanitary measures under the TBT Agreement or GATT Article XI.[266] In evaluating the GMO-labeling requirements as non-sanitary measures, the DSB's threshold inquiry would be whether it should view the requirements as regulating the products as products, or regulating the processes of their production.[267] If it regards the labeling requirements as targeting the products themselves, the requirements would have to satisfy the TBT Agreement for the DSB to sustain them.[268] Conversely, if the DSB characterizes the EC regulations as aimed at the process of production, GATT Article XI would be the governing provision.[269]

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262. *See id.*
263. *See supra* notes 195-206 and accompanying text.
264. *See* NOTTINGHAM, *supra* note 1, at 145.
265. *See supra* notes 199-203 and accompanying text.
266. *See supra* notes 212-19 and accompanying text.
267. *See supra* notes 207-11 and accompanying text.
268. *See supra* notes 212-16 and accompanying text.
269. *See supra* notes 217-19 and accompanying text.

Either interpretation is plausible. By insuring that the consumers are aware that they are receiving products free of any "unnatural" ingredients, the labeling requirements could be considered to regulate the "end product."[270] On the other hand, the fact that European consumers prefer GMO-free products because they perceive that "natural" products are more environmentally friendly than their genetically-engineered counterparts—which, for example, might endanger the neighboring ecosystem with "super weeds"—suggests that the labeling requirements may be a process classification, not affecting the end product.[271]

1. Adjudication of the GMO-Labeling Requirements as Regulations of Products as Products

If the WTO Panel regards the EC's GMO-labeling requirements as non-sanitary regulations of the end products themselves, the regulations would have to satisfy the TBT Agreement in order to be sustained.[272] The United States could attack the labeling requirements as being technical regulations that serve to protect the domestic farming industries of the EC member states.[273] Since the TBT Agreement includes "labeling requirements" in its definition of technical regulations, the GMO-labeling requirements would be appropriate subject matter.[274]

Although no case law exists to provide guidance for determining how the DSB might rule in a TBT Agreement case, the text of the Agreement suggests that the GMO-labeling requirements would fail to satisfy its demands. When evaluated against Article 2.2, the EC probably would be able to demonstrate that the GMO-labeling requirements have a "legitimate objective," since the TBT Agreement considers the desire for uniform regulations legitimate.[275] It would have difficulty, however,

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270. *Cf.* Franzen, *supra* note 107, at 424 (suggesting that the WTO could regard the Organic Food Production Act of 1990 as dealing with products as products because "a strong argument can be made that the organic certification requirements are intended to insure contaminant-free products by regulating the process inputs.").

271. *Cf. id.* (suggesting that the WTO could regard the Organic Food Production Act of 1990 as dealing with the importation of products because "the fact that some organic processes are preferred precisely *because* they are more environmentally friendly than conventional methods points toward a process classification not affecting the end products.").

272. *See supra* Part IV.C.1.

273. *Cf.* Franzen, *supra* note 107, at 426 (indicating that "[u]nder the TBT Agreement, the [Organic Food Production Act of 1990] could be attacked as a technical regulation protecting the domestic organic food industry.").

274. TBT Agreement, *supra* note 115, Annex 1A.

275. *See id.* art. 2, ¶ 2; *supra* notes 223-25 and accompanying text.

proving that the requirements did not have the "effect of creating unnecessary obstacles to international trade."[276] The labeling requirements certainly stand to present barriers to trade; the EC's likelihood of proving that the need for regulative uniformity is serious enough to be "necessary" is questionable.

Additionally, the GMO-labeling requirements would be likely to fail Article 2.8, which requires states to base technical regulations on product performance requirements.[277] Although the DSB made the point moot by deciding the *Beef Hormone* case on SPS Agreement grounds, the United States advanced the argument that such regulations violated the TBT Agreement because the use of growth hormones did not lead to end-products that were different from those produced without the hormones.[278] Here, it could make the analogous claim that the GMO-labeling requirements are not justified because products produced with genetically-modified ingredients are no different than those with "natural" ingredients. Since scientific data suggests that the products are equivalent, the DSB would probably find that the labeling requirements failed to reflect product performance.[279]

2. Adjudication of the GMO-Labeling Requirements as Regulations of the Process of Production

If the WTO Panel characterizes the EC's GMO-labeling requirements as non-sanitary regulations of the process of production, the United States would have the burden of establishing that the requirements are a prohibition or restriction on the importation of products, and as such, a prima facie violation of GATT Article XI.[280] This may be quite easy. The GMO-labeling requirements would cause the U.S. producers to be excluded from the European market because they would not be able to sell their goods competitively. If the U.S. producers elect to label their goods, they would be more costly to produce than their European counterparts.[281] Additionally, the European consumers might regard labeled goods as hazardous to their health and refuse to buy them.[282] Moreover, if the U.S.

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276. TBT Agreement, *supra* note 115, art. 2, ¶ 2.

277. *See id.* art. 2, ¶ 8.

278. *See* Franzen, *supra* note 107, at 420, 426-27.

279. *See supra* notes 29-35 and accompanying text.

280. *See* GATT, *supra* note 105, art. XI; *see also* Franzen, *supra* note 107, at 424 (describing how a challenger to the Organic Food Production Act of 1990 would develop a prima facie case of an Article XI violation).

281. *See supra* notes 63-64 and accompanying text.

282. *See* NOTTINGHAM, *supra* note 1, at 146 ("Labelling all the foods that use genetic engineering somewhere in their production would send the consumer

producers choose not to label their goods, the European customers also would likely be dissuaded from purchasing them.[283]

The EC would, in turn, attempt to refute the prima facie violation by invoking Article XI's internal exemption for agricultural products.[284] It would probably be able to satisfy most of the seven criteria necessary for sustaining a restriction on the importation of agricultural products.[285] The final element—that the import restrictions not reduce the proportional market share of each importing country—would be difficult to satisfy, however.[286] Since U.S. producers rely on genetically-modified agriculture to a greater extent than their counterparts in other countries, the GMO-labeling requirements would be likely to reduce their market share significantly; fewer GMO-reliant countries would suffer a smaller reduction. Because of this, the EC would be unable to prove permissible restrictions on the importation of agricultural products.[287]

VI. CONCLUSION

The current state of scientific knowledge about GMOs, relevant WTO case law, and texts of the GATT, SPS Agreement, and TBT Agreement suggest that the EC's GMO-labeling requirements would not survive a U.S. challenge, regardless of how the DSB would choose to characterize the regulations. While it seems apparent that the EC did not pass the regulations for the purpose of protecting the agricultural sector of its economy,[288]

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signals that the foods were in some way unsafe, according to the food industry, when this is not the case. Labels could, therefore, unjustly stigmatize genetically modified foods.").

283. *See supra* note 59 and accompanying text.

284. *See supra* note 232-36 and accompanying text.

285. *See supra* note 235 and accompanying text.

286. *See id.*

287. The EC could also make an Article XX defense to the Article XI claim, but it would not be effective. *See* Franzen, *supra* note 107, at 425-26. It would likely assert that the GMO-labeling requirements are necessary to protect human or plant health, and, as such, are exempted from GATT obligations by Article XX (b). *See id.* (detailing the application of this defense to a challenge to the Organic Food Production Act of 1990). That defense, however, would lead to the conclusion that the labeling requirements be viewed as sanitary measures; this, in turn, would make the SPS Agreement the controlling provision. *See id.* Even as a non-sanitary measure, the GMO-labeling requirements would probably fail under Article XX(b) because they are not necessary to protect human or plant health. *See id.*

288. *See* de Jonquie'res, *supra* note 16, at 15 ("The [U.S.] initially blamed European resistance on straightforward protectionism. But recent levels of anxiety in Europe about food safety, particularly since the outbreak of 'mad cow'

the WTO's focus on the projectionist effect of a challenged regulation makes them just as invalid as if they had been passed as part of a conspiracy to protect home-grown agriculture. Moreover, even though the labeling requirements would be significantly less trade-restrictive than other possible regulatory techniques—such as a ban on GMOs—they would still run afoul of the WTO's mandate. The combination of the vulnerability of the GMO-labeling requirements and their likely adverse impact on U.S. agricultural interests suggests that it would be wise for the United States to challenge the requirements before the WTO.

The likelihood of success for the challenge would be subject to change, however, if the EC could produce a scientific study showing that the regulated products caused specific harm. Then, its chances of sustaining the GMO-labeling requirements under the SPS Agreement would increase significantly. Additionally, since the DSB is not bound by stare decisis, it is always capable of altering its interpretations of the GATT, SPS Agreement, and TBT Agreement.

Although the significance of the U.S. interest involved would probably justify challenging the GMO-labeling requirements, the United States should also consider the possible consequences of a favorable ruling by the DSB. If the WTO forces the EC to repeal regulations which reflect a strong popular sentiment, the WTO would risk facing similarly strong disfavor from the European people, who would probably view it as valuing trade over their health and environment. The trend for self-labeling of products by companies that deal in GMOs would probably expand,[289] since those companies would view self-labeling as a good way to win over the skeptical European

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disease, has forced [U.S.] officials to [recognize] that the explanation is more complex.").

289. *See* Andrew Porter, *Shops Play It Safe as Consumers Call Shots: Retailers Say Foods Containing Genetically Modified Ingredients Are Clearly Labelled*, W. MORNING NEWS (Plymouth), Feb. 16, 1999, at 4 (describing efforts by U.K. supermarkets to label products that include GMOs).

consumers. Additionally, a WTO ruling against the GMO-labeling requirements may provoke the EC to overhaul its much-criticized approach to evaluating GMOs.[290]

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290. *See* de Jonquie'res, *supra* note 16, at 15 (indicating that the EU's system for regulating food safety, in which "requests for product approvals are trundled through a labyrinth of committees," leads to "long delays [and undermines] public accountability" and "encourages decisions based on political opportunism and scaremongering, not scientific evidence.").

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