Bion and the Prevention and Control of Cattle Borne Disease

Some in the community have raised the issue of cattle diseases as an objection to Bion's proposed integrated cattle finishing / processing / renewable energy project. Bion has arranged for an internationally recognized cattle expert, Dr. Keith DeHaan, to respond to a series of these questions on the topic as posed by Oswego County Farm Bureau. Those questions and Dr. DeHaan's initial responses are contained in a memo attached to the end of this posting for review by all stakeholders. Later Bion also arranged for Dr. DeHaan to meet in person with the County Farm Bureau on November 12, 2009, during which meeting he further addressed questions and concerns explaining how cattle disease risks have been successfully overcome at large cattle facilities throughout the U.S. over many years.

The reality is that there are feedlots in the U.S. of the size proposed by Bion and many much larger. Very large concentrations of cattle such as these would not exist if diseases were a significant threat. Personnel experienced in large cattle operations understand that there are protocols and procedures to directly address what small risks do exist and they have been successful in controlling them --starting with an understanding of the nature of cattle diseases.

When people talk about cattle diseases they usually start with what is considered the "big two": foot and mouth (FMD) and Bovine Spongiform Encephalopathy (also known as *BSE* or *"mad cow disease"*).

According to a network of laboratories and collaborating centers working together on foot-and-mouth disease (http://www.foot-and-mouth-disease.org/), **FMD no longer exists in the U.S.** nor in North American or Central America for that matter. Nor does it exist in Australia, New Zealand, Japan, Chile and many countries in Europe. FMD is a disease of cloven-hoofed animals only, meaning that all domestic (and most wild) cloven-hoofed animals are susceptible, but other **animals such as horses, cats, dogs, etc. cannot be infected with FMD . In addition, FMD is considered to pose no risk to human health.** Typically where it does occur, outbreaks of FMD have been successfully controlled through the use of quarantines and movement restrictions, euthanasia of affected and in-contact animals and cleansing and disinfection of affected premises, equipment and vehicles.

According to Dr. Mike Baker, a cattle expert at Cornell Extension, increased herd density is not a major factor in raising the risk of a regional problem with FMD and may well be a basis for decreasing that risk through the use of confinement facilities and the implementation of management protocols, testing, quarantines, vaccination and other steps taken under the supervision of a full-time staff of licensed veterinarians. The high risk factors for FMD are infected animals, uncooked meat products from FMD countries, contaminated shoes and clothing and contaminated farm equipment. FMD free countries including the U.S. have embargoes on all of these agricultural imports from countries where effective control is not practices.

Having said all of this, however, one fact remains --foot and mouth disease has not been detected in the U.S. since 1929, more than 80 years ago!

Mad cow disease (BSE) on the other hand is only spread by humans or animals consuming affected animal protein. The source of infection has been definitively established and a solution put in place --banning the feeding of ruminant bone, meat and blood meal products back to ruminants. For this reason, a leading cattle expert at Cornell University definitively declared **"BSE or mad cow is no longer an issue!"** Notwithstanding, further protection from Mad Cow disease is based on the fact that BSE has never been detected in cattle under 30 months of age anywhere in the world. That is why all Asian countries have a 30-month restriction on beef imports (Japan's restriction is 20 months). The guaranteed protection here is that **all Bion cattle will be harvested under 30 months of age and therefore will not be at risk for BSE at Bion's facilities even if the disease recurs within the region.**

As has been pointed out by Dr. DeHaan, FMD is one of three cattle diseases that could potentially cause an outbreak requiring an ordered eradication of animals within a certain distance. That concern seems to be paramount in the minds of those in the community raising these issues. Clearly as discussed, FMD does not represent any real risk in this regard. The other two are Brucellosis and Bovine Tuberculosis (BT). Brucellosis is similar to FMD in that it does not exist in the U.S. and therefore does not pose a threat to cattle finishing operations that are professionally supervised. Bovine Tuberculosis on the other hand has only been detected in breeding cow herds and only rarely, but never in cattle feedlots. BT is responsive to treatment, meaning that any rare outbreak can be controlled. The ability to treat and contain this particular disease is the main reason that it has never been detected in cattle feedlots.

There are numerous less serious concerns for animal health beyond FMD, BSE, Brucellosis and BT. However, according to the experts (including both Dr. DeHaan and Cornell Extension) they are not generally transmitted via air from animal to animal across any distance, particularly given enclosure of the herd. But the specific disease of concern is less the point than the dedication to develop and deploy mechanisms by which Bion will prevent and control any disease outbreaks from becoming an issue.

We would ask, does anyone have a greater interest in avoiding animal disease problems? Bion will be investing $200 million in capital facilities and $60 - $90 million in livestock directly on the ground and at risk. As pointed out, Bion is working with several knowledgeable and well-respected experts (as well as being in contact with cattle experts at Cornell) in cattle finishing and processing with a great deal of direct experience in structuring protocols as well as development and use of standard and emergency operating procedures to address this set of concerns. Our facilities will be restricted access. All cattle purchased will be quarantined in separate facilities and tested prior to being introduced into the herd. And over time, the vast majority of fed cattle will be produced within a proprietary genetics program resulting in cattle operators having operational control from insemination to final shipping from the processing plant.

Why? Because that is what the consumer is demanding and that is what will create value for the brand. Bion's business model is based on the implementation of animal husbandry practices and waste treatment technologies creating the most environmentally sustainable livestock facility in the world. Doing so results in products that consumers want and clearly value despite their being unavailable in the existing marketplace. Market values for those products will be based in part on branding product attributes for quality, environmental sustainability and food safety. The consumer associates environmental product attributes with healthfulness, and in turn equates healthiness to food safety. That is the opportunity for this project: to build a brand based upon raising cattle in the most environmentally sustainable facility in the world with standard operating procedures that embrace a commitment to the highest standards of food safety (i.e. traceability).

In short, Bion's investment is not based on merely addressing operating issues but on solving them to such an extent that we are prepared to share that data with the consumer. How do we know that our yet unidentified project partners will operate in this manner? Because all potential industry partners with whom we have had discussions are seeking this very same opportunity since they know that their present operations do not allow them to operate in this manner and capture these values.

For these reasons, standard operating procedures and controls employed by Bion and our project partners must and will go beyond anything that presently exists in the industry today. This is not just an economic issue for us --it is a project fundamental. The fact that existing large-scale feed yards successfully manage their disease issues presently is not the standard we propose to set. Achieving the desired certification for high quality branding will require traceability and health protocols with higher levels of testing and more controls than currently employed by any beef finishing facility in the nation.

MEMORANDUM

DATE: **October 27, 2009**

TO: **Eric Behling**
President of the Oswego County Farm Bureau

FROM: **Jeff Kapell, Vice President**

CC: **Mike Treadwell, Oswego County**

RE: **Response to Questions from the Oswego County Farm Bureau**

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Initial answers to most of Oswego County Farm Bureau questions are provided below by Bion's livestock consultant, Dr. Keith DeHaan, a principal and owner of Food & Livestock Planning, Inc of Kansas City, MO. Dr. DeHaan is a well respected and widely known expert on all aspects of beef production from cattle finishing, housing and diet to beef product production and marketing.

As you know, we have offered to make Dr. DeHaan available to the Oswego Farm Bureau for an in person meeting on November 12 to further address questions regarding the cattle finishing and processing aspects of Bion's project.

Responses from Keith DeHaan, Ph.D.
October 27, 2009

Many of the questions posed were in reference to the spread of disease from a high concentration of cattle and management precautions in the case of natural disturbances or disasters.

Let's begin with a better understanding of cattle feedlot diseases:

The most prevalent bovine disease in confined areas is respiratory disease and is usually virus-induced. These viruses are opportunistic and most often affect cattle with a weakened immune system. Shipping stress is the most common cause of a weakened immune system. These viruses harbor in the lungs and cause pneumonia. Feedlot personnel walk through the cattle twice per day to monitor the cattle for symptoms of disease and the feed truck drivers look for cattle not interested in eating when they are fed. The infected cattle are removed from the pen and are sent for convalesce in a designated hospital pen with other sick cattle and are monitored. A licensed and experienced veterinarian prescribes treatment programs for these cattle. The cattle are often given antibiotics to prevent secondary infection. These pneumonias do not spread unless by direct contact such as cattle in the same pen. Neighboring cattle are not at risk. There can be a small incidence of bacterial diseases such as foot
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and eye infections and are easily treated with antibiotics. These diseases are treated right away. Sometimes cattle come into the feedlot with the parasite coccidiosis, and if not treated harbors in the manure and can spread to other cattle. However, cattle are all treated for this disease.

Feedlots of these sizes are not new. Management will be done by very experienced people with this size of operation. Very large feedlots would not exist in the U.S. if diseases were a huge threat. There is little risk to neighboring cattle.

Sometimes cow/calf operations are quarantined with incidences of either bovine tuberculosis or brucellelosis (Bangs Disease). These extremely rare disease incidences are caught by veterinarians before calves are sold off the ranch. These rare diseases do not exist in feedlot cattle and there will be no need to quarantine the feedlot or surrounding farms.

Questions posed by the County Farm Bureau:

Q. What contingency plans are in place to address oversaturated ground, extreme cold and sizeable amounts of snow that will prevent the transportation network of food and manure?

A. The feedlot design is such that the pens are covered. Snow will not impact the cattle or their resting places. The bed pack from the pens is only removed periodically and can be managed during times of decent weather. There will be adequate feed storage to account for inclement weather.

Q. What plan is in place if a disaster were to affect the facility such as a barn fire or extreme weather event?

A. The barns are concrete and steel and will not start on fire. The only facilities that are fire risks are the feed mill and hay storage. The livestock will not be affected. There are many loaders at the feedlot which can load grain and hay brought in emergency basis in case of fire.

Q. What emergency plan is in place in regards to evacuation or otherwise in the event of a nuclear plant incident? How much feed etc. would need to be stored and where? How would this be done in a practical manner given the magnitude of cattle?

A. Feed storage is normally designed for a minimum of 10 days for grain, hay, and supplement. Deliveries can be managed around weather events. Because of the feedlot's possible location in up-state New York, more storage could be planned.

Q. According to the Bion presentation a project of this magnitude or type exists nowhere in the United States . Current family run livestock operations in Oswego County or in New York for that matter operate in a such a way to respond to problems quickly and most efficiently. They can respond to expansion when and if resources become available or if and when business climate and operations seem appropriate to do so .

A. There are many feedlots this size in the U.S. and larger; there are just no confinement feedyards quite this large. However, there are several large confinement feedyards in the Midwestern U.S. Bion has conducted exhaustive analysis of existing facilities and their limitations and advantages.

Q. What are the reasons behind not constructing a pilot project on a smaller scale to verify the feasibility of a project of this size which could have potentially the worst types of environmental impact on a area such as Oswego County. Why invest so much time, and our areas resources before knowing if it is feasible?

A. There is a plan to construct smaller units first to perfect handling of the manure and bed pack. There has also been much feasibility analysis conducted and existing successful feedlots reviewed before proceeding with this venture.

Q. With the potential of a major viral or biological outbreak with over 70,000 head of cattle . Would it not be more prudent to proceed on a smaller scale to address smaller issues before they became major issues for our area's dairy and cattle herds. We understand BION would have veterinarian staff at its own facility but if and when a potential outbreak occurs what about the farmers in the immediate area of this operation? The potential for economic losses could be astronomical with no recourse. What would be BION'S plan in case of neighboring farms experiencing losses due to a BION mismanagement of a biological or environmental intrusion into their operations ? If a county wide quarantine were to happen, all product exports from all county farms may be halted . Is BION prepared to cover these types of losses ?

A. Please see the introductory description of feedlot diseases. There appears to be misunderstanding and undue concern.

Q. What steps if any have been developed for a controlled shut down of the facility and care and sale of cattle if this were to happen?

A. This is a very simple process. Cattle and unused feed are marketable and can easily be sold. The pens will be cleaned, manure processed, and utilities will shut down in a systematic way.