

Dominique Sinopoli & Kai Purnhagen,
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WHEN LIFE GIVES YOU LEMONS:
THE “BATTLE OF SCIENCE” ON THE CORRECT INTERPRETATION
OF DATA ON CITRUS BLACK SPOT DISEASE BETWEEN THE
EUROPEAN UNION AND SOUTH AFRICA ACCORDING TO THE SPS
AGREEMENT

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According to Articles 2.2, 5.1 and 5.2 of the Agreement on the Application of Sanitary and Phytosanitary Measures (“SPS Agreement”), Members need to base sanitary and phytosanitary measures (“SPS measures”) on scientific principles and risk assessment. These provisions have sparked analysis on issues such as how this ‘risk’ needs to be addressed, which ‘science’ Members need to take into account, and what the relationship is between values and science. It is commonly observed that the SPS Agreement leans towards a technical approach to the determination of risk. If socio-economic concerns were to be taken into account in the SPS Agreement, a leeway for Members to introduce protectionist policies would open up. We illustrate with the example of the ongoing citrus dispute between the European Union (EU) and South Africa that the technical approach can likewise be used to shield protectionist policies with an extraterritorial effect. The reason for this is the uncertainty with regards to how science needs to be interpreted in relation to the probability that a disease will be introduced. We conclude that the choice for technical risk

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does not remedy the ‘protectionist policy with extraterritorial effect’ problem. Rather than debating the options of ‘socio-economic’ risk and ‘technical’ risk only, the WTO Dispute Settlement Body should use disputes such as the one on citrus to develop a more normative approach to ‘risk’ in the SPS Agreement, indicating which kind of ‘probability’ is normatively required to justify SPS measures.

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I. INTRODUCTION

The requirement to base sanitary and phytosanitary measures (“SPS measures”) on science under Article 2.2 of the Agreement on the Application of Sanitary and Phytosanitary Measures (“SPS Agreement”) has sparked lively scholarly debate in recent decades¹ and has been the subject of a number of WTO disputes². The

¹ For a summary, see CHRIS DOWNES, THE IMPACT OF WTO SPS LAW ON EU FOOD REGULATIONS 91 (2014) [hereinafter DOWNES].

extensive analysis in case law and scholarly work, however, has not created certainty with regards to what evidence Members have to present to uphold an SPS measure. On the contrary, these works have left a trail of uncertainty in many respects. For instance, the question of what kinds of data need to be implemented; whether data from only risk assessment³ or from risk management as well⁴ has been left open. Can values and cultures, as recognized when determining the appropriate level of protection (“ALOP”), be implemented also in SPS measures?⁵ What can be established as common ground, however, is that in the area of policy-making, at least in practice, a technical view of risk within the SPS context still prevails.⁶ The major reason for this is, from a WTO trade law perspective, summarized by Quick and Blüthner: “[I]t will be extremely difficult to replace the ‘scientific’ route chosen by the SPS Agreement with a new approach taking socio-economic considerations into account without opening Pandora’s box and allowing WTO Members to introduce protectionist measures.”⁷

Starting from this basis, we will show that no matter whether one supports the ‘scientific’ route or not, in practice, this route cannot prevent countries from using protectionist measures. In fact, the uncertainty with regards to how science needs to be interpreted to establish a sound ‘probability’ in terms of the SPS Agreement can be used as a shield for bringing forward protectionist policies that impose internal standards of a bigger trading bloc on a smaller partner. In this piece, we will go beyond the classical understanding that looks only at whether measures protect internal trade to classify them as protectionist. Instead, we will look at the often overlooked facet that these measures can also be protectionist with regards to domestic standards as WTO members introduce their domestic standards as a default to factually dominate other markets.

²See Disputes by Agreement, WORLD TRADE ORGANIZATION, https://www.wto.org/english/tratop_e/dispu_e/dispu_agreements_index_e.htm?id=A19 (last visited Jan. 22, 2017).

³In this vein Jeffrey Atik, *Science and International Regulatory Convergence*, 17(1) NW. J. INT’L L. & BUS. 736, 740 (1996); Warren H. Maruyama, *A New Pillar of the WTO: Sound Science*, 32(3) INT’L LAW. 651, 665 (1998).

⁴ See P. Marijn Poortvliet, Martijn Duineveld & Kai Purnhagen, *Risk Communication: Performativity in Action: How Risk Communication Interacts in Risk Regulation*, 7(1) EUR. J. OF RISK REG. 213, 213 *et seq.* (2016) (illustrating that in practice risk management and risk assessment cannot easily be distinguished as risk assessment is largely dependent on the discourses in risk management).

⁵ On this point, see DOWNES, *supra* note 1, at 102-03.

⁶ Jacqueline Peel, *Risk Regulation Under the WTO SPS Agreement: Science as an International Normative Yardstick?* 54 (Jean Monnet Working Paper No. 02/04, 2004).

⁷ Reinhard Quick & Andreas Blüthner, *Has the Appellate Body Erred? An Appraisal and Criticism of the WTO Hormones Case*, 2(4) J. OF INT’L ECON. L. 603, 639 (1999).

Part I of the article will illustrate how the interpretations of the ‘science’ paradigm in Art. 2.2 of the SPS Agreement and the ‘risk’ paradigm in Art. 5.1 and 5.2 of the SPS Agreement, in case law and scholarly work, have translated into uncertainty for Members regarding which science to take into account and how to interpret science correctly in a way to establish ‘probability’. In Part II, using an example from EU law, we will argue that such uncertainty invites Members to behave opportunistically by using such legal gaps to follow their interest, that is, to justify protectionist policies by imposing their internal standards on other Members via trade laws. Subsequently, in Part III, we will illustrate this with the example of the ongoing battle between South Africa and the EU on trade barriers for citrus. In Part IV, we will also show what a sensible solution to this problem, an alternative measure in compliance with Article 5.6 of the SPS Agreement, may look like. Part V of the article will conclude with a suggestion to the WTO Dispute Settlement Body to use this dispute, if it ever gets to the final stage, to provide clearer guidelines on how to interpret Art. 5.1 and Art. 5.2 of the SPS Agreement in order to avoid such opportunistic behavior in the future.

II. WHAT ‘SCIENCE’ ACCORDING TO ART. 2.2 OF THE SPS AGREEMENT AND WHICH ‘RISK’ ACCORDING TO ART. 5.1 AND 5.2 OF THE SPS AGREEMENT? ILLUSTRATING THE TRAIL OF UNCERTAINTY

WTO law is designed to enable free trade among its Member States. However, according to Art. 1.1 of the SPS Agreement, Members are allowed to establish SPS measures that affect trade to meet the criteria of the respective Member’s ALOP. SPS measures, in particular for agricultural exports, have become more important stumbling blocks in international trade than tariffs and quantitative restrictions.⁸ As the European Commission acknowledges, “[i]n today’s transatlantic trade relationship, the most significant trade barrier is not the tariff paid at the customs, but so called ‘behind-the-border’ obstacles to trade, such as different safety or environmental standards for cars.”⁹

It might be for this reason that WTO law lays down relatively strict requirements for SPS measures. In practice, the rationalization approach taken by WTO SPS law has been a major reason for disputes among the Member States. SPS law requires SPS measures to be “based on scientific principles” and “not maintained without sufficient scientific evidence” (Art. 2.2 of the SPS Agreement). Furthermore, they

⁸ Spencer Henson & Rupert Loader, *Barriers to Agricultural Exports from Developing Countries: The Role of Sanitary and Phytosanitary Requirements*, 29(1) WORLD DEV. 85 (2001).

⁹ European Commission, *European Union and United States to launch negotiations for a Transatlantic Trade and Investment Partnership* (Feb. 13, 2013), <http://trade.ec.europa.eu/doclib/press/index.cfm?id=869>.

need to be “based on an assessment (...) of the risk (...)” (Art. 5.1 of the SPS Agreement), where Members need to “take into account available scientific evidence” (Art. 5.2 of the SPS Agreement). Paragraph 4 of Annex A of the SPS Agreement defines further requirements of risk assessment without embarking on the method that is to be used.¹⁰ In several cases, the Appellate Body (“AB”) has provided a bit more flesh on the bones by providing some normative requirements for risk assessment according to WTO SPS law. Risk assessment needs to be “characterised by systematic, disciplined and objective inquiry”¹¹, which must build on “legitimate science according to the rationale of the relevant scientific community”.¹² With regards to whether an SPS measure can be upheld to prevent the spreading of a disease, the AB determined that risk assessment has to establish the likelihood or the probability (not merely the possibility) that the pest or disease will spread without the measure¹³, followed by a thorough evaluation of this probability or likelihood.¹⁴ It remained silent, however, with regards to whether the probability must be a certain value to justify an SPS measure, and if so, what that may be. Beyond that WTO law has mainly told us what does not constitute a benchmark. The science on which the measure is based upon does not need to represent the mainstream opinion in the scientific community;¹⁵ it does not need to reflect methods of international standards,¹⁶ nor does it need to exclusively follow the list provided in Art. 5.2 of the SPS Agreement.¹⁷ Some commentators hence conclude that the WTO regime does not subscribe “to a purely technical approach to SPS risk”;¹⁸ others interpret these requirements as a ‘sound science’ approach¹⁹ and therefore hail the benefits of such a technocratic, science-driven approach.²⁰ Either way, the extreme variation in the interpretation of these SPS provisions in

¹⁰ The latter point was highlighted by DOWNES, *supra* note 1, at 99.

¹¹ Appellate Body Report, *European Communities–Measures Concerning Meat and Meat Products (Hormones)*, ¶ 187, WT/DS26/AB/R (Jan. 16, 1998).

¹² Appellate Body Report, *United States–Continued Suspension of Obligations in the EC-Hormones Dispute*, ¶591, WT/DS320/AB/R (Oct. 16, 2008).

¹³ Appellate Body Report, *Australia–Measures Affecting Importation of Salmon*, ¶ 123, WT/DS18/AB/R (Oct. 20, 1998).

¹⁴ Appellate Body Report, *Australia–Measures Affecting Importation of Salmon*, ¶ 124, WT/DS18/AB/R (Oct. 20, 1998).

¹⁵ Appellate Body Report, *European Communities–Measures Concerning Meat and Meat Products (Hormones)*, ¶¶ 187, 194, WT/DS26/AB/R (Jan. 16, 1998).

¹⁶ Appellate Body Report, *United States–Continued Suspension of Obligations in the EC-Hormones Dispute*, ¶ 685, WT/DS320/AB/R (Oct. 16, 2008).

¹⁷ Appellate Body Report, *European Communities–Measures Concerning Meat and Meat Products (Hormones)*, ¶ 187, WT/DS26/AB/R (Jan. 16, 1998).

¹⁸ DOWNES, *supra* note 1, at 99.

¹⁹ See Gavin Goh, *Tipping the Apple Cart: The Limits of Science and Law in the SPS Agreement after Japan-Apples*, 40(4) J. WORLD TRADE 655, 677 (2006).

²⁰ Reinhard Quick & Andreas Blüthner, *Has the Appellate Body Erred? An Appraisal and Criticism of the WTO Hormones Case*, 2(4) J. OF INT’L ECON. L. 603, 639 (1999).

scholarly literature illustrates the uncertainty left by SPS law with regards to its normative requirements for justifying SPS measures. From these provisions alone it is very hard, if not impossible, for Members to derive some legal certainty regarding which science is appropriate and how to interpret science to meet the exigencies of WTO law.

Such uncertainty at a global level has its advantages: it allows Members to innovate and justify SPS measures that might work better than measures that comply with potentially strict normative requirements set at WTO level. However, such leeway in the law also invites Members to behave opportunistically, using the uncertainty to their advantage and designing protectionist measures shielded as a ‘scientific necessity’. In the history of trade law, using science as a shield for protectionist policies and as a sword for imposing one’s own standards on others via trade has resulted in a scenario where the existence of scientific data could not be questioned, but the interpretation of these data as required by the law was rather uncertain (‘battle of science’).

The textbook example of such a ‘battle of science’ in trade law is the proceedings between France and the European Commission in the aftermath of the bovine spongiform encephalopathy (“BSE”) crisis.²¹ After risk assessment showed uncertainty about a possible link between Creutzfeldt-Jakob disease, which affects human beings, and BSE, the Commission adopted a ban prohibiting the UK from exporting beef to other Member States and third countries.²² The ban was soon thereafter lifted due to a new interpretation of scientific evidence under the condition that the origin of the beef was traceable according to the ‘date-based export scheme’ (“DBES”). France, however, still refused to import British beef due to the health concerns expressed, especially by the French Food Standards Agency (“AFSSA”), which had interpreted the same data differently. The Commission compromised by allowing France to distinctively mark British beef. However, French authorities would still have to accept the marketing of British beef in France. France, however, continued to prohibit the marketing of British beef. The British Farmers’ Union (“NFU”) hence filed an action in French courts to enforce their freedom of movement rights, which was then referred to the European Court of Justice (“ECJ”). The Court decided that as the DBES was a maximum-harmonisation-measure France could not rely on (today’s) Art. 36 of the

²¹ The following passage is a shortened and revised version of a passage in Kai Purnhagen, *The EU’s Precautionary Principle in Food Law is an Information Tool*, 26(6) EURO. BUS. L. REV. 903, 917-18 (2015); For further reference, see Karolina Szawlowska, *Risk Assessment in the European Food Safety Regulation: Who is to Decide Whose Science is Better?* *Commission v. France and Beyond...*, 5(10) GERMAN L. J. 1259 (2004).

²² Commission Decision 96/239, *Emergency Measures to Protect Against Bovine Spongiform Encephalopathy*, 1996 O.J.(L 78)47 (EC).

Treaty on the Functioning of the European Union (“TFEU”) to prevent British beef imports.²³ It thereby circumvented the rather delicate question with regards to the normative requirements which EU law imposes on the interpretation of scientific evidence and simply decided who decides. In the absence of such a clear hierarchy in WTO law, this institutional solution would not work. Hence, in WTO law, a different solution should be found to prevent Members from using the uncertainty with regards to the interpretation of science as both a shield and a sword for their own interest.

III. THE CITRUS DISPUTE AS A CASE STUDY – HOW UNCERTAINTY WITH REGARDS TO THE INTERPRETATION OF SCIENCE SUPPORTS PROTECTIONISM THROUGH SPS MEASURES

In the absence of such a normative solution, Members can make use of the uncertainty with regards to the ‘science’ paradigm at the WTO level and interpret it in a protectionist and extraterritorial manner. We will discuss below how economically strong Members in general have the possibility to use SPS measures in a protectionist way with regards to their domestic standards, where these domestic standards then influence standard-setting in less strong countries (3.1). Subsequently, we will illustrate with the example of the citrus dispute between South Africa and the EU how the ‘science’ paradigm in the SPS Agreement can be used to this end (3.2). This case was selected specifically since it is an ongoing dispute. Since this paper claims to use a case such as the citrus dispute to introduce a more normative approach to “risk”, it is important to select a case for illustration where there is still potential for the incorporation of such an approach.

A. Possibility of Members to use SPS measures to protect local markets and extraterritorialize standards and their effects

Each member, according to their respective socio-economic setting, has different requirements for the ALOP that determine the goals to be achieved through the applicable SPS measure:

“First, there are significant differences in tastes, diets, income levels and perceptions... Differences in climate and in the available technology (from refrigeration through to irradiation) affect the incidence of different food safety and agricultural health hazards. Standards reflect the feasibility of implementation, which itself is influenced by legal and industry structures as well as available technical, scientific, administrative and financial resources. Some food safety risks, for example, tend to be greater in developing countries

²³ See Case C-241/01, *Nat’l Farmers’ Union v. Secrétariat générale du gouvernement*, 2002, E.C.R. I-9070.

due to weaknesses in physical infrastructure (for example standards of sanitation and access to potable water) and the higher incidence of certain infectious diseases. Further, tropical or sub-tropical climatic conditions may be more conducive to the spread of certain pests and diseases that pose risks to human, animal and/or plant health.”²⁴

Lenient standards allow for more exports from developing countries and are usually perceived to be better for farmers and the economy as a whole. However, stricter requirements are important for consumer safety and plant health, for example.²⁵ While different SPS measures reflect the different needs of the respective populations as stipulated in the ALOP and might hence be implemented for legitimate reasons,²⁶ they can also be used as tools to impede international trade and protect domestic producers and consumers, typically through unsubstantiated requirements and unnecessary and/or costly inspections and tests.²⁷ While certainly not all SPS standards are protectionary regulations in disguise, it can be difficult to distinguish them from SPS measures that are justified by a legitimate goal.²⁸ Nevertheless, many national regulations disadvantage imports, whether intentionally or unintentionally.

²⁴ Steven Jaffee & Spencer Henson, *Standards and Agro-Food Exports from Developing Countries: Rebalancing the Debate*, World Bank Policy Research Working Paper 3348 (2004), at 1-2.

²⁵ However, there will likely always be a debate over the ALOP due to different “conflicting interests, perceptions of risk, and estimations of what constitutes international scientific best practices regarding food safety (...) The criteria to determine whether standards are ‘too high’ or ‘too low’ are likely arguable”. John S. Wilson & Tsunehiro Otsuki, *Balancing Risk Reduction and Benefits from Trade in Setting Standards*, in FOOD SAFETY AND FOOD SECURITY (Int’l Food Policy Research Inst., 2020 Focus 10, Lauren J. Unnevehr ed., 2003).

²⁶ See illustratively Robert Howse, *Democracy, Science, and Free Trade: Risk Regulation on Trial at the World Trade Organization*, 98 MICHIGAN L. REV. (2000) at 2329, 2342 (stipulating that the ALOP determines “citizen’s preference about risk” in opposition to the scientific determination of risk itself needed to justify SPS measures).

²⁷ Simonetta Zarrilli, *WTO Agreement on Sanitary and Phytosanitary Measures: Issues for Developing Countries*, in A POSITIVE AGENDA FOR DEVELOPING COUNTRIES: ISSUES FOR FUTURE TRADE NEGOTIATIONS 309, 311 (1999); Gerhard Erasmus, *This Dispute is about More than Black Spots on Oranges*, TRALAC (Oct. 29, 2014), <https://www.tralac.org/discussions/article/6519-this-dispute-is-about-more-than-black-spots-on-oranges.html>. Due to scarce resources developing countries often face difficulties in determining the ALOP in light of their socio-economic needs, see Dasep Wahidin & Kai Purnhagen, *Determining an FSO/ALOP for the Application in Developing Countries*, 8 EUR. J. OF RISK REG. (forthcoming 2017).

²⁸ Zarrilli, *supra* note 27.

For most food chains the EU is considered to have the most stringent SPS standards.²⁹ The proliferation of stringent SPS standards has been a major burden on many developing countries in particular since they may face constraints in implementing more stringent standards and complying with non-domestic and international requirements. Additionally, compliance with SPS measures is a prerequisite and challenge for them to access developed country markets. Products that do not comply with local regulations cannot be sold in these markets. In this way, and under certain circumstances, bigger trading blocs can use trade to impose their domestic standards on other countries, the so-called extraterritorial effect.³⁰

Many African countries in particular face critical challenges in exporting products to developed country markets, hence being particularly vulnerable to the extraterritorial effect. For several reasons, it is often difficult to comply with more stringent standards in these markets. Demand for product quality is typically lower among consumers in these countries than consumers in developed countries. This is largely due to limited awareness of food safety and quality, lack of strong consumer organizations, and due to a lack of financial capacity, being forced to tolerate lower-quality products, training and technology.³¹ Producers also do not view product quality as essential when producing for the domestic market.³² In addition, because domestic consumer expectations of product quality are much lower, national regulations are typically more lenient than international regulations. It can therefore be challenging and costly for producers to adopt better practices if they need to meet more stringent foreign or international standards for exportation. Challenges involved in improving production and quality standards to meet the requirements in import markets include improving quality assurance and management systems, monitoring, evaluation, product testing and packaging methods. This can be difficult, particularly when there are weaknesses in surveillance and risks analysis systems, and inadequate testing facilities. It also requires large investments in human capital and infrastructure to improve facilities. Additionally, it is difficult to keep track of the ever-changing SPS standards and technical requirements of trading partners in other countries.³³ While an extraterritorial effect of stricter standards from other countries might hence be

²⁹ Spencer Henson & Rupert Loader, *Barriers to Agricultural Exports from Developing Countries: The Role of Sanitary and Phytosanitary Requirements*, 29(1) WORLD DEV. 85 (2001); Yemane Gebrehiwet et al., *Quantifying the Trade Effect of Sanitary and Phytosanitary Regulations of OECD Countries on South African Food Exports*, 46(1) AGREKON 23 (2007).

³⁰ Anu Bradford, *The Brussels Effect*, 107(1) NW. U. L. Rev.1 (2012).

³¹ JOHN S. WILSON & VICTOR O. ABIOLA, STANDARDS AND GLOBAL TRADE: A VOICE FOR AFRICA, at xx (2003).

³² *Id.*

³³ *Id.*

beneficial for the protection of health and safety in developing countries,³⁴ it would also have a negative impact, including a loss of export revenue, employment and income. In addition, if a consignment is rejected at the importing country's border, additional costs that would be incurred include loss of product value and transport costs.³⁵ It remains to be seen, however, whether the benefits of stricter standards will outweigh their costs.

Quantitative studies so far point in the direction that the extraterritorial effect of higher standards does not outweigh the costs for African countries. For example, Otsuki, Wilson and Sewadah compared the EU and Codex standards on aflatoxin levels in cereals, edible nuts, and dried and preserved fruits.³⁶ They found that the EU standard, in comparison with the Codex Alimentarius standard, would reduce the risk to public health by approximately 1.4 deaths per billion a year—and also result in a 64% decrease in African exports, amounting to a total of USD 670 million.³⁷ These findings suggest that it is difficult to justify trade losses based on gains in public health, although these cases cannot be generalized.³⁸

In another study by Gebrehiwet et al., the trade effect of total aflatoxin levels set by five OECD countries (Ireland, Italy, Sweden, Germany and the United States) on South African food exports was measured.³⁹ They found that if these five countries had adopted the total aflatoxin level recommended by Codex Alimentarius, South Africa would have gained an estimated additional USD 69 million per year from food exports. These are only a couple of examples of the many studies that show the trade effect of stringent SPS standards on developing countries.⁴⁰

In line with the economic trade rationale that underlies the WTO, such numbers should not go unnoticed. In fact, facilitating trade, whenever possible, is therefore a great instrument for improving the economic situation in developing countries such as South Africa.⁴¹ This is particularly truer as Art. 10 of the SPS Agreement

³⁴ Tsunehiro Otsuki et al., *Saving Two in a Billion: A Case Study to Quantify the Trade Effect of European Food Safety Standards on African Exports* (Development Research Group, World Bank Working Paper, 2001); Wilson & Otsuki, *supra* note 25.; Wahidin & Purnhagen, *supra* note 30.

³⁵ Gebrehiwet et al., *supra* note 28, at 26-27; Wilson & Otsuki, *supra* note 25.

³⁶ Otsuki et al., *supra* note 34.

³⁷ Otsuki et al., *supra* note 34; Wilson & Otsuki, *supra* note 25.

³⁸ Wilson & Otsuki, *supra* note 25.

³⁹ Gebrehiwet et al., *supra* note 29, at 26-27.

⁴⁰ Gebrehiwet et al., *supra* note 29.

⁴¹ See, e.g., *Trade-Not-Aid*, GLOBALIZATION 101, <http://www.globalization101.org/trade-not-aid/> (last visited Oct. 14, 2015).

states that Members shall take the special needs of developing countries into account.

B. *How the ‘science’ policy supports extraterritorialisation and protectionism of standards – A case study on the citrus dispute between South Africa and the EU*

The extraterritorial effect described is supported by the ‘science’ policy of WTO SPS law. The uncertainty concerning the interpretation of science in a WTO context, we argue, facilitates such an extraterritorial and protectionist agenda. We will illustrate this with the example of the citrus dispute between South Africa and the EU.

1. The Citrus Dispute – Background

Over the past couple of decades, South Africa and the European Union have had an ongoing debate regarding the level of risk posed by the importation of citrus fruit containing the fungus *Guignardia citricarpa* (or *Phyllosticta citricarpa*), the agent responsible for citrus black spot (“CBS”) disease, into the EU. CBS causes spotty lesions on the rind, thus reducing the appeal of the fruit, but does not cause internal decay and is also not dangerous for human consumption. However, severe infections can cause premature fruit drop and such highly blemished fruits are unmarketable. Additionally, infected orchards require additional fungicide treatments, and once the fungus is established it is very difficult to eradicate.⁴² Although almost all citrus species are susceptible to the disease, sour orange and Tahiti limes are not affected. Lemons are particularly susceptible; therefore, when the disease becomes established in a new area it usually appears first on lemons.⁴³

⁴² EFSA Panel on Plant Health (PLH), *Scientific Opinion on the Risk of Phyllosticta citricarpa (Guignardia citricarpa) for the EU Territory with Identification and Evaluation of Risk Reduction Options*, 12(2) EFSA J. (2014).

⁴³ J.M. Kotzé, *Epidemiology and Control of Citrus Black Spot in South Africa*, 65(12) PLANT DISEASE 945 (1981); HATTINGH ET AL., CITRUS BLACK SPOT: PEST RISK ASSESSMENT DOCUMENT FOR THE REVIEW OF CURRENT PHYTOSANITARY REGULATIONS PERTAINING TO THE EXPORT OF FRESH CITRUS FRUIT FROM THE REPUBLIC OF SOUTH AFRICA TO THE EU 2 (2000); Dep’t Agric. Forestry & Fisheries & Nat’l Agric. Mktg. Council, 55 INTERNATIONAL TRADEPROBE 7 (2015); EFSA Panel on Plant Health (PLH), *Pest Risk Assessment and Additional Evidence Provided by South Africa on Guignardia citricarpa Kiely, Citrus Black Spot Fungus – CBS[1]- Scientific Opinion of the Panel on Plant Health*, 7(1) EFSA J. (2008); Erasmus, *supra* note 26; PLANT EPIDEMIOLOGY & RISK ANALYSIS LAB. CTR. PLANT HEALTH SCI. & TECH. ET AL., REV. 2, RISK ASSESSMENT OF CITRUS SPP. FRUIT AS A PATHWAY FOR THE INTRODUCTION OF GUIGNARDIA CITRICARPA KIELY, THE ORGANISM THAT CAUSES CITRUS BLACK SPOT DISEASE (2010).

CBS has a wide global distribution but is only known to occur in countries with a subtropical, summer rainfall climate. In addition to South Africa, it has been found in New South Wales, Australia, Argentina, Bhutan, Brazil, China, Indonesia, India, Kenya, Mozambique, Nigeria, Philippines, Swaziland, Taiwan, Uruguay, Venezuela, West Indies,⁴⁴ Zimbabwe and Zambia.⁴⁵

CBS has never become established in any region with a Mediterranean, i.e., winter rainfall climate, including the citrus-producing areas of the Western Cape province of South Africa, southern and western Australia, Chile, Spain, Greece, Israel, Italy, Turkey and California.⁴⁶ Due to these climatic differences, CBS is actually not present throughout South Africa. While it is found in many provinces, particularly in the northeast region of the country, the following provinces are known to be CBS-free: Northern Cape, Free State, Western Cape (30 magisterial districts) and Northwest (2 magisterial districts).⁴⁷

South Africa is a major global producer and exporter of citrus fruits, including oranges, grapefruit, lemons, limes, kumquats, pummelos, soft citrus and Seville oranges.⁴⁸ These products are referred to collectively as 'citrus fruit' in this paper. In 2014, the country-wide industry exported citrus products to 119 countries. South Africa is the third largest exporter of citrus in the world, second only to Spain and China.⁴⁹

Citrus fruit is produced all across South Africa; production in the cooler climates of the Western and Eastern Cape provinces is focused on navel oranges, soft citrus, lemons and limes, and the other warmer provinces grow primarily grapefruit and Valencia oranges.⁵⁰ The industry produces 2 million tons and exports 1.7

⁴⁴ E.C. Calavan, *Black Spot of Citrus*, 46 CAL. CITROGRAPH 22, 22–24 (1960).

⁴⁵ Ida Paul et al., *The Potential Global Geographical Distribution of Citrus Black Spot Caused by Guignardia citricarpa (Kieby): Likelihood of Disease Establishment in the European Union*, 24 CROP PROTECTION 297, 297-98 (2005).

⁴⁶ HATTINGH ET AL., CITRUS BLACK SPOT: PEST RISK ASSESSMENT DOCUMENT FOR THE REVIEW OF CURRENT PHYTOSANITARY REGULATIONS PERTAINING TO THE EXPORT OF FRESH CITRUS FRUIT FROM THE REPUBLIC OF SOUTH AFRICA TO THE EU 5-6 (2000).

⁴⁷ *Regulated Areas, Pest Free Areas with Regard to Citrus Black Spot in South Africa*, AGRIC., FORESTRY & FISHERIES, <http://www.daff.gov.za/daffweb3/Branches/Agricultural-Production-Health-Food-Safety/Plant-Health/National-Control-Measures/Regulated-areas> (last visited Jan. 27, 2017).

⁴⁸ Agricultural Product Standards Act 19 of 1990 R. 748 (S. Afr.); SOUTH AFRICA: A POTENTIAL MARKET FOR AGRI-FOOD PRODUCTS FROM AFRICA (Int'l Trade Ctr., 2010).

⁴⁹ ITC, *Trade Map*, <http://www.trademap.org/Index.aspx> (last visited Sept. 2, 2015).

⁵⁰ CITRUS GROWERS' ASS'N, Annual Report, S. AFR., 33 (2014).

million tons of citrus fruit (70% of the total volume) annually,⁵¹ making it a key component of South Africa's agriculture sector. More than half of the country's fresh fruit exports are citrus.⁵² Of all the southern hemisphere fresh citrus exports, 85% of grapefruit, 76% of oranges, 33% of soft citrus and 26% of lemons come from South Africa.⁵³ It is one of the largest horticultural sectors in the country, second only to wine.⁵⁴ The export sector is dominated by large commercial producers⁵⁵ and brings in over ZAR⁵⁶ 5 billion (USD 370 million⁵⁷) every year.⁵⁸ The industry is also a major source of employment: 60,000 people are employed year round, and during the peak season, from April to September,⁵⁹ this figure rises to approximately 100,000.

The Trade, Development and Cooperation Agreement ("TDCA") of 2004 established a preferential trade agreement between the EU and South Africa to introduce a Free Trade Area ("FTA"). According to GATT Art. XXIV (1), this FTA is in itself subject to the rules of the SPS Agreement. The FTA has been successful insofar as the EU has become South Africa's main trading partner. Trade with the EU hence has a social function, which plays a major role in South Africa's integration into the global economy.⁶⁰ The TDCA has been beneficial to the South African citrus industry: exports increased from ZAR 1.1 billion (USD 82 million) in 2002 to ZAR 9.3 billion (USD 700 million⁶¹) in 2013.⁶² Many South

⁵¹ Dep't Agric. Forestry & Fisheries & Nat'l Agric. Mktg. Council, 55 INTERNATIONAL TRADEPROBE, 7 (2015)

⁵² S. AFR. CITRUS BLACK SPOT EXPERT WORKING GRP., POSITION DOCUMENT – COMMENTS ON THE EUROPEAN FOOD SAFETY AUTHORITY'S OPINION ON CBS, NEW INFORMATION AND IMPLICATIONS FOR THE PEST RISK ASSESSMENT 26 (2009).

⁵³ *Id.*

⁵⁴ Dep't Agric. Forestry & Fisheries & Nat'l Agric. Mktg. Council, 55 INTERNATIONAL TRADEPROBE, 7 (2015).

⁵⁵ Hester Vermeulen et al., *Private Standards, Handling and Hygiene in Fruit Export Supply Chains: A Preliminary Evaluation of the Economic Impact of Parallel Standards*, International Association of Agricultural Economists Conference, Gold Coast, Australia, 2 (Aug. 12-18, 2006).

⁵⁶ ZAR stands for South African rand.

⁵⁷ As of October 31, 2016 (exchange rate: 1 USD = 13.8 ZAR).

⁵⁸ S. AFR. CITRUS BLACK SPOT EXPERT WORKING GRP., POSITION DOCUMENT – COMMENTS ON THE EUROPEAN FOOD SAFETY AUTHORITY'S OPINION ON CBS, NEW INFORMATION AND IMPLICATIONS FOR THE PEST RISK ASSESSMENT 26 (2009).

⁵⁹ Nicolas Rubio, *Uncertainty of Policy Changes in the European Union Cloud Forecast for South African Citrus Exports* (USDA Foreign Agric. Service, GAIN report, 2013).

⁶⁰ Council Decision 2004/441, Concerning the Conclusion of the Trade, Development and Cooperation Agreement between the European Community and its Member States, on the One Part, and the Republic of South Africa, on the Other Part, 2004 O.J. (L 127) (EC).

⁶¹ As of October 31, 2016 (exchange rate: 1 USD = 13.8 ZAR)

African citrus producers, however, face problems with CBS. Import restrictions on citrus fruits infected with CBS have had a significant effect. *Guignardia citricarpa*, the agent responsible for CBS, is classified by the EU as a harmful quarantine organism in Council Directive 2000/29/EC⁶³ on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community. The Directive lays down the phytosanitary provisions to be met and control measures to be carried out at the place of origin and upon arrival in the EU. Decision 2014/422/E⁶⁴ adds that citrus fruit from South Africa can only be introduced into the EU if the consignments are shipped with a phytosanitary certificate, stating that: 1) the citrus has been subjected to treatments against CBS, 2) inspections have been conducted and no signs of CBS have been found to be present, and 3) samples have been taken and they do not show any signs of CBS (Annex point 1). Additionally, producers must have a traceability program and citrus fruits must be visually inspected upon arrival in the EU. In case of the presence of CBS, the batch from which the sample was taken is to be refused entry into the EU or destroyed (Article 1, Annex point 2). The Decision also states: “In case of recurring interceptions due to failing monitoring and certification procedures within the same year, the Commission will review this Decision before the sixth interception has been notified”.⁶⁵

Citrus fruits infected with *Guignardia citricarpa* are therefore not allowed to be imported into the EU due to their quarantine regulations. South Africa is not the only country affected by this regulation; Argentina⁶⁶ and Brazil⁶⁷ in particular are both battling CBS and therefore face restrictions in accessing the EU market. The EU prohibits importing citrus fruit infected with CBS due to the risk it may pose

⁶² Dep’t Agric. Forestry & Fisheries & Nat’l Agric. Mktg. Council, 55 INTERNATIONAL TRADEPROBE, 7 (2015).

⁶³ Council Directive 2000/29, on Protective Measures Against the Introduction into the Community of Organisms Harmful to Plants or Plant Products and Against their Spread within the Community, Annex II pt. I § 1, 2000 O.J. (L 169) (EC).

⁶⁴ Commission Implementing Decision of 2 July 2014 2014/422, Setting Out Measures in Respect of Certain Citrus Fruits Originating in South Africa to Prevent the Introduction Into and the Spread within the Union of *Phyllosticta citricarpa* (McAlpine) Van der Aa (notified under document C(2014) 4191), 2014 O.J. (L 196).

⁶⁵ *Id.* at recital 4.

⁶⁶ European Commission, Health and Consumer Protection Directorate-General, *Final Report of a Mission Carried Out in Argentina from 10 to 14 September 2001 in order to Evaluate the Inspection Procedures for Citrus Fruit Originating in Argentina and Exported to the European Union*, DG SANCO/4303/2001-MR final (2001).

⁶⁷ European Commission, Health and Consumer Protection Directorate-General, *Final Report of a Mission Carried out in Brazil from 3 to 6 July 2000 in order to Evaluate the Pre-Export Inspections on Citrus Fruit Originating in Brazil and Exported to the European Union*, DG(SANCO)/1180/2000- MR final (2000).

to its own citrus producing countries in the Mediterranean, including Spain, Italy and Greece. This is due to its concern that a piece of infected fruit could transfer the disease to its own citrus orchards. Therefore, the EU has implemented various restrictions and bans on the importation of South African citrus.

2. The Citrus Dispute – A Battle of Science

Since 1992, the EU and South Africa have been debating over CBS-related technical and political issues. Bilaterals over the past two decades have not resolved these issues.⁶⁸ The debate is not on scientific facts or lack of scientific information, and hence there is no case for the precautionary principle. It is rather on how to interpret the respective available data to determine whether they are enough to justify an SPS measure. The subject of the issue is hence a ‘battle of science’, as described above, largely resulting from the fact that WTO law does not provide any guidance on who interprets data and how such data shall be interpreted.

⁶⁸ HATTINGH ET AL., CITRUS BLACK SPOT: PEST RISK ASSESSMENT DOCUMENT FOR THE REVIEW OF CURRENT PHYTOSANITARY REGULATIONS PERTAINING TO THE EXPORT OF FRESH CITRUS FRUIT FROM THE REPUBLIC OF SOUTH AFRICA TO THE EU(2000); European Commission, Health & Consumer Protection Directorate-General, *Report of the Commission Working Group on Evaluation of the Pest Risk Assessment (PRA) Prepared by South Africa on Citrus Black Spot (CBS)* (Oct. 24, 2001); DIRECTORATE PLANT HEALTH & QUALITY ET AL., RESPONSE FROM SOUTH AFRICA ON THE REPORT (DATED 24/10/2001) OF THE EC WORKING GROUP (WG) RELATING TO THE WG’S EVALUATION OF THE PEST RISK ASSESSMENT (PRA) BY SOUTH AFRICA ON CITRUS BLACK SPOT (CBS)(2002); European Commission, Health & Consumer Protection Directorate-General, *Report of the Commission Working Group on Evaluation of the Pest Risk Assessment Prepared by South Africa on Citrus Black spot (caused by Guignardia citricarpa Kiehy)* (June 15-16, 2006); S. AFR. CITRUS BLACK SPOT EXPERT WORKING GROUP, REPORT OF THE SOUTH AFRICAN CBS EXPERT WORKING GROUP ON EVALUATION OF THE PEST RISK ANALYSIS FOR CITRUS BLACK SPOT (GUIGNARDIA CITRICARPA) ON FRESH CITRUS FRUIT FROM SOUTH AFRICA TO THE EUROPEAN UNION (June 1, 2007); EFSA Panel on Plant Health (PLH), *Pest Risk Assessment and Additional Evidence Provided by South Africa on Guignardia citricarpa Kiehy, Citrus Black Spot Fungus – CBS[1]- Scientific Opinion of the Panel on Plant Health*, 7(1) EFSA J. (2008); S. AFR. CITRUS BLACK SPOT EXPERT WORKING GRP., POSITION DOCUMENT – COMMENTS ON THE EUROPEAN FOOD SAFETY AUTHORITY’S OPINION ON CBS, NEW INFORMATION AND IMPLICATIONS FOR THE PEST RISK ASSESSMENT (2009); S. AFR. CITRUS BLACK SPOT EXPERT PANEL, COMMENTS ON: EFSA PANEL ON PLANT HEALTH, 2013: DRAFT SCIENTIFIC OPINION ON THE RISK OF PHYLLOSTICTA CITRICARPA (GUIGNARDIA CITRICARPA) FOR THE EU TERRITORY WITH IDENTIFICATION AND EVALUATION OF RISK REDUCTION OPTIONS (Sept. 11, 2013); EFSA Panel on Plant Health (PLH), *Statement on the Comments by Hattingh et al. (2014) on the EFSA PLH Panel (2014) Scientific Opinion on Citrus Black Spot*, 13(1) EFSA J. (2015); among many others.

South Africa has exported citrus to European countries since 1926,⁶⁹ even though CBS has been present in some South African citrus orchards since 1929.⁷⁰ Most South African citrus exported to Europe has, for a long time, been primarily for consumption in the northern European member states.⁷¹ Before the harmonization of the EU phytosanitary regulations in the early 1990s, citrus fruit exports to Europe were not subject to such strict phytosanitary regulations. Citrus fruits infected with CBS were instead regulated through quality standards, which permitted a maximum of three lesions per fruit.⁷² However, with the formation of what is now the EU, and therefore the customs union among many European countries, the EU became concerned about importing citrus infected with CBS due to the risk it may pose to its own citrus producing countries in the Mediterranean.

South Africa claims that the EU's phytosanitary measures against citrus black spot disease are not scientifically justified and are more trade restrictive than necessary. For example, CBS has never become established in any region with a Mediterranean climate (including the Western Cape, southern Australia, western Australia, Chile, Spain, Greece, Israel, Italy, Turkey and California) and only exists in places with a subtropical, summer rainfall climate. Therefore, South Africa argues that it is not possible for CBS to become established in the citrus-producing countries of the EU due to their Mediterranean climate.⁷³ The use of climate matching techniques is a common way to measure the potential for the establishment of new species.⁷⁴ Paul et al. compared the climates of places around the world where CBS is currently known to be distributed, and concluded that climate is an effective barrier for CBS establishment, and that the climate "in the vast majority of EU countries is definitely unsuitable for establishment" of CBS.⁷⁵

⁶⁹ HATTINGH ET AL., CITRUS BLACK SPOT: PEST RISK ASSESSMENT DOCUMENT FOR THE REVIEW OF CURRENT PHYTOSANITARY REGULATIONS PERTAINING TO THE EXPORT OF FRESH CITRUS FRUIT FROM THE REPUBLIC OF SOUTH AFRICA TO THE EU 1 (2000)

⁷⁰ Ida Paul et al., *The Potential Global Geographical Distribution of Citrus Black Spot Caused by Guignardia citricarpa (Kiehy): Likelihood of Disease Establishment in the European Union*, 24 CROP PROTECTION (2005).

⁷¹ S. AFR. CITRUS BLACK SPOTS EXPERT WORKING GROUP, POSITION DOCUMENT – COMMENTS ON THE EUROPEAN FOOD SAFETY AUTHORITY'S OPINION ON CBS, NEW INFORMATION AND IMPLICATIONS FOR THE PEST RISK ASSESSMENT 4 (2009).

⁷² *Id.* at 4.

⁷³ *Id.*

⁷⁴ A. Vicent, Relationship between Environmental Variables and the Risk of Establishment of *Guignardia citricarpa* in Spain (2006) (unpublished manuscript).

⁷⁵ "There is an inherent level of uncertainty associated with the use of models to predict suitable areas of establishment, particularly for plant pathogens. Strains of bacterial and fungal plant pathogens can vary genetically and may have varying tolerances to biotic and abiotic environmental factors. Likewise, environmental factors such as climate may vary considerably with the possibility for isolated areas with micro-climates that may be very

Additionally, CBS is only recorded to have spread to new areas through the movement of infected propagation material⁷⁶ into areas where citrus is grown (and, as stated above, only in areas where the climate is suitable for establishment). There is not a single reported case of CBS being spread to new areas by citrus fruit.⁷⁷ This is despite the fact that large quantities of CBS-infected citrus fruits have moved into these Mediterranean climate areas for many years.⁷⁸ Additionally, timing—of the presence of spores, of inoculation and of susceptibility—is extremely important for CBS to occur. A series of consecutive steps would have to occur in order for CBS to become established. Therefore, South Africa argues that

different from surrounding areas”. PLANT EPIDEMIOLOGY & RISK ANALYSIS LAB. CTR. PLANT HEALTH SCI. & TECH. ET AL., REV. 2, RISK ASSESSMENT OF CITRUS SPP. FRUIT AS A PATHWAY FOR THE INTRODUCTION OF GUIGNARDIA CITRICARPA KIELY, THE ORGANISM THAT CAUSES CITRUS BLACK SPOT DISEASE²⁵ (2010); Ida Paul et al., *supra* note 69, at 302-04.

⁷⁶ For example seeds and other plant material for the purpose of creating new plants

⁷⁷ PLANT EPIDEMIOLOGY & RISK ANALYSIS LAB. CTR. PLANT HEALTH SCI. & TECH. ET AL., REV. 2, RISK ASSESSMENT OF CITRUS SPP. FRUIT AS A PATHWAY FOR THE INTRODUCTION OF GUIGNARDIA CITRICARPA KIELY, THE ORGANISM THAT CAUSES CITRUS BLACK SPOT DISEASE (2010).

⁷⁸ “Despite over 100 years of unregulated movement of citrus fruit and citrus plant material within Australia, over 50 years of unregulated movement of citrus plants and 84 years of unregulated movement of citrus fruit from CBS endemic areas to non-endemic areas in South Africa and over 20 years of large scale citrus fruit exports from CBS-endemic countries to citrus producing regions in southern Europe (with as much as 84 years of such exports with smaller volumes), CBS has not establishment in any of these areas with a Mediterranean climate”. S. AFR. CITRUS BLACK SPOT EXPERT PANEL, COMMENTS ON: EFSA PANEL ON PLANT HEALTH, 2013. DRAFT SCIENTIFIC OPINION ON THE RISK OF PHYLLOSTICTA CITRICARPA (GUIGNARDIA CITRICARPA) FOR THE EU TERRITORY WITH IDENTIFICATION AND EVALUATION OF RISK REDUCTION OPTIONS 1-2 (Sept. 9, 2013). Additionally, citrus has been exported to the EU from southern Africa since 1926. HATTINGH ET AL., CITRUS BLACK SPOT: PEST RISK ASSESSMENT DOCUMENT FOR THE REVIEW OF CURRENT PHYTOSANITARY REGULATIONS PERTAINING TO THE EXPORT OF FRESH CITRUS FRUIT FROM THE REPUBLIC OF SOUTH AFRICA TO THE EU 5-6 (2000); S. AFR. CITRUS BLACK SPOT EXPERT WORKING GROUP, RESPONSE FROM SOUTH AFRICA ON THE REPORT (DATED 24/10/2001) OF THE EC WORKING GROUP (WG) RELATING TO THE WG’S EVALUATION OF THE PEST RISK ASSESSMENT (PRA) BY SOUTH AFRICA ON CITRUS BLACK SPOT (CBS) 5(2002); S. AFR. CITRUS BLACK SPOT EXPERT PANEL, COMMENTS ON: EFSA PANEL ON PLANT HEALTH, 2013. DRAFT SCIENTIFIC OPINION ON THE RISK OF PHYLLOSTICTA CITRICARPA (GUIGNARDIA CITRICARPA) FOR THE EU TERRITORY WITH IDENTIFICATION AND EVALUATION OF RISK REDUCTION OPTIONS 102 (Sept. 9, 2013).

imported citrus fruit is highly unlikely to be a pathway for the establishment of CBS.⁷⁹

The EU defends its position by arguing that there is a chance, however minimal it may be, that CBS could become established in the EU. The EFSA Panel on Plant Health conducted a risk assessment and concluded that CBS-infected fruit from South Africa poses a risk to European citrus orchards. The EU argued that “[a]lthough the probability would be low, it is believed possible that a single conidium⁸⁰ could initiate infection and disease development on individual trees and this could ultimately lead to the eventual establishment of the disease in a citrus producing area over a long period of time”⁸¹. Additionally, EFSA concluded that, based on climate data, release of infectious spores in EU citrus-growing areas is in most years early enough to coincide with the climatic conditions favorable for infection.⁸²

In summary, based on undisputed data, South Africa argues that the EU measures are not scientifically justified and lack a technical basis. Additionally, they are more restrictive than necessary and have a negative impact on the South African citrus industry. Thus, South Africa claims that the measures imposed by the EU are not in compliance with the SPS Agreement. The EU argues that its territory is free from CBS, and since there is a chance that CBS could become established in the EU from imported fruit, it does not want to take the chance.⁸³ One could meaningfully explain that the EU exercises its right to determine its own ALOP by proposing a zero risk strategy with regards to CBS. However, this would not cover

⁷⁹ PLANT EPIDEMIOLOGY & RISK ANALYSIS LAB. CTR. PLANT HEALTH SCI. & TECH. ET AL., REV. 2, RISK ASSESSMENT OF CITRUS SPP. FRUIT AS A PATHWAY FOR THE INTRODUCTION OF GUIGNARDIA CITRICARPA KIELY, THE ORGANISM THAT CAUSES CITRUS BLACK SPOT DISEASE (2010); S. AFR. CITRUS BLACK SPOT EXPERT PANEL, COMMENTS ON: EFSA PANEL ON PLANT HEALTH, 2013. DRAFT SCIENTIFIC OPINION ON THE RISK OF PHYLOSTICTA CITRICARPA (GUIGNARDIA CITRICARPA) FOR THE EU TERRITORY WITH IDENTIFICATION AND EVALUATION OF RISK REDUCTION OPTIONS 1-2 (Sept. 9, 2013).

⁸⁰ The non-mobile spore of a fungus.

⁸¹ European Commission, Health & Consumer Protection Directorate-General, *Report of the Commission Working Group on Evaluation of the Pest Risk Assessment (PRA), Prepared by South Africa on Citrus Black Spot (CBS)*, 1 (Oct. 24, 2001).

⁸² EFSA Panel on Plant Health (PLH), *Scientific Opinion on the Risk of Phyllosticta citricarpa (Guignardia citricarpa) for the EU Territory with Identification and Evaluation of Risk Reduction Options*, 12(2) EFSA J. (2014).

⁸³ WTO Committee on Sanitary and Phytosanitary Measures, *Summary of the Meeting 27-28 June 2013*, G/SPS/R/71 (2013); WTO, Committee on Sanitary and Phytosanitary Measures, *Summary of the Meeting 25-26 March 2014*, G/SPS/R/74 (2014); WTO, Committee on Sanitary and Phytosanitary Measures, *Summary of the Meeting 15 and 17 October 2014*, G/SPS/R/76 (2014).

the problem. The question here is not so much whether the zero tolerance is legal but rather whether the SPS measure to reach this policy is justified by science. To be more precise, as scientific facts are clear, both South Africa's and the EU's positions in this respect can be legitimately justified by science. There is a slight chance that CBS might spread, even if it is very unlikely. The major issue is hence: is that enough to justify an SPS measure? Is the EU's restriction a protectionist measure in disguise? According to which standard does science need to be evaluated? What lies behind these issues is a value judgment, namely, how to interpret science. This is particularly where the science-approach of the WTO comes to its limit and normative clarity is required.

IV. EFFECT OF THE BAN ON SOUTH AFRICAN CITRUS EXPORT MARKETS – HOW BIGGER TRADING BLOCS DEFINE THE 'SCIENCE ONLY' PARADIGM IN WTO LAW

In the absence of such normative clarity on the 'science only' approach, market forces rule the game. Bigger trading blocs may be tempted to use their market power to dominate regulatory standards, protecting their own markets and their peoples' desires even beyond their borders. This carries the danger that the question of which 'science' needs to be taken into account to satisfy WTO legal requirements will not be determined by law, but by the party with the bigger market power. We will illustrate this effect, again, with the example of the South African citrus dispute with the EU.

We have already emphasized that citrus fruit has been imported from South Africa for decades, potentially carrying CBS without being noticed and without doing harm. At the beginning of 2010, several consignments of South African citrus fruit were intercepted in the EU due to CBS. As a result, the European Commission announced in 2012 that it would institute a five-interception cutoff for South African citrus fruit infected with CBS during the 2013 season. If South Africa reached the cutoff point, the EU would implement stricter import measures, including possibly a complete ban.⁸⁴ Therefore, the South African authorities and industry members strengthened CBS risk management measures in order to cope with the EU regulations and limit future potential interceptions.⁸⁵

Nevertheless, the number of interceptions went above and beyond the threshold. After South Africa had 35 interceptions due to CBS, on November 29, 2013, the EU closed the market to South African citrus fruit for the remainder of the year.⁸⁶

⁸⁴ Dep't of Agric., Forestry & Fisheries, Media Release, Reports of a Ban of Exports of Fresh Citrus Fruit to the European Union due to Citrus Black Spot (Dec. 1, 2013).

⁸⁵ *Id.*

⁸⁶ Perishable Prod. Export Control Bd. (PPECB), *Annual Report 2013-2014*, 28 (2014).

Since it was at the end of the export season,⁸⁷ the effect on exports that year was not large; however, it would have consequences for future years.

The South African Citrus Growers' Association ("CGA") implemented additional measures, starting from the 2014 season,⁸⁸ in order to avoid a ban. In order to export to the EU, orchards must have had a 'clean record' from the 2013 export season. All orchards must also have been tested for CBS using the pre-harvest ethephon test and must have been inspected within two weeks of harvesting. It is for these reasons that 1161 orchards withdrew their export registrations for the 2014 season.⁸⁹ On September 8, 2014, after 28 interceptions during the 2014 season, South Africa voluntarily suspended exports to the EU except for citrus fruit from the Western Cape and Northern Cape provinces.⁹⁰ However, given that approximately 80% of South African citrus production is in areas where CBS occurs, this is not a viable solution for South Africa.⁹¹ During the 2013 season, South Africa had exported 704,020 tons of citrus fruit to the EU, and in 2014 this figure dropped to 643,303.⁹² Due to the challenges and uncertainty associated with the European market, South Africa is diversifying its export market. The CGA has indicated that alternative markets of interest are Indonesia, Thailand, China, USA, Vietnam, Japan, South Korea, Philippines, Russia, Ukraine and India.⁹³ Russia has in particular become a more attractive market due to the recent sanctions on producers in the EU. In addition, in the 20 years of trade with Russia (as of October 2, 2015), not a single shipment has been rejected on phytosanitary

⁸⁷ Citrus arrives in the EU about four weeks after it is packed in South Africa. Jacques Claassen, *Intense Lobbying to Ensure Citrus Exports*, FARMER'S WEEKLY (May 30, 2014), <http://www.farmersweekly.co.za/agri-business/agribusinesses/intense-lobbying-to-ensure-citrus-exports/>. The citrus season is from approximately April to September, Nicolas Rubio, *Uncertainty of Policy Changes in the European Union Cloud Forecast for South African Citrus Exports* (USDA Foreign Agric. Service, GAIN report, 2013), and interceptions in the EU are concentrated in September and October every year, Jacques Claassen, *Intense Lobbying to Ensure Citrus Exports*, FARMER'S WEEKLY (May 30, 2014), <http://www.farmersweekly.co.za/agri-business/agribusinesses/intense-lobbying-to-ensure-citrus-exports/>;

⁸⁸ Three out of five strikes were from one producer located in the Eastern Cape, and the product was organic lemons (confirmed by interview with a producer in the Western Cape).

⁸⁹ Claassen, *supra* note 84.

⁹⁰ CITRUS GROWERS' ASS'N, Annual Report, (2015).

⁹¹ S. AFR. CITRUS BLACK SPOT EXPERT WORKING GROUP, RESPONSE FROM SOUTH AFRICA ON THE REPORT (DATED 24/10/2001) OF THE EC WORKING GROUP (WG) RELATING TO THE WG'S EVALUATION OF THE PEST RISK ASSESSMENT (PRA) BY SOUTH AFRICA ON CITRUS BLACK SPOT (CBS) 14 (2002).

⁹² ITC, *Trade Map*, <http://www.trademap.org/Index.aspx> (last visited Sept. 2, 2015).

⁹³ CITRUS GROWERS' ASS'N, Annual Report, 17 (2014); CITRUS GROWERS' ASS'N, Annual Report, (2015).

grounds.⁹⁴ Although in 2014 South Africa was able to divert some citrus fruit to these other export markets, estimations were that they shipped 15-20% less than in 2013.⁹⁵ It is estimated that in 2014 the industry lost a total of ZAR 1 billion (USD 75 million),⁹⁶ about half in revenue and the other half in additional spraying costs.

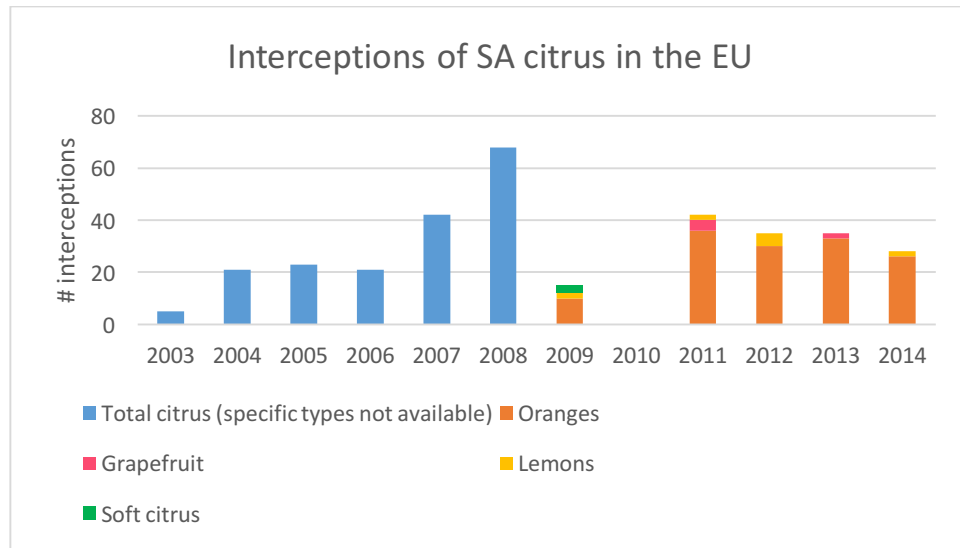


Figure 1. Number of interceptions of South African citrus due to CBS in the European Union from 2003-2014⁹⁷ *2010 information not available.

⁹⁴ FRESH PLAZA, *South Africa Main Citrus Supplier to Russia*, <http://www.freshplaza.com/article/134982/south-africa-main-citrus-supplier-to-russia> (last visited Oct. 1, 2015)

⁹⁵ Paul Vecchiatto, *SA Citrus Growers Halt Fruit Exports to EU*, INVESTORS MONTHLY (Sept. 8, 2014), http://cached.newslookup.com/cached.php?ref_id=71&siteid=2060&id=8148489&t=1410151961; Dep’t Agric. Forestry & Fisheries & Nat’l Agric. Mktg. Council, 55 INTERNATIONAL TRADEPROBE, 8 (2015).

⁹⁶ As of October 31, 2016 (exchange rate: 1 USD = 13.8 ZAR)

⁹⁷ Sources of data: EUROPHYT, *Interceptions of Harmful Organisms in Commodities Imported into the EU Member States and Switzerland* (2011), http://ec.europa.eu/food/sites/food/files/plant/docs/ph_biosec_europhyt-interceptions-2011_summary.pdf; EUROPHYT, *Interceptions of Harmful Organisms in Commodities Imported into the EU Member States and Switzerland*, (2012), http://ec.europa.eu/food/sites/food/files/plant/docs/ph_biosec_europhyt-interceptions-2012_summary.pdf; EUROPHYT, *Interceptions of Harmful Organisms in Commodities Imported into the EU Member States and Switzerland*, (2013), http://ec.europa.eu/food/sites/food/files/plant/docs/ph_biosec_europhyt-interceptions-2013_summary.pdf; EUROPHYT, *Interceptions of Harmful Organisms in Commodities Imported*

South Africa has criticized the lack of a harmonized inspection method in the EU. Interceptions in northern Europe, such as in Germany, the Netherlands and the UK are minimal. The majority of interceptions are in the south, particularly in Spain. It is possible that the inspections are done by visual confirmation, but spots on citrus fruit are not necessarily due to CBS, as there are numerous causes of black spots indistinguishable from CBS. South Africa is thus attempting to standardize inspection procedures.⁹⁸

South African citrus growers and authorities have also made adjustments to comply with the EU requirements, including additional spraying, inspections, packhouse audits and testing, both in the orchard and the packhouse.⁹⁹ These measures are very costly,¹⁰⁰ but important to maintain access to the lucrative EU market. Nevertheless, given the uncertainty, the industry is diversifying its export markets to reduce dependence on the EU market in the long run.¹⁰¹ However, 2015 brought some surprising news: South Africa was able to increase its exports

into the EU Member States and Switzerland, (2014), http://ec.europa.eu/food/sites/food/files/plant/docs/ph_biosec_europhyt-interceptions-2014_summary.pdf; EUROPHYT, *Interceptions of Harmful Organisms in Commodities Imported into the EU Member States and Switzerland*, (2015), http://ec.europa.eu/food/sites/food/files/plant/docs/ph_biosec_europhyt-interceptions-2015_summary.pdf; Classen, *supra* note 84; EFSA Panel on Plant Health, *Pest Risk Assessment and Additional Evidence Provided by South Africa on Guignardia citricarpa Kiehl, Citrus Black Spot Fungus – CBS[1]-Scientific Opinion of the Panel on Plant Health*, 7(1) EFSA J. 1(2008).

⁹⁸ S. AFR. CITRUS BLACK SPOT EXPERT PANEL, COMMENTS ON: EFSA PANEL ON PLANT HEALTH, 2013. DRAFT SCIENTIFIC OPINION ON THE RISK OF PHYLLOSTICTA CITRICARPA (GUIGNARDIA CITRICARPA) FOR THE EU TERRITORY WITH IDENTIFICATION AND EVALUATION OF RISK REDUCTION OPTIONS (Sept. 9, 2013); FRESHFRUITPORTAL.COM, *South Africa Alleges “Inconsistent” Citrus Inspections in Southern Europe*, (Feb. 11, 2015), <http://www.freshfruitportal.com/news/2015/02/11/south-africa-alleges-inconsistent-citrus-inspections-in-southern-europe/>.

⁹⁹ Dep’t Agric. Forestry & Fisheries & Nat’l Agric. Mktg. Council, 55 INTERNATIONAL TRADEPROBE, 7 (2015); FRESHFRUITPORTAL.COM, *South Africa Alleges “Inconsistent” Citrus Inspections in Southern Europe*, (Feb. 11, 2015), <http://www.freshfruitportal.com/news/2015/02/11/south-africa-alleges-inconsistent-citrus-inspections-in-southern-europe/>.

BUREAU FOR FOOD & AGRIC. SYS., BASELINE AGRICULTURAL OUTLOOK 2013-2014 71 (2014).

¹⁰⁰ André Jooste et al., *Standards and Trade in South Africa: Paving Pathways for Increased Market Access and Competitiveness*, in STANDARDS AND GLOBAL TRADE: A VOICE FOR AFRICA 235 (John S. Wilson & Victor O. Abiola eds., 2003).

¹⁰¹ BUREAU FOR FOOD & AGRIC. SYS., BASELINE AGRICULTURAL OUTLOOK 2013-2014 71 (2014).

to the EU, for a total of 708,856 tons.¹⁰² The reason behind this increase is unclear. Were South Africa's increased spraying and testing effective and not insufficient as previously thought? Were the weather conditions less conducive to the growth and spread of the fungus causing CBS? Was it because South Africa focused on the northern European harbors and avoided Spain since they had previously questioned their inspection methods?

South Africa disagrees with the EU's zero tolerance approach to the presence of CBS on citrus fruit and argues it is more trade restrictive than necessary. During the whole process, South Africa tried to get help with its interpretation of data in front of international bodies. In March 2010, South Africa requested dispute resolution before the International Plant Protection Convention ("IPPC").¹⁰³ Before this process could continue, both the EU and South Africa had to agree on the terms of reference and decide on three panel members. While the terms of reference have been agreed upon, there is still no consensus between the two parties regarding the panel members. This is a flaw in the system as it can stall the process for years. Even after six years, this dispute resolution has not gone one step further. In June 2013, after several years of exchanging opinions with the EU, the South African Department of Agriculture, Forest and Fisheries ("DAFF") registered a trade concern with the WTO (#356).¹⁰⁴ Due to the limited success of the IPPC panel process and the fact that the trade concern remains unresolved, in 2014 South Africa initiated a dispute at WTO level.¹⁰⁵

It is most remarkable to see that on the one hand South Africa is of the opinion that the available scientific data are not sufficient to justify a ban such as the one imposed by the EU. On the other hand, in order to not lose the important EU market, South Africa had to factually adapt to EU standards. In other words, in the absence of clear normative guidance on how to interpret the available scientific data, the EU, the bigger trading partner, *de facto* imposes its interpretation of data with regards to citrus black spot disease and the respective measures to be taken on South Africa as the smaller trading partner.

V. DISCUSSION

¹⁰² ITC, *Trade Map*, , <http://www.trademap.org/Index.aspx> (last visited Sept. 2, 2015).

¹⁰³ The IPPC is a treaty for international cooperation in plant protection. The IPPC is named in the SPS Agreement as an organization that develops reference standards for phytosanitary measures.

¹⁰⁴ WORLD TRADE ORGANISATION, *SPS Information Management System: Specific Trade Concerns*, <http://spsims.wto.org/web/pages/search/stc/Search.aspx> (last visited Oct. 21, 2015).

¹⁰⁵ CITRUS GROWERS' ASS'N Annual Report, , 6-7 (2014); WTO, Committee on Sanitary and Phytosanitary Measures, *Summary of the Meeting 27-28 June 2013*, G/SPS/R/71 (2013).

In this section we will investigate whether WTO law can provide a solution to the problem that the ‘science only’ uncertainty enables stronger trading blocs to *de facto* extraterritorialize their standards. In this sense, we will analyze, again with the example of the citrus dispute, whether the SPS Agreement can, and in what way it should, provide legal certainty with regards to how the relevant data are to be interpreted. The SPS Agreement essentially applies three criteria by which a challenged SPS measure will be evaluated: there should be a scientific justification, the measure should be non-discriminatory and it should not be more trade-restrictive than necessary. Since the discrimination aspect is irrelevant in this case, the EU’s measure will be analyzed according to the other two criteria.

A. Scientific justification: Probability as a benchmark under Articles 2.2 and 5.1

As discussed earlier, this case is an example of a ‘battle of sciences’ dispute. South Africa and the EU have been debating whether or not CBS can become established in the EU from infected South African citrus fruit. Their discussions focus on the technical aspects of this possibility. South Africa argues that based on scientific evidence CBS cannot become established in the EU. A whole series of consecutive, unlikely steps would need to occur for this to happen. The EU counters this by saying that the scientific evidence demonstrates that there is a small chance that CBS could become established. Since discussions between South Africa and the EU over 22 years could not settle the disagreement, the WTO will take on the role of a mediator and global regulator in this dispute. The WTO will be faced with the task of assessing the scientific validity of the EU’s phytosanitary measures against the importation of South African citrus fruit due to the presence of CBS, thereby providing a benchmark against which scientific data may be evaluated in future disputes.¹⁰⁶

Article 2.2 of the SPS Agreement states that SPS measures should be applied only to the extent necessary to protect human, animal or plant life or health, should be based on scientific principles and should not be maintained without sufficient scientific evidence. Exceptions are permitted in cases where Article 5.7 is relevant, which states that “in cases where relevant scientific information is insufficient”, a member may provisionally adopt SPS measures. Article 5.7 however does not apply to the citrus case because the EU’s quarantine restrictions are neither provisional, nor is science inconclusive. The initial burden of proof to establish

¹⁰⁶ There is ample discussion on whether the DSB’s decision should be treated as such a common law of trade, see inter alia Raj Bhala, *The Myth about Stare Decisis and International Trade Law (Part One of a Trilogy)*, 14 AM. UNIV. INT’L LAW REV. (1999), 845, passim; Dominique Sinopoli & Kai Purnhagen, *Reversed Harmonization or Horizontalization of EU Standards?: Does WTO Law Facilitate or Constrain the Brussels Effect?* 34 WISC. INT’L L.J. 92, 97 (2016).

that the measure is not in compliance with Article 2.2 is on the complaining party, which must establish a *prima facie* case of inconsistency.¹⁰⁷ Afterwards, the burden of proof is on the defending party which can counter the claimed inconsistency.¹⁰⁸

In a similar previous WTO dispute, *Australia – Salmon*, the Panel found that Australia’s measures regarding the importation of Canadian salmon were not ‘based on’ a risk assessment in accordance with Article 5.1¹⁰⁹ and, by implication, were not in compliance with Article 2.2.¹¹⁰ The Appellate Body stated that a risk assessment¹¹¹ must not simply conclude that there is a *possibility* of entry, establishment or spread of a pest or disease, but rather establish the *probability*, or likelihood, that a pest or disease will enter, establish or spread, as a result of the SPS measure that might be applied.¹¹² As the AB held in the earlier case on *EC – Hormones*¹¹³, the ‘risk’ evaluated in a risk assessment must be an ascertainable risk; theoretical uncertainty is not the kind of risk which is to be assessed under Article 5.1.¹¹⁴ The reason for this is “since science can never provide absolute certainty

¹⁰⁷ Panel Report, *European Communities–Measures Concerning Meat and Meat Products*, ¶8.252, WT/DS26/R (Aug. 18, 1997); Appellate Body Report, *European Communities–Measures Concerning Meat and Meat Products*, ¶ 98, WT/DS26/AB/R (Jan. 16, 1998).

¹⁰⁸ Appellate Body Report, *European Communities–Measures Concerning Meat and Meat Products*, ¶ 98, WT/DS26/AB/R (Jan. 16, 1998).

¹⁰⁹ Panel Report, *Australia–Measures Affecting Importation of Salmon*, ¶ 8.99, WT/DS18/R (June 12, 1998).

¹¹⁰ As stated in the Appellate Body Report, *European Communities – Measures Concerning Meat and Meat Products*, WT/DS26/AB/R (Jan. 16, 1998): “Articles 2.2 and 5.1 should constantly be read together. Article 2.2 informs Article 5.1: the elements that define the basic obligation set out in Article 2.2 impart meaning to Article 5.1”. Therefore, it can be presumed that if there is found to be a violation of Article 5.1 or 5.2, it can be presumed to be a violation of the more general Article 2.2. Panel Report, *India–Measures Concerning the Importation of Certain Agricultural Products*, ¶ 8.51, WT/DS430/R (Oct. 14, 2014).

¹¹¹ The Appellate Body states that a risk assessment under Article 5.1 must:

“(1) identify the diseases whose entry, establishment or spread a Member wants to prevent within its territory, as well as the potential biological and economic consequences associated with the entry, establishment or spread of these diseases;

(2) evaluate the likelihood of entry, establishment or spread of these diseases, as well as the associated potential biological and economic consequences; and

(3) evaluate the likelihood of entry, establishment or spread of these diseases according to the SPS measures which might be applied”. Appellate Body Report, *Australia–Measures Affecting Importation of Salmon*, ¶ 121, WT/DS18/AB/R (Oct. 20, 1998).

¹¹² Appellate Body Report, *Australia–Measures Affecting Importation of Salmon*, ¶ 123, WT/DS18/AB/R (Oct. 20, 1998).

¹¹³ Appellate Body Report, *European Communities–Measures Concerning Meat and Meat Products (Hormones)*, WT/DS26/AB/R (Jan. 16, 1998).

¹¹⁴ WTO Appellate Body Report, *European Communities–Measures Concerning Meat and Meat Products*, ¶ 186, WT/DS26/AB/R (Jan. 16, 1998).

that a given substance will not ever have adverse health effects”,¹¹⁵ theoretical uncertainty would by the end of the day allow Members to justify any kind of SPS measures. This statement can be interpreted as providing risk assessment with some, albeit weak, normative value that SPS measures need to be “sufficiently supported or reasonably warranted by the risk assessment”.¹¹⁶ However, the AB remains silent as to what “sufficiently supported” or “reasonably warranted” means. In *Australia – Salmon*, the AB stipulated that paragraph 4 of Annex A of the SPS Agreement “refers to ‘the evaluation of the likelihood’ and not to *some* evaluation of the likelihood.”¹¹⁷ One may read this passage as emphasis to provide for a substantial, qualitative or quantitative, assessment of a certain quality of the data and not just some kind of evaluation. As it is hence established that first, SPS measures require an interpretation of data and second, this interpretation needs to be of some quality, there is no certainty as to how data need to be interpreted to establish probability.

Two other similar disputes address the probability of a hazard as a benchmark in risk assessment. In *Australia – Apples*, New Zealand filed a dispute against Australia regarding Australia’s measures on the importation of apples from New Zealand. Australia had adopted sixteen phytosanitary measures on the importation of New Zealand apples, including eight measures against the risk of fire blight, four against European canker, one against apple leaf-curling midge, and three regarding all of the above pests. The panel found that thirteen of the sixteen measures (the pest-specific ones) were maintained without scientific evidence and were therefore inconsistent with Article 2.2. According to the Panel, “Australia’s measures are ‘maintained without sufficient scientific evidence’. There is no ‘rational or objective’ relationship between those measures and scientific evidence, and therefore they are inconsistent with Article 2.2 of the SPS Agreement.”¹¹⁸ Australia’s measures depended on the idea that mature, symptomless apples were a pathway for the transmission of the diseases at hand. However, there was no scientific evidence that mature, symptomless apples were a pathway that would allow the introduction of these diseases from New Zealand. Additionally, there was no scientific evidence that Australia’s climate was favorable for fire blight and European canker to establish and spread.¹¹⁹

¹¹⁵ Appellate Body Report, *European Communities—Measures Concerning Meat and Meat Products (Hormones)*, ¶ 186, WT/DS26/AB/R (Jan. 16, 1998).

¹¹⁶ Appellate Body Report, *European Communities—Measures Concerning Meat and Meat Products (Hormones)*, ¶ 186, WT/DS26/AB/R (Jan. 16, 1998).

¹¹⁷ Appellate Body Report, *Australia—Measures Affecting Importation of Salmon*, ¶ 124, WT/DS18/AB/R (Oct. 20, 1998).

¹¹⁸ Panel Report, *Australia—Measures Affecting the Importation of Apples from New Zealand*, ¶ 4.13, WT/DS367/R (Aug. 9, 2010).

¹¹⁹ Panel Report, *Australia—Measures Affecting the Importation of Apples from New Zealand*, ¶ 4.14, WT/DS367/R (Aug. 9, 2010).

Similarly, in *Japan – Apples*, the US challenged Japan’s quarantine restrictions on apples from the US to protect against the introduction of fire blight. The US complained about measures on the prohibition of imported apples from orchards in which fire blight was detected, the requirement that export orchards be inspected three times a year, and the disqualification of any orchard from exporting to Japan should fire blight be detected within a 500 meter buffer zone surrounding each orchard. The Panel found that Japan’s phytosanitary measures were inconsistent with Articles 2.2 and 5.1. Similar to the *Australia – Apples* case, the United States aimed to demonstrate that mature, symptomless apples do not serve as a pathway for the entry, establishment or spread of fire blight. In order to do this, the US had to demonstrate that there was insufficient scientific evidence supporting the view that mature, symptomless apples can serve as a pathway for the disease.¹²⁰ The Panel concluded that there was indeed insufficient scientific evidence, and that there was not a ‘rational relationship’ between the scientific evidence available and Japan’s measure.

These cases provide a benchmark for assessing the citrus dispute. As *Guignardia citricarpa* is considered to be a quarantine pest and is listed accordingly in the Directive, the EU argues that it must maintain its zero import tolerance.¹²¹ South Africa argues that the EU’s measures lack a scientific justification. Citrus has been exported to the EU since 1925, and there has never been an incidence of CBS in European orchards. Additionally, there have been no reported cases of CBS in a Mediterranean climate or of CBS becoming established through a piece of citrus fruit (instead, it is typically transferred by the movement of propagation material). The United States Department of Agriculture (“USDA”) also conducted an independent assessment and determined that citrus fruit is epidemiologically insignificant as a pathway for the introduction of CBS. Since CBS introduction by way of fruit depends on many specific factors at precise times, it is extremely unlikely that a piece of citrus fruit could cause the establishment of CBS.¹²² Due to

¹²⁰ Panel Report, *Japan–Measures Affecting the Importation of Apples*, ¶¶ 8.85, 8.86, 8.106, WT/DS245/R (Jul. 5, 2003).

¹²¹ European Commission, Health & Consumer Protection Directorate-General, *Report of the Commission Working Group on Evaluation of the Pest Risk Assessment Prepared by South Africa on Citrus Black spot (caused by Guignardia citricarpa Kiely)* (June 15-16, 2006).

¹²² PLANT EPIDEMIOLOGY & RISK ANALYSIS LAB. CTR. PLANT HEALTH SCI. & TECH. ET AL., REV. 2, RISK ASSESSMENT OF CITRUS SPP. FRUIT AS A PATHWAY FOR THE INTRODUCTION OF GUIGNARDIA CITRICARPA KIELY, THE ORGANISM THAT CAUSES CITRUS BLACK SPOT DISEASE (2010).

the very low chance that CBS could become established in the EU, South Africa argues that a zero import tolerance would be an illegal measure.¹²³

South Africa's complaint regarding the EU is that the EU maintains its stringent phytosanitary measures because "it has not been completely proven that CBS cannot establish in the PRA area"¹²⁴. South Africa argues that this is not in accordance with the 'minimum impact' principle of the IPPC¹²⁵ and with Article 5.6 of the SPS Agreement. Additionally, South Africa argues that the EU is setting an unattainable criterion in its regulation of CBS, namely that it must be completely proven that an event cannot occur,¹²⁶ thereby applying the precautionary principle.

Taking the cases above as a benchmark, the risk assessment must establish the *probability*, or likelihood, that a pest or disease will enter, establish or spread as a result of the SPS measure. Since 1) citrus fruit has not been known to be a pathway for the establishment of CBS, 2) a series of consecutive, *unlikely* steps would need to occur for establishment, and considering that 3) CBS has never become established in a region with a Mediterranean climate, it is *unlikely* that *Guignardia citricarpa* will become established and spread in the citrus-producing countries of the EU. While the EU counters that the scientific evidence demonstrates that there is a small chance that CBS could become established in its territory, the probability is, therefore, low. Whether this suffices to establish a rational relationship between scientific evidence and the EU's measures, or to prove that these measures are

¹²³S. AFR. CITRUS BLACK SPOT EXPERT WORKING GROUP, REPORT OF THE SOUTH AFRICAN CBS EXPERT WORKING GROUP ON EVALUATION OF THE PEST RISK ANALYSIS FOR CITRUS BLACK SPOT (*GUIGNARDIA CITRICARPA*) ON FRESH CITRUS FRUIT FROM SOUTH AFRICA TO THE EUROPEAN UNION 11 (2007).

¹²⁴ European Commission, Health & Consumer Protection Directorate-General, *Report of the Commission Working Group on Evaluation of the Pest Risk Assessment (PRA), Prepared by South Africa on Citrus Black Spot (CBS)* (Oct. 24, 2001); European Commission, Health & Consumer Protection Directorate-General, *Report of the Commission Working Group on Evaluation of the Pest Risk Assessment Prepared by South Africa on Citrus Black spot (caused by Guignardia citricarpa Kiehy)* (June 15-16, 2006).

¹²⁵ Secretariat of the Int'l Plant Protection Comm'n, International Standards for Phytosanitary Measures, ISPM1, *Phytosanitary Principles for the Protection of Plants and the Application of Phytosanitary Measures in International Trade*, Principle 1.4(2006), particularly the IPPC International Standard for Phytosanitary Measures (ISPM) No. 11 on pest risk analysis for quarantine pests. This document recognizes that zero-risk is not a reasonable option, but rather risk management should aim to achieve only the required degree of safety which is feasible.

¹²⁶ S. AFR. CITRUS BLACK SPOT EXPERT WORKING GROUP, REPORT OF THE SOUTH AFRICAN CBS EXPERT WORKING GROUP ON EVALUATION OF THE PEST RISK ANALYSIS FOR CITRUS BLACK SPOT (*GUIGNARDIA CITRICARPA*) ON FRESH CITRUS FRUIT FROM SOUTH AFRICA TO THE EUROPEAN UNION 8-9 (2007).

sufficiently supported or reasonably warranted cannot be said with complete certainty. However, one could meaningfully argue that the low probability brings this risk assessment closer to theoretical uncertainty than ascertainable risk, the former not being accepted as justification of an SPS measure. There is hence some argumentative support that the WTO panel would not find the EU's measures to be rational and therefore in compliance with Articles 5.1 and 2.2 of the SPS Agreement.

B. *Not More Trade Restrictive than Necessary: Alternative Measures under Article 5.6*

Each WTO member has the right to specify its own ALOP but is required to do so in compliance with the provisions of the SPS Agreement.¹²⁷ Members also have the right to establish SPS measures according to the ALOP they see fit; if desired, they can be as high as 'zero risk'¹²⁸. Article 5.6 states that SPS measures should not be more trade-restrictive than required to achieve their ALOP, taking into account technical and economic feasibility. Three cumulative conditions need to be fulfilled to establish a violation of Article 5.6. The complainant needs to demonstrate that an alternative measure:

- 1) is reasonably available taking into account technical and economic feasibility;
- 2) achieves the Member's appropriate level of sanitary or phytosanitary protection; and
- 3) is significantly less restrictive to trade as compared to the SPS measure contested.

According to South Africa, the EU's measures are more trade-restrictive than required to achieve its ALOP. It is the complaining party that bears the burden of proof to establish a *prima facie* case that an alternative measure meets all three elements under Article 5.6.¹²⁹ Therefore, if South Africa wishes to challenge these measures, it must propose an alternative measure that meets the criteria above. It is

¹²⁷ Michael Ming Du, *Autonomy in Setting Appropriate Level of Protection under the WTO law: Rhetoric or Reality?*, 13 J. OF INT'L ECON, L. (2010).

¹²⁸ Agreement on the Application of Sanitary and Phytosanitary Measures art. 3.3, 5.3, Marrakesh Agreement Establishing the World Trade Organisation, Annex 1A, Apr. 15, 1994, 1869 U.N.T.S. 493.

¹²⁹ Appellate Body Report, *Japan—Measures Affecting Agricultural Products*, ¶ 126, WT/DS76/AB/R (Feb. 22, 1999); Panel Report, *India—Measures Concerning the Importation of Certain Agricultural Products*, ¶ 7.525, WT/DS430/R, (Oct. 14, 2014); Appellate Body Report, *Australia – Measures Affecting the Importation of Apples from New Zealand*, ¶ 329, WT/DS367/AB/R (Nov. 29, 2010).

then up to the EU to defend itself by arguing that the alternative measure does not meet the three criteria. For example, this was demonstrated in *India – Agricultural Products*, in which the US requested consultations with India regarding India's prohibition of various agricultural products from the US due to concerns of Avian Influenza. The Panel found, and the AB upheld,¹³⁰ that India's measures were inconsistent with Articles 5.6 and 2.2 because they were significantly more trade-restrictive than required to achieve India's ALOP and were also applied beyond the extent necessary to protect human and animal life or health.¹³¹

When the citrus dispute is assessed at WTO level, the Panel must identify the level of protection that the EU has set as its appropriate level, and the level of protection that would be achieved by an alternative measure put forth by South Africa. If the level of protection of the proposed alternative measure meets or exceeds the EU's ALOP, it would be considered to be more trade restrictive than necessary. While exclusion of inoculum is certainly an effective control measure, the EU's regulations on the importation of citrus from South Africa have had, and will continue to have, a profound effect on the South African citrus industry. The effects are not only felt abroad; restrictions on the importation of citrus can have a negative impact on importers and distributors in the EU. Domestic consumers are also impacted. Due to the seasonality of citrus production, during its summer the EU relies on imports of citrus fruit from the southern hemisphere. For South Africa to challenge the EU's phytosanitary measures under Article 5.6 of the SPS Agreement, it would need to propose an alternative measure that meets the three criteria discussed above.

Under Council Directive 2000/29/E¹³² the EU listed potential risk management options to deal with such situations, one of which is the establishment of a pest free area. This would allow the importation of citrus from CBS-free provinces such as the Western Cape and Northern Cape to the EU market. Article 6.2 of the SPS Agreement also states that Members must recognize the concepts of pest-free or disease-free areas and areas of low pest or low disease prevalence. However, EFSA indicated that this is not an effective control measure in the case of South African citrus.¹³³ EFSA states that while in theory it would be effective, it would require continuous monitoring to ensure that the area is accurate. Although the Western

¹³⁰ Appellate Body Report, *India–Measures Concerning the Importation of Certain Agricultural Products*, ¶¶ 5.227, 5.233, WT/DS430/R (June 4, 2015).

¹³¹ Panel Report, *India–Measures Concerning the Importation of Certain Agricultural Products*, ¶ 7.617, WT/DS430/R, (Oct. 14, 2014).

¹³² Council Directive 2000/29, on Protective Measures Against the Introduction into the Community of Organisms Harmful to Plants or Plant Products and Against Their Spread within the Community, 2000 O.J.(L 169/1) (EC).]

¹³³ EFSA Panel on Plant Health (PLH), *Pest Risk Assessment Made by South Africa on *Guignardia citricarpa* Kiehl*, EFSA J. 925, 89 (2008).

Cape, Northern Cape and other regions are commonly known to be CBS-free, EFSA stated that information on such a monitoring program had not been provided to them. Nevertheless, South Africa would not benefit significantly from such a rule, as much of its citrus production does occur in places where CBS is present.

The US, on the other hand, recognizes that the Western and Northern Cape provinces are free from CBS.¹³⁴ The US currently allows the importation of citrus fruit from these provinces. Additionally, a proposed rule aims to give South African citrus even greater access to the US market. The US proposes to allow the importation of citrus fruit from areas in South Africa where CBS is known to occur. The fruit would have to be subject to phytosanitary treatment, packinghouse registration and there would have to be a traceability system in place. Additionally, a phytosanitary certificate and declaration would have to accompany the fruit. Citrus fruit from areas in South Africa which are CBS-free can continue to be imported under the current requirements, i.e., that they must be accompanied by a permit and subjected to inspection, shipping and packinghouse procedures.¹³⁵

Another possibility is to set up endangered and non-endangered zones in the EU to regulate the distribution and the end use of citrus, i.e., to limit the free movement of goods and only keep South African citrus in the northern and eastern member states.¹³⁶ This measure would have the benefit of allowing South Africa to export citrus to the EU and would alleviate the concerns about the risk posed to the EU's own citrus orchards in the Mediterranean region. Additionally, it would also be beneficial for importers within the EU. However, it would, naturally, limit the idea of a European free trade area. Additionally, EFSA stated that the technical feasibility of establishing endangered and non-endangered zones is low,

¹³⁴ Policies in other countries around the world:

–**New Zealand:** Declaration that the consignment has undergone appropriate pest control effective against *G. citricarpa* or sourced from an area free of *G. citricarpa*

–**Australia:** Citrus fruit may only be imported to South Australia if inspected and found free of CBS. Other states do not regulate *G. citricarpa*

–**Brazil:** Controls within the country regarding the spread of citrus fruit from regions with CBS to regions without CBS

–**India:** additional declaration required stating the fruit is free from CBS (EFSA, 2008, p. 85-86)

(South Africa's response: 'the existence of CBS regulations in other parts of the world does not automatically indicate that they are technically justified')

¹³⁵ U.S. Dep't Agric., Animal & Plant Health Inspection Service (APHIS), *Importation of Fresh Citrus Fruit from the Republic of South Africa into the Continental United States* (2014).

¹³⁶ EFSA Panel on Plant Health (PLH), *Pest Risk Assessment and Additional Evidence Provided by South Africa on *Guignardia citricarpa* Kiehl, Citrus Black Spot Fungus – CBS[1]- Scientific Opinion of the Panel on Plant Health*, 7(1) EFSA J., 96 (2008).

due to the challenges in controlling and monitoring trade between the two areas.¹³⁷ Although taking such a measure would certainly be challenging, protected zones do already exist in the EU, for example for restricting the spread of citrus tristeza virus.¹³⁸ If South Africa wishes to propose this as an alternative measure, it will be important for them to demonstrate how their exported citrus could be labeled and monitored, for example through controls and a traceability program, to avoid entering the endangered regions of the citrus-producing Mediterranean countries. They should give specific information on the actions that would be taken in order to show that it is technically feasible.

In combination with the concept of endangered zones as discussed above, it is important to limit exports of citrus fruit to the northern EU member state ports. Most South African citrus fruit consignments enter the EU through the northern member state ports, for sale in the northern member states (increasingly in the eastern member states as well). Some citrus fruit does enter through the southern member states, but this is largely distributed to the northern markets. Citrus enters through the southern member state markets for the economic benefits and convenience, although South Africa will perhaps cease exports to them soon.¹³⁹ Therefore, the probability that a piece of infected fruit would come into contact with a suitable host is quite low.

There are also other potential solutions to limit the presence of CBS but which are not practical for the situation. Nevertheless, it is still worth mentioning them for the process of elimination. One option would be the use of appropriate field (chemical) treatments to eliminate or prevent the fungus. However, there is currently no treatment that has been shown to fully prevent or eliminate CBS infections.¹⁴⁰ Additionally, it would hypothetically be possible to restrict imports to fruit with no symptoms in the field, but inspection procedures are insufficient and symptoms can develop after harvest.¹⁴¹ For this reason, EFSA suggested that

¹³⁷ EFSA Panel on Plant Health (PLH), *Scientific Opinion on the Risk of Phyllosticta citricarpa (Guignardia citricarpa) for the EU Territory with Identification and Evaluation of Risk Reduction Options*, 12(2) EFSA J., 136 (2014).

¹³⁸ Directive 2000/20/EC, Directive 2001/32/EC, Commission Regulation 690/2008, http://ec.europa.eu/food/plant/plant_health_biosecurity/protected_zones/index_en.htm

¹³⁹ S. AFR. CITRUS BLACK SPOT EXPERT WORKING GROUP, REPORT OF THE SOUTH AFRICAN CBS EXPERT WORKING GROUP ON EVALUATION OF THE PEST RISK ANALYSIS FOR CITRUS BLACK SPOT (GUIGNARDIA CITRICARPA) ON FRESH CITRUS FRUIT FROM SOUTH AFRICA TO THE EUROPEAN UNION (2007).

¹⁴⁰ EFSA Panel on Plant Health (PLH), *Pest Risk Assessment and Additional Evidence Provided by South Africa on Guignardia citricarpa Kiely, Citrus Black Spot Fungus – CBS[1]-Scientific Opinion of the Panel on Plant Health*, 7(1) EFSA J., 90 (2008).

¹⁴¹ *Id.*

South Africa apply methods to accelerate CBS symptoms to be used in a pre-entry quarantine system.¹⁴²

Unfortunately, diverting fresh fruit to fruit intended for processing leads to a major loss of revenue since fresh fruit is worth significantly more. For example, a box of fresh oranges is worth an average of \$13.89, and the price of a box of oranges intended for processing is \$7.76. A box of fresh tangerines or mandarins is worth an average of \$23.47, but a box intended for processing is worth only \$0.75.¹⁴³

VI. CONCLUSIONS

Uncertainty with regards to how science has to be interpreted at WTO level to justify SPS measures provides a leeway for dominant trading blocs to impose their domestic standards on smaller trading partners. We showed with the example of the citrus black spot dispute between South Africa and the EU that due to this uncertainty, the EU was able to *de facto* export its standards to South Africa, while South Africa challenges these standards as unjustified trade barriers. The current international trading system is hence not able to provide sufficient legal certainty with regards to questions on how data shall be interpreted to prevent such protectionist actions.

However, if applied, WTO law indeed has the potential to provide some certainty. Drawing on previous case law (*Australia – Salmon*, *Australia – Apples* and *Japan – Apples*) we could demonstrate that current WTO SPS law has the potential to govern these disputes in a way that provides some legal guidance: an SPS measure must be based on a risk assessment which establishes the likelihood that a pest or disease will enter, establish or spread in a new territory. As discussed above, there are good arguments to support that it is unlikely that *Guignardia citricarpa* will become established and spread in the citrus-producing, Mediterranean countries of the EU, and therefore, the WTO will likely rule that the EU's measures are not in compliance with Articles 5.1 and 2.2 of the SPS Agreement. Nevertheless, the WTO needs to provide further guidance and clarification regarding how to interpret data and whether the probability that a disease may become established must be a certain value to justify an SPS measure. Since this dispute remains

¹⁴² EFSA Panel on Plant Health (PLH), *Pest Risk Assessment and Additional Evidence Provided by South Africa on Guignardia citricarpa Kiely, Citrus Black Spot Fungus – CBS[1]- Scientific Opinion of the Panel on Plant Health*, 7(1) EFSA J. (2008).

¹⁴³ PLANT EPIDEMIOLOGY & RISK ANALYSIS LAB. CTR. PLANT HEALTH SCI. & TECH. ET AL., REV. 2, RISK ASSESSMENT OF CITRUS SPP. FRUIT AS A PATHWAY FOR THE INTRODUCTION OF GUIGNARDIA CITRICARPA KIELY, THE ORGANISM THAT CAUSES CITRUS BLACK SPOT DISEASE23(2010).

unresolved and similar 'battle of science' cases will likely arise in the future, it is important for the WTO to provide normative clarity on these issues.