

Bovine Growth Hormone, the European Union, and the WTO: International Trade and State Sovereignty

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Abstract

This case study explores the intersections of national and international governance in the lives of citizens by examining the European Union's ban of Bovine Growth Hormone. The World Trade Organization has ruled that the ban violates laws of international trade, and has levied millions of dollars in trade penalties against the E.U. to compensate the U.S. and Canada for losses in dairy and beef export revenues. To continue this discussion and support a resolution, the WTO's Dispute Settlement Body has called together a panel of experts to discuss their differing perspectives and opinions on this highly controversial issue. This case deals with issues of genetically modified foods; international trade agreements and the WTO; corporate accountability to issues of human health and global well being; and state sovereignty in the face of increasingly powerful global governing institutions and transnational corporations.

Introduction

Bovine Growth Hormone (aka Bovine Somatotrophin, BGH, BST, rbST, or bST) is a group of growth hormones given to about 30% of dairy and 90% of beef cows in the United States that increases in milk production and weight gain by ten to forty percent.¹ The use of these hormones has been approved by the Food and Drug Administration (FDA). However, the legitimacy and necessity of BGH is highly contested along moral, ethical, and political lines, and many argue that it poses a substantial risk to human and animal health. Some scientists have concluded that BGH increases risks of foot disorders, mastitis, and reproductive and digestive disorders in cows, creating "unnecessary pain, suffering, and distress."² Other scientists point to dangerous health consequences for humans associated with hormone-tainted dairy and meat products, including increased cancer risks, antibiotic resistance, allergic reactions, and premature pubescence in girls. All these risks are heavily debated both in the U.S. and the E.U., and frequently, because of incomplete or contradictory research, there is little clear scientific consensus one way or the other.

This case examines whether states can take steps to protect their citizens from possible but undetermined risks if those actions limit international trade. The E.U. has banned BGH on the grounds that it has the right to restrict the importation and sale of products that may have serious health consequences, arguing that "there is significant evidence to warrant a ban on precautionary grounds; and that the ban is consistent with its responsibilities under WTO rules."³ The ban on the use and importation of growth promoting hormones and hormone-treated products was first enacted in 1989.⁴ The ban was challenged on the grounds that the E.U. was violating WTO agreements and constructing illegal barriers to trade because BGH did not present enough of a threat to warrant a limiting its importation and usage. In 1996, the WTO set up a Dispute

Settlement Body (DSB) to examine complaints from the U.S., Canada, Australia, and New Zealand. In a series of 1997-8 hearings, the WTO examined whether or not the E.U. had violated the 1995 Sanitary and Phytosanitary Standards (SPS), the WTO body that regulates food safety in international trade. The SPS agreement prevents states from adopting “measures necessary to protect human, animal, or plant life or health” that would act as arbitrary restrictions on trade between WTO nations; it also maintains international standards of food safety that are enforceable within the WTO dispute settlement system.⁵ In this case, the DSB examined whether the E.U. had violated provisions of the SPS agreement that relate to risk assessment, domestic and international consistency, and product differentiation consistency. In 1998, the WTO appeals board ruled that the E.U.’s ban violated the SPS agreement because it was not scientifically justified in its risk assessment of BGH. As punishment, the WTO authorized the U.S. and Canada to impose 100% *ad-valorem* tariffs on imported European delicacies equal to estimated financial losses of American cattle and dairy exports: \$116.8 million per year for the U.S. and \$11.3 million per year for Canada. Despite these stiff economic penalties, the E.U. has refused to alter its position against BGH because of scientific evidence against the product’s safety and strong public support for the ban. Both the ban and the tariffs remain in place today.

Dispute settlement within the WTO is a complicated and highly strategic process. The DSB is made up of ambassadors from representative governments. When a country appeals to the WTO regarding a trade dispute, a panel is created of 3-5 country representatives and experts who consider evidence and determine action. Their report is then passed on to the DSB, who accept or reject the panel’s conclusions by consensus.⁶ This case takes place at a DSB meeting at the WTO headquarters in Geneva, Switzerland. In a stylish conference room inside the WTO’s sprawling compound, members of the DSB sit behind an imposing oak table and face four nervous experts who have been invited to discuss the BGH ban with the DSB. The meeting is informal, but all parties involved know that the stakes are high. The E.U. has recently petitioned the WTO appellate body to reconsider their case and reduce or remove the heavy tariffs levied against European products sold in the U.S. and Canada. In the U.S., awareness about BGH and other genetically modified foods (GMO’s) is growing, and there is mounting public concern about the safety of these food products and veterinary drugs. All parties involved are aware of pressure on them from various interests at home, and are eager to convince the WTO board of the validity of their position and the future they see for BGH and GMO’s.

Two men at the center of the table glance at each other, then stand and address their attentive audience. “Members of the Dispute Settlement Body and honored guests from both sides of the Atlantic, welcome. I am Paul-Henri Ravier, France’s ambassador to the WTO.” He solemnly places his hands on the table as his neighbor begins to speak. “And I am Robert Zoellick, the United States’ ambassador to the WTO. Thank you all for coming. Your statements today will be invaluable in guiding our next recommendation to the entire Dispute Settlement Body next month. We all know this is a dense, complicated, and at times seemingly contradictory case, and we rely on you as experts in

your academic and professional fields to help us sort out the details. We all know the background of the case, so let's begin. Ms. Limoli, why don't you start us off?"

Michelle Limoli

"Thanks Bob." The petite red head looks down at her notes one more time and then smiles around the room. "Hi, everyone. I'm Michelle Limoli, and I work in the Food and Drug Administration's Office of International Programs as the Associate Director for the European Union. We've been paying attention to Bovine Growth Hormone's use both in the United States and abroad since the 1980's, and we continue to monitor the issue for new developments. For the moment, I would like to put aside the complicated trade issues associated with BGH and the E.U.'s 13-year-old ban, and concentrate on why the FDA firmly maintains that BGH is a safe and beneficial product for humans and animals alike. Meat and dairy products from BGH-treated cows are completely safe for human consumption. The FDA and its counterpart office in Canada, the Health Protection Office, firmly believe that there is 'no significant risk to human safety through ingestion of products from rbST-injected animals.'⁷ Countless studies have found insignificant risks of cancer, antibiotic resistance, and allergic reactions.

"BGH products are harmless to humans for several reasons. First, Posilac, the synthetic BGH that is injected into cows, is biologically indistinguishable from naturally occurring BGH. People who are nervous about drinking so called 'bio-tech' milk cause because of the BGH had better stop drinking milk and eating their hamburgers completely, because they consume the same hormones even in completely organic foods. Second, BGH is a protein, which means it is broken down by the digestive system and never absorbed; that's why cows have to be injected with it and can't simply take it as a dietary supplement. Third, over 90% of BGH is destroyed in the pasteurization process.⁸ And finally, BGH is biologically inactive whether injected or taken orally; it is not similar enough to human growth hormones to have any effect even if it were injected into our systems!⁹ I'd also like to talk for just a moment about Insulin-Like Growth Factor 1, or IGF-1. It's a natural byproduct of BGH, part of the cow's natural chain of hormonal reactions, and it will undoubtedly be brought up later this afternoon by my more critical colleagues. IGF-1 is a growth hormone that is found in identical form in humans and in cows. It appears the IGF-1 levels increase when cows are given BGH, though this is certainly far from scientifically proven. There have been several recent studies showing trends of correlation – *correlation*, not *causation* – between elevated IGF-1 levels and some cancers; the evidence is far from convincing. But IGF-1 is also orally inactive, and 'the vast majority of the published work indicates that very little IGF-1 is absorbed following digestion.'¹⁰ Furthermore, our studies indicate the levels of IGF-1 absorbed from products from cows treated with BGH are only between one percent and one *tenth* of one percent higher than they would be with no added BGH. 'The low level and non-toxic nature of the residues of these compounds, even at exaggerated doses, result in an extremely large margin of safety for humans.'¹¹ Clearly, IGF-1 is not really of concern.

"The FDA is serious about BGH. We studied it thoroughly before approving it, and have conducted and analyzed many studies since then. Our initial research found no

significant reactions and no proof of systematic absorption of BGH in test subjects, and we are fully satisfied that it proves BGH is effective for its approved uses and causes no safety concerns for human or animal health.¹² Many international organizations share our support for BGH, including the Joint Food and Agricultural Organization and World Health Organization Expert Committee on Food Additives, the EEC Scientific working Group on Anabolic Agents, the Codex Committee on Residues of Veterinary Drugs in Foods, the American Council on Science & Health, the Institute on Food Science & Technology. These are just a few of the groups that stand behind us in supporting the use of BGH to increase milk production. Why would we approve a veterinary drug that we knew or even suspected to be harmful? There is *no* conspiratorial agenda behind our approval process. The FDA approves products because we firmly believe and because the body of evidence proves that they are safe and effective; the BGH case is no exception.

“But this case isn’t just about hormones, or even just about the genetically modified foods that are so feared by the European community. It is about the larger issue of free trade on which our international markets so fundamentally depend. The ban on BGH has hurt American corporations as well as American dairy farmers. Companies like Monsanto have the right to sell their products on the world market, and limiting their right to do so violates their access to markets and their international trade rights. Corporations like Monsanto are very powerful bodies in the U.S. and do a lot of good around the world. Monsanto is active in programs to end world hunger and disease through the development of biotech foods. Corporations are a key part of the American economy, through the taxes they pay and the workers they employ. The E.U.’s ban has severely limited Monsanto’s markets and stripped them of millions of dollars in potential profits. This is bad for Monsanto and is bad for the American economy. BGH is also good for individual consumers. It makes more milk available at lower prices; that’s good for consumers. It is estimated that in the first six years of BGH, milk prices dropped by two percent, while milk production increased by more than that.¹³ WTO trade agreements guarantee important trade rights to member countries, and bind governments to trade policies in ways prove to be beneficial for all by reducing the costs of production and finished goods. Consumers have more freedom of choice between all the products available to them at lower costs and working families do not have to pay higher prices.

“I firmly believe that the E.U. ban is not about protecting consumers from the dangers of ‘Franken-foods.’ It’s about protectionism and strengthening trade barriers, even erecting new trade barriers, to benefit domestic markets. It wasn’t until after the WTO decision in 1998 that the E.U. began to raise questions of human and animal safety within the international community. Just two years earlier, in 1996, the European Commission, and here I quote, ‘concurred... that rBST was a safe product, but indicated that the moratorium measures taken with respect to rBST were based on internal quotas and consumer protection concerns.’¹⁴ This is very far removed from their current arguments about the health and well being of humans and animals. There’s nothing intrinsically harmful about BGH, but there’s something frighteningly destructive about these protectionist trade barriers, and I implore the members of the Dispute Settlement Body to keep that in mind. Thank you very much.”

“Thank you, Ms. Limoli, for your comments.” Robert Zoellick looks over his notes for a moment, then glances around the room again. “I can tell already that consensus on this issue is hard to come by.” Several snickers reverberate off the wood paneling, and sympathetic eye contact makes its way around the group. “Well, in no particular order... what the heck, let’s have the other American go next, shall we? Mr. Schroeder, the floor is yours.”

Glen Schroeder

“Well thank you much, Mr. Zoellick, Mr. Ran-vi-er. I sure do appreciate your hospitality. This is a grand place you’ve got here.” A pair of weathered hands lifts a striking cowboy hat from its perch atop his bald spot, and lowers it slowly to his lap. The hands stay there, fingering the black leather along the hat’s rim. “My name is Glen Schroeder, I’m from Minnesota, and back home I’m Chairman of the Midwest Dairy Association. Our organization represents nearly 17,000 dairy farmers in nine midwestern states, accounting for nearly 20% of all U.S. dairy operations.¹⁵ So I hope you’ll allow me to speak for U.S. dairy interests in broad terms. As a group, we use Posilac, the brand of BGH we buy from Monsanto, in about a third of our cows, and most of us strongly support BGH’s place in the dairy industry. Posilac was very well researched before it was put on the market. Monsanto spent over \$300 million to create and market it, and ‘it has been studied more than any other animal drug.’¹⁶ BGH is a ‘protein hormone produced in the pituitary gland ... and is essential for normal growth, development, and health maintenance.’¹⁷ All farmers do is to add in a little extra to stimulate the cow’s mammary glands so she’ll give us a little more milk.

“Dairy farmers love our cows dearly, and would never purposely do anything to harm them. I’ve heard that some farmers do notice increased rates of mastitis. But according to statistics we get from the FDA, ‘any increase in mastitis that may result from use of bST is insignificant compared to the increase in mastitis that occurs normally for other reasons, such as seasonal variation, extremes of weather conditions, age of the cow, and stage of lactation.’¹⁸ Mastitis is an inflammation of the udder where puss gets into the milk. The milk then has to be destroyed. So why would we use BGH if it ruined our milk? Just wouldn’t make sense. Basically, it all comes down to responsible farming. People talk about the dangers of over-injecting BGH, or over-using antibiotics to compensate for weakened animals. Those are both possible, and both would have negative consequences for the animals and probably for the milk-drinking, cheese-eating public. But you have to give us dairy farmers credit; we love our animals and love what we do, and irresponsible farming and misusing products like BGH just doesn’t make sense to us.

“BGH is good for farms and farmers alike. Since cows produce more, herd sizes are likely to drop, leading to reduced water and air pollution, less manure and methane, fewer pesticides for feed production, and less soil erosion.¹⁹ And hormones are great for farmers. Anything that makes us more efficient is good for business. We can increase milk production between 10 and 40%,²⁰ and because it doesn’t require any fancy

machinery or advanced technology, it increases the productivity and profits of small and large farms alike.²¹ And believe me, profits and productivity are something we dairy farmers sure get excited about. Why, just this last year I started using BGH on every one of my 14,215 dairy cows, and I can't wait for my accountants to pull up my productivity gains at the end of the month.

“But the farming life is hard sometimes, and it's easy to get lost, feel overwhelmed by big business. For a lot of us dairy farmers, our family businesses are *family* first, *business* second, and we care about what we produce and want our customers to be happy. You talk about the *rights* of consumers, but what about the *responsibilities* of producers? Just as dairy farmers have the responsibility to look after the people who drink our milk or eat our cheese and respond honestly to any problems they have, a company like Monsanto should have to respond to us and look after our interests as consumers of their products. Now, don't get me wrong, on the whole we're very satisfied with Posilac and have little to complain about, but I've heard a few too many stories from my friends and my neighbors about their experiences with Monsanto that make me question their ethics of corporate responsibility. I've heard too many stories of Monsanto officials playing down, disguising or trying to cover up the adverse effects of BGH by telling farmers it's their fault, not the drug's.²² A lot of us are simple folk, and we're just trying to support our families and provide for our great-great grandkids long after we're gone, and it's not too much to ask for a little corporate responsibility, to make the big guys take care of us and respect us more than they do.

“Finally, about the European Union ban on imports: we're just as opposed to the tariffs as any European would be. It makes no sense to line the government's pockets through taxes on Bordeaux wine and designer Italian pasta sauce when it's U.S. dairy and beef farmers that are suffering. We don't want tariffs; we just want to be able to sell you our cheese. Thank you all very much for your time and your attention.”

“Thank you Mr. Schroeder. It's great to hear from someone who's so passionate about his job,” Mr. Ravier says, smiling. “With every perspective we encounter on this issue, our decision becomes more complicated and more personal. Thank you. Well,” he says, looking over at Mr. Zoellick, “Shall we move on to our European friends? Welcome, Mr. Slorach.”

Stuart Slorach

“Thank you.” The tall, angular man brushes his thick blond hair off his forehead and begins to speak. “My name is Stuart Slorach, and I represent Sweden in the European Union's governing offices. I am also the Chair of the E.U.'s European Food Safety Authority, a program established just this year to provide a comprehensive, coherent scientific basis for regulating the food industry.²³ I'll be blunt: BGH is a horrible product. It is dangerous for human health and even more dangerous for bovine well being. Monsanto's Posilac label lists over 20 bovine health problems, ranging from udder infections to calving irregularities, lameness to the increased need for antibiotics.²⁴ Ms. Limoli and Mr. Schroeder, when you defend the use of Posilac, the only thing you're

fighting for is corporate profits. And when you fight the ban we have put in place to protect our citizens, you're fighting for corporate expansion and monopoly. Only 5% of U.S. dairy exports before the ban went to the E.U.,²⁵ a tiny fraction of the industry as a whole, a fraction that would make only miniscule differences for dairy farmers. But marketing BGH-products to millions of E.U. citizens, and Posilac to thousands of European farmers would make a huge difference for a company like Monsanto with a monopolistic patent on a drug that is both powerful and dangerous. And that is the essence of this case: corporate power and profits.

“Posilac and BGH are not things we want in the E.U. I'll leave the persuasive and alarming discussions of animal and human well being to my counterparts in the E.U.'s Scientific Committees on Animal and Human Health and Welfare. However, there are many other reasons we will fight to keep BGH and BGH-products out of our markets. First of all, in Europe we fight to keep alive the vibrancy of our small, family owned farms, and as we've seen in America, BGH is bad for the small farmer. It is true that BGH requires *less* specialized machinery and demands *less expensive* purchases than other inventions to increase efficiency in the dairy industry. However, large farms will still benefit over small farms because of concentrated feed purchasing, antibiotic purchasing and administration, and the sensitive computerized monitoring necessary to care for cows treated with BGH.²⁶ Also, as supporters of Posilac admit, the drug will increase the milk surplus as it increases efficiency of production. ‘Even a small increase in milk surplus causes a big decline in family dairy farmers’ incomes.’²⁷ Like the U.S., the Union has milk surpluses, and our quotas for milk production keep supply and demand, and thus price, in balance to benefit producers and consumers alike. The U.S. spends over \$510 billion a year on agricultural price supports, and the increase in milk production because of BGH requires an additional \$150 million a year increase in dairy subsidies. It just doesn't make sense: we don't need the extra milk, so why pay for it? Returning to the individual farmer, the injections themselves, at around \$150 per cow per year, are not the only costs that must be absorbed by a family farmer now receiving a lower price for his milk: cows treated with BGH require more food, more medicine, and more antibiotics than cows not treated with BGH.²⁸ Posilac is not as economically beneficial for dairy farmers or as good for production as Monsanto would like to have us believe.

“Now I'll turn to policy. I firmly believe that states have the right, even the *obligation*, to protect their citizens. We don't know enough about GMO's in general, or about BGH-products specifically, to understand the risks of consuming them, and know whether those risks are worth taking. The FDA in America has said that these risks are ‘manageable’²⁹ but we beg to differ. We just don't know enough, and we refuse to risk the health and well being of our citizens just to further corporate profits. The ‘precautionary principle’ in governing is a risk management strategy that ‘covers cases where scientific evidence is insufficient, inconclusive, or uncertain, and preliminary scientific evaluation indicates that there are reasonable grounds for concern.’³⁰ When the risk is uncertain, the action shouldn't be taken. This case warrants, even *demand*s that severe and immediate precautionary measures be taken. This BGH debate seems to echo the more complicated debate of state sovereignty in our increasingly global age. What

will be the role of states or federations fifty or a hundred years from now? What will be the role of international institutions of trade, finance, and government? I do not know, though the possibilities sometimes scare me. However, I firmly believe that states have a duty to their citizens, that they are obligated to care for them, and that they should have the capacity to protect their citizens from things they genuinely believe to be harmful. Today, the WTO tells us that we don't have that right, that we cannot 'wait until the product has been proven safe to ensure the ultimate safety' of our citizens.³¹ It astounds me that like the U.S. countries have become so driven by agents of corporate greed that they willingly fight for corporations' right to sell above citizens' right to live. This case does not just address BGH; this case questions the very right of states to govern, to protect their citizens. Nations must be able to pledge with complete honesty their commitment to fighting for the best interests of their citizens. Those interests must prevail above corporate interests. Ladies and gentlemen, thank you for your time."

"Thank you very much, Mr. Slorach," says Mr. Zoellick. "You raise interesting points that affect not only your own argument but those of the previous speakers. We greatly appreciate your contributions. Now shall we move on to our last speaker of the day? Everyone's patience and attention is appreciated," he adds, sipping from his fourth cup of coffee. "Mr. Bristol, welcome."

Eli Bristol

"Thank you so much, Bob and Paul. It is truly a pleasure to be here." With a thick but controlled London accent, Eli Bristol seems to overflow with intelligent optimism. "It's been just delightful listening to these presentations. It's thrilling to be a room with so much passion and yet so much disagreement," he says smiling. "My name is Eli, and I'm the Head of International Operations at Real Food Now, or RFN for short, a non profit out of London. We're waging a fast-paced, uncompromising campaign against genetically modified foods and their mother corporations around the world, but especially, and I apologize to our friends Ms. Limoli and Mr. Schroeder, against the huge transnational biotech firms in the States. Let me begin with a discussion of some of the evils of Bovine Somatotrophin, rbST, BGH, what ever you call it. America is increasingly alone in supporting BGH: in 1999, both Canada and the UN's Codex Commission either withdrew or refused to give their support for BGH, citing contradictory and incomplete scientific research with regard to human health risks, and overwhelming scientific evidence as to the suffering it caused in animals.

BGH should never have been approved by the American FDA in the first place. Posilac's approval was based mostly on unpublished Monsanto studies that championed the safety of hormonal milk but that were never available for public scrutiny.³² But even those studies could not give BGH a clean bill of health; rather, they found that BGH produces *significant* biological effects.³³ Between 20 and 30% of test subjects 'in the high dose group developed primary antibody responses to rbGH, suggesting it was being absorbed into the bloodstream.'³⁴ Since that study, the FDA has repeatedly ignored evidence and scientific publications that have gone against its support of BGH. The FDA group that ultimately decided the fate of Posilac should have been immediately discredited for its close relationship to Monsanto; the official who developed the labeling system for

BGH products worked for Monsanto both before *and* after his stint with the FDA.³⁵ It seems unlikely, given the FDA's shoulder rubbing with corporate power, and their blatant disregard for vast amounts of convincing scientific evidence against BGH, that the FDA had the interests of the American population in mind.

“But now let me turn to the actual, scientifically proven evils of BGH. BGH is undeniably harmful to animals treated with it. Scientists have cited a 25% increase in mastitis, 18% increase in infertility, 50% increase in lameness, and 20-25% increase in culling from the herd.³⁶ BGH has been definitively correlated with high rates of twins, cystic ovaries, and uterine disorders; with decreases in gestations periods and birth weights; and with digestive and physical ailments ranging from indigestion to enlarged lesions on the knees. Faced with this evidence, how can anyone argue that BGH does not harm cows? And what of the risks to human health? The World Health Organization has recently reported findings that link BGH with susceptibility to Mad Cow Disease, one of the great paranoia-inducers of the last decade.³⁷ There is also a very real possibility of antibiotic resistance and allergic reactions. But let me focus on the carcinogenic nature of BGH and its byproducts. Ms. Limoli spoke earlier about a dangerous substance, IGF-1, and I'd just like to fill in some of the holes in her story. IGF-1 is a naturally occurring chemical that stimulates abnormal cell growth and prevents natural cell death. Normally IGF-1 would be broken down in the stomach, as Ms. Limoli said, but ‘the presence of casein in milk prevents this.’³⁸ Elevated levels of IGF-1 have been linked to a seven-fold increase in breast cancer³⁹ and a four-fold increase in prostate cancer.⁴⁰ And though some IGF-1 is destroyed in pasteurization, even Monsanto has admitted that IGF-1 levels in milk are substantially elevated in BGH-treated cows.⁴¹

“The problems with BGH and the debate it has created point to a larger sea of turmoil and confusion surrounding GMO's in general. In the U.S., producer of 72% of the world's biotech food,⁴² about two thirds of processed foods contain GMO ingredients.⁴³ Critics of GMO's, and I openly declare myself to be one, describe biotech foods as ‘one of the most reckless ventures of modern science, threatening to unleash new plant and animal species that could damage both human health and the environment,’⁴⁴ and ‘increase resistance to pesticides or transform the genes of wild organisms.’⁴⁵ Proponents of GMO's say they may end world hunger; but hunger is caused by poverty, and those in poverty will be just as unable to buy GMO seeds as normal seeds. They argue that GMO is a misleading term, because even so-called conventional products have been altered through crossbreeding or cross-pollinating; that GMO corn is just corn, so it shouldn't be labeled any differently. But any corn so specific and so man-made that it requires a patent is not ‘just corn’ and should not be labeled as such. Consumers want to be able to distinguish between GMO and non-GMO; survey after survey shows support for labeling over ninety percent!⁴⁶ Organizations like RFN and individuals like myself are fighting against the transnational GMO giants, against the presence of these Franken-foods and the very real and imminent danger they pose to us and our quality of life. Our debate is part of something larger; BGH is indicative of a looming threat to our way of life. I urge you all to address it with the severity and solemnity it demands. Thank you.”

“Members of the panel, thank you. You have broadened our understandings and raised new and important issues for us to consider in deciding this case. We appreciate the time and energy you put into your statements today, and we will take them into account as we continue our settlement process.”

Discussion

Role Play Suggestions

- 1) Have students assume the four roles outlined in this case study, present their arguments, and debate among themselves.
- 2) Have students assume the role of members of the Dispute Settlement Body that just listened to these four opinions. Have them debate whose position is the most valid, and decide what they would do were they confronted with deciding this case.

Questions for Consideration

- 1) What are the main arguments of each role?
- 2) What are the strengths and weaknesses of each argument?
- 3) What holes does each role present? How are those responded to, or how would they be responded to by other roles?
- 4) What solutions does each role offer, or what solutions might they agree with?
- 5) Where do the roles agree/disagree?

And more generally...

- 6) Genetically Modified Foods
 - a. Do GMO's have a place in our world?
 - b. Who benefits? Will they help decrease world hunger? Will they further corporate profits?
 - c. Are they biologically dangerous?
- 7) Corporations
 - a. What kind of responsibilities do corporations have to consumers and to world citizens?
 - b. Where can or should the government step in to regulate corporations or force changes?
 - c. What responsibilities do consumers have in the larger global order?
- 8) National and International Governance
 - a. How much power do states today have compared to international governing bodies? Does it vary between states? Why?
 - b. Where does the power of a state stop and the power of international organizations like the WTO begin? Vice versa
 - c. What happens when there is a conflict between national and international laws or regulations? Who has the power to decide? In cases of economics... trade... human rights... environmental issues...
 - d. What does the future hold for different governing bodies?
 - e. How do states relate to each other within a framework of international law?

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- ¹ “The Hormones in Beef.” *The Post*. May 1999, page 1.
- ² “Report on Animal Welfare Aspects of the Use of Bovine Somatotrophin of the Scientific Committee on Animal Health and Welfare.” European Union. March 10, 1999. p. 76.
- ³ *Ibid*.
- ⁴ “The Hormones in Beef,” p. 1.
- ⁵ “Agreement on the Application of Sanitary and Phytosanitary Measures.” WTO document. http://www.wto.org/english/docs_e/legal_e/15-sps.doc. Viewed 12-08-02.
- ⁶ The World Trade Organization home page. www.wto.org/english/tratop_e/dispu_e/dispu_e.htm. “Dispute Settlement.” 2002. Viewed 12-06-02.
- ⁷ *Natural Life Magazine*. No. 66 March/April 1999. “Canadian Government Refuses to Approve BGH.”
- ⁸ Mandala Projects. “Bovine Growth Hormone and Dairy Trade.” <http://www.american.edu/TED/bst.htm> American University. May 1997. Viewed 12-6-02
- ⁹ Doyle, M. Ellin. *Scientific Literature Review*. “Human Safety of Hormone Implants Used to Promote Growth in Cattle.” July 2000
- ¹⁰ FDA. “Report on the Food and Drug Administration’s Review of the Safety of Recombinant Bovine Somatotrophin.” Feb 10, 1999. <http://www.fda.gov/cvm/index/bst/bst.htm>
- ¹¹ FDA. April 13 Addendum. <http://www.fda.gov/cvm/index/bst/bst.htm>
- ¹² Doyle, 2000.
- ¹³ Monsanto. “Use of Bovine somatotrophin (BST) in the United States: Its Potential Effects.” http://www.monsantodairy.com/about/general_info/fed_govt.html. 2002. Viewed 12-06-02
- ¹⁴ Brickman, Dirk. “The Regulation of rBST: The European Case.” *AgBioForum*. Vol 3, N 2 and 3. www.agbioforum.org/v3n23/v3n23a15-brickman.pdf p 167-8.
- ¹⁵ Midwest Dairy Association home page. <http://www.midwestdairy.com/content.cfm?CategoryID=114>. “MDA Facts.” 2002. Viewed 12.08.02.
- ¹⁶ Monsanto, 2002.
- ¹⁷ FDA, 1999.
- ¹⁸ Scott, Donna L. “bST Fact Sheet.” US FDA. June 6, 1995. <http://vm.cfsan.fda.gov/%7Eear/CORBST.html>. Viewed 12-06-02.
- ¹⁹ Scott, 1995, Monsanto, 2002.
- ²⁰ Scott, 1995.
- ²¹ Monsanto, 2002.
- ²² Kingsnorth, Paul. “Bovine Growth Hormones.” *The Ecologist*. Vol 28, No. 5, Sept/Oct. 1998.
- ²³ European Union’s Food Safety Authority home page. 2002. Viewed 12-08-02. <http://www.eurunion.org/legislat/Foodstuffs/EFSA.htm>
- ²⁴ Lloyd, Richard, and Forsey, Helen. “Cows on Steroids? No Thanks!” *Natural Life Magazine*. #63 Sept/Oct 1999.
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- ²⁶ Scott, 1995.
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