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Final Essay

Recombinant Bovine Growth Hormone

As more information becomes available about Recombinant Bovine Growth Hormone (rBGH) and its consequences, and as people engage in dialog regarding this issue; the degree of risk perceived by consumers has been increasing, and as a result, the purveyors of agribusiness have been forced to reexamine their marketing strategy to accommodate this shift in consumer preference. Recombinant Bovine Growth Hormone has been considered a safe part of the production of milk for human use, particularly by large corporations like Monsanto and by research scientists (Collier), however consumers are apparently not so willing to accept this concept of no risk.

When dealing with risk, people may tend to make judgments based on emotional or fearful perceptions; the nature of which may vary from person to person depending on personality and the focus of their formal education (Grobe 272). This translates into more of a qualitative assessment rather than a rigid mathematical analysis. Irregardless of the predominantly qualitative perceived risk, there exists a quantifiable true risk, and whatever size it may be, it does exist. Three aspects of the risk of rBGH are the perceived risk, the actual risk, and the idea of lack of risk, as powerfully promoted by agribusiness ad campaigns. The actual risk of the use of rBGH, however, may not be the same as the perceived risk (Grobe 258-260).

The way people deal with risk depends on how it fits into their estimation of how much control they have over the particular risk in question (Dupuis 291). If this risk is viewed as part of a cultural interaction that must be, then people are more likely to become adamant in their refusal to accept that risk. This appears to have happened with the consumption of milk and the perception of risk, direct and indirect, from genetically altered hormones used on cows that produce the milk.

The risk involved with genetically engineered substances was brought into the public eye in 1989 when it was discovered that people became very ill from taking L-tryptophan, a naturally occurring amino acid, produced in high quantity by using genetically altered bacteria. After much investigation the company that produced the tainted supplement was not held accountable; but the uncertainty about genetically modified organisms (gmo's) remained (Boyens 100-104).

Recombinant Bovine Growth Hormone, also a genetically altered substance, has been used to increase the production of milk in dairy cows; but has become widely perceived as presenting unacceptably high heath risks to people. Risk perception regarding rBGH may also be due in part to some facts about somatotropin, which is responsible for milk production and growth in mammals including humans and cows. This hormone differs significantly between humans and cows, and the bovine form, Bovine Somatotropin (BST), is present in the milk produced by cows. The hormones that make up BST have been known for some time; however, to mass produce the hormone in a cost effective way requires the use of genetic modification (Krimsky and Wrubel 167). This adds some risk with a magnitude as yet unknown. As large biotechnology companies started to get into the business of patenting living tissue and genetic material, this hormone became a focus for the Monsanto company, most likely because of the enormous market. People need to eat, and many people consider milk an undeniable part of a healthy diet (Butler). BST is the precursor to (rBGH), the synthetic form derived from manipulating DNA through genetic engineering.

Another aspect of the risk perception regarding rBGH is connected with the need to use antibiotics on cows that have developed infections in their udders due to the unusually high production of milk as a result of being pushed to produce more by rBGH. The antibiotics may be just as harmful, and possibly more harmful than rBGH, because bacteria develop immunity to antibiotics due to the high amount of antibiotic treatment that is necessary to keep the cows, and milk free of disease. So the indirect risk becomes much higher when antibiotics stop working because of overuse in cows (Epstein 1).

BST has been studied for over 50 years, but has not been used commercially until very recently, when companies like Monsanto developed a process to manufacture it through genetic engineering and then calling it rBGH (Krimsky and Wrubel 167). In spite of the relatively unknown consequences of use, Monsanto did everything in its power to push through the approval of the drug by the FDA; they had a lot to gain as their total income in 1996 was $885 million dollars largely due to their genetically engineered products (Boyens 52).

The milk produced with the aid of rBGH has been declared the same as the milk produced without it by the FDA (Boyens 76 -78) even though the hormone is genetically engineered and consequences of use are unknown (Boyens 75). The FDA was pressured indirectly by Monsanto through universities, the NIH, the AMA and others to get BST approved. The results of this were not financially beneficial to many small farmers. Partly due to the pressure from agribusiness many small family owned and operated dairies in Wisconsin were going out of

business rapidly in the early 90s. There was even a White House government sponsored study that predicted over thirty percent of american farmers would be put out of business by the introduction of the use of BST (Boyens 83).

As people have become aware of rBGH and its possible and documented negative effects, including the loss of small farms, another phenomenon has appeared. Consumers have started to buy only organic milk produced without the aid of hormones. In fact, the growth of the popularity of organic milk has got the attention of agribusiness and they are doing all they can to capture the market on organic milk (DuPuis 285). As is to be expected; not all milk is completely organic and regulations in the early 90's were not standardized so there are large corporate farms that push the limits of keeping the milk they sell honestly organic (DuPuis 286). The use of brand names and clever marketing campaigns taking advantage of peoples fear, uncertainty and doubt, to induce loyalty continues, as their customer base continues to increase (DuPuis 287).

There are socio-political implications which tend to absolve the consumer from the responsibility of actually making an individual choice, and tend to put even highly informed, highly educated people into the herd mentality classification when it comes to choosing milk. The organic milk choice becomes a way to attain a feeling of being special by choosing the same product as your enlightened friends (DuPuis 288). People with an agenda become involved in groups who speak out strongly in favor of organic foods, and non-rBGH milk, and these groups tend to influence other people to join their group and its collective attitudes (DuPuis 289). Consequently, the media picks up on this and adds to the momentum by capturing the attention of people who feel strongly about the same issues; in this case non-rBGH cow's milk and the risks involved with rBGH, as illustrated by Mindfully.org and indymedia.org posting information about Tillimook's battle with Monsanto over their exclusion of rBGH in their products as a result of overwhelming customer feedback (mindfully.org) (North).

People see milk as a requirement in their diet; a tradition so to speak, something they must do to feel as though they are ok with the healthy diet mentality. Discovering that there may be a health risk with something over which they see as having little choice about, may make consumers demand organic milk free from the influence of genetically modified hormones (DuPuis 291). As a result of all this, agribusiness has run up against a financial brick wall created by its own greed. Their business strategy of pushing to produce more milk using biotechnology and selling more of it to the public by using the media and advertising to build upon the cultural value of milk as an important part of

diet has backfired. People don't want the mass produced, hormone induced risky milk of the high tech dairy industry, they want down home farm milk, with wholesome goodness from nature. So, the profit driven mega-corporations have changed their tune and devised new marketing plans centered around three areas of cultural lifestyles that have emerged. One is the home town small farm friendly neighbor genre. Another is the customer is always right attitude; and yet another is the idea that a farming community is what we need and more small farms are really good for our country (DuPuis 291). These are the market niches the agribusiness giants are after, now that organic milk is in demand, and their marketing focuses on the consumers in these groups.

Different areas of the country require slightly different strategies, but the move is on with corporate power pushing hard on the limits of consumer demand. There are two large cooperatives that have formed as a result of this. One is CROPP, (The cooperative Regions of Organic Producer Pools). They are behind the "Organic Valley" brand (Powell). Another is Topco, a group of about 50 different organizations; some not necessarily focusing on organic foods. This organization is behind the "Full Circle" brand(Topco)(FullCircle). The consumers they have targeted are highly informed and acutely aware of business practices. If a company is cutting corners and not following strict standards, people find out quickly (DuPuis 293). This may be due to the instant communication now possible through the use of the internet, or actual social networks that are watching the every move of the food industry in general, or both. This awareness crosses international borders. As of the late 1990's there was a ban on bovine growth hormone use in Europe and Canada. In fact, in Canada over 350 organizations 100,000 people voiced their approval of continuation of the ban. The pressure is still on, however and corporations continue to put pressure on government officials to change the laws in favor of allowing the use of hormones (Forsey and Lloyd). Ironically, a professor at the University of Illinois medical center in the U.S. ,where the hormone use is legal and approved by the government, pointed out that evidence from the study of breast cancer patients who consumed rBGH tainted milk, overwhelmingly demonstrates that elements of rBGH are present in the blood of these patients at levels above normal (Sibald 677)(Epstein). Also, prostate cancer has been associated with the rBGH agents such as IGF-1, a chemical related to insulin growth factor (Foresy and Lloyd). These facts have been hotly disputed, however, by Robert J. Collier from the University of Arizona, and Dale E. Bauman, from Cornell University (Collier 876). In spite of their eloquent scientific argument, it should be noted that Robert Collier owns stock in the Monsanto company and

receives money from them to do research; and Dale Bauman serves as an adviser for Monsanto (Collier errata)(Bauman 78 79). This situation casts a shadow of suspicion on their research and their attempt at showing little risk in the use of rBGH.

The perception of risk is a complicated aspect of human behavior as illustrated by a study regarding the perceived risk of the consumption of milk containing rBHG. The study was a telephone survey done in the U.S. from the University of Wisconsin-Madison. The results were interpreted with the help of a computer program able to manipulate multi-variable statistical information. This program uses an algorithm called "multinomial logit analysis". This algorithm analyzes characteristics like choices by assigning different numerical values to types of choices in its analysis of data (Grobe 264). The study found that poor people do not have much chance of choosing to avoid rBGH . Gender, age, and personal life situations influencing overall attitude also influence the nature of risk avoidance regarding rBGH. The study confirms what one might assume; that risk avoidance is a very complex behavior and that the degree of awareness has a significant effect on choice (Grobe 273). At the speed information travels, most people who take time to read, were probably aware that this hormone was banned in some countries. This in part could have also contributed to perception of risk, particularly to even mildly health conscious people.

There are risks involved with the use of rBGH. These risks affect both cows and people. There are perceived risks that often change with the social and political climate. We can be sure that we do not know all there is to know about the long term effects of this engineered substance; and it is certain that some people at Monsanto make lots of money selling this product and its associated research; and they are willing to circumvent the truth if they want to. If honesty, good health, and relatively safe food are important, then rBGH should not be used to influence the production of milk.

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