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India, Animal Genetic Technology

India: Animal Production Education

*“Tell me and I forget
Show me and I may remember
Involve me and I will Learn”
- Benjamin Franklin*

To the person experiencing hunger food is a struggle not a choice. Food production education is the thing that saves the next Norman Borlaug or the next Mother Teresa from dying of hunger or malnutrition. This is what we have to take into account. If we teach those that have the opportunities we do to learn, we can improve their quality of life. If, instead of just giving them resources, we show them how to use them, so that if they know what they are doing, then, with their own newly obtained knowledge, they will be able to increase their own standard of living. India is one of the countries that suffers from lack of knowledge in animal production. If shown how to care for livestock with the increased benefits of medicine and feed supply they can better utilize the resources they already have currently.

India is part of Southeast Asia along bordered by Indian and Pacific Oceans as well as many countries. India is also referred to as a subcontinent. India shares a border with Bangladesh, China, Pakistan, Nepal, Myanmar, Bhutan, and Afghanistan. India has been a country that has felt civil unrest and political change through the years. It is also home to some of the most moving figures in history that have strived for peace, some of the most notable being Mahatma Gandhi and Mother Teresa. Still India struggles to feed the people of its country. With about 15% of the country undernourished, India faces hunger problems that many on the world stage don't see.

India has some shattering facts when it comes to hunger. Despite being able to play in a global market as an industrial powerhouse, India has trouble with low-paid, underfed people that struggle to survive. India boasts the second largest supply of cattle in the world yet 3,000 children die everyday from starvation. Much of this is due to old outdated practices and much food waste. The country loses or wastes over one third of their food due to old agricultural methods and non-efficient transportation methods. If India were able to increase efficiency in all areas they would be able to boost themselves forward to the top of the world's economy and lead in development, but not until farmers and ranchers can learn new, effective, and efficient practices.

The typical family size in India is between four and five people. Indian families tend to be very close-knit and they rely on each other a lot especially in poor families. Since the country does not provide welfare, they must rely on each other to provide during hard times. If a person is unmarried in their twenties they will typically stay with their parents. Families also try to set-up lives for their children, including setting up marriages and jobs when the children are young. Many Indian traditions and customs are learned in the family. Men in the family, especially in rural communities, do the hard farm work and clearing of land while women do the harvesting and chores around the house. The adults are always working for the well being of the family which sometimes includes elders, themselves, and children. They also must take care of social and religious matters of the family.

Typical meals in India are very complex as far as the flavor profile and components go. Almost all meals include bread or rice and lentil stew. After you have these, meat or seafood can be served as sides and garnishes. Indian meals have been learned and perfected over the years, with spices playing a large role in the way things are seasoned and affecting the flavor profile. Meat is not the center of the plate in India much like it is often referred to in American cuisine. Goat, mutton, and lamb are consumed the most on average, due to Hindu traditions, but other animals and seafood are used quite often.

I mentioned in the last paragraph that there is not as much beef consumed especially in certain areas in India due to the fact the it is against religious practices. Well with this in mind I think that we should show to better use genetics, nutrition, and herd health management for all the major livestock species. This includes beef and dairy cattle, any hog operations, goat, and sheep. My model today will look at a beef or dairy model, but the template can be used for any of these livestock species.

As a livestock raiser myself, I know the importance of animal nutrition and health. This can play a huge role in the well-being and efficiency of the animal. With the proper vaccinations, minerals, and feeding programs a steer, for example, can cut it's time to finished in half. India has a large supply of cattle and if they could increase their efficiency they could have a valuable trade resource as well as increased food security. If ranchers were able to access these vaccinations and had knowledge of how to use what feeds to increase their rate of gain, this would help their bottom line.

Something that we as a world struggle with is that we want to solve world hunger but sometimes we go about it the wrong way. We try to just donate a pile of food to countries that need it instead of trying to teach those who are the caretakers of the local food supply. In my solution, I feel that when the farmers are educated in these systems they will also better utilize them for their region from their own personal knowledge. It will take a combination of both knowledge and experience to create a successful system that can evolve and work for the better of the country.

I feel that first you would have to bring in the proper feed and nutrition experts to match with the correct areas in developed countries dependent on the environment. If we could get these experts to meet with

local ranchers and expert they could test different nutrition programs and teach ranchers how to use wormers and pour-on to help with pests. That way they could increase gain and decrease disease.

The next phase, after we implement wormers and pour-ons for pests, I would want to start addressing other diseases. This list of shots would be for blackleg, scours, bovine respiratory disease, rabies, IBR, and anything else we feel that would help the cattle in the area. I would also have them educate the ranchers on the ability to give vaccinations when only certain animals needed them. For example, if you have a calf that is experiencing scours even after all the calves have had their scour shots, teach ranchers to use another scour shot and Draxxin to take care of it or/and an oral injectable.

The second division of the project would be animal nutrition and supplements to increase growth. I feel that in this division of the project it is important to increase growth and efficiency, but stay in a profitable state. I feel that a sustainable source of feed that could be supplemented with a protein and mineral ration. In the first stages, it might be worth it to ship in raw products and make a Commix to feed the cattle before a local foodstuff can be identified that could be mixed with protein and mineral mixture. This is where local experts could be especially useful because they might know where to find such a food stuff and what the cattle in the area would find most palatable.

Nutrition is huge especially at certain stages in development. I feel that one thing that would be most beneficial is to educate the ranchers of this fact and also how and when to utilize certain nutrition programs to get the most use of them. For example, you will not use the same feeding programs to help increase conception rates in cows that you would use to increase lean muscle growth in feeder steers. Implants in different growth animals can also be beneficial to increase growth and feed conversion. There has been a lot of controversy on growth hormones and implants in recent years. Evidence shows that it does not hurt the consumer and it can help the animals tenfold. The biggest thing on those is just to follow the regulations set-up by Indian government for each product. After we educate the first group of ranchers we can start on more groups and the newly-educated ranchers can be mentors and teachers to others. This can be really important because locals are more willing to listen if they can see the product in the neighbors pasture and can talk to someone they know and highly respect.

I would like to dig a little deeper into the specifics of nutrition requirements a steer that is being fed out and a lactating cow. For a lactating cow, which will be providing food and energy for herself plus her calf, she is going to need the equivalent of 68lbs of silage plus 4lbs of a supplemental protein or corn. This nutrition could come in different forms such as: 32lbs of good hay plus 1lb of corn plus 1lb of protein supplement, 32lbs of fair hay plus 5lbs corn gluten pellets, or high quality spring and summer stockpiled pasture plus a small protein supplement. All of these rations would also need an easy access to a source of minerals. Now let's look at the steer's ration. A growing steer is going to need at least 15lbs of feed, primarily a corn of grain feed with a protein supplement just to gain 2.5 lbs a day. Along with a few pounds of hay to help his digestive tract and small amounts of trace minerals. If we can teach this to

farmers and ranchers in India and substitute some of their feedstuffs to meet their requirements we will increase efficiency for growing a quality product.

After we have established a sustainable efficient supply of cattle, we can help spearhead the increased supply and demand for Indian beef. If an increased supply were readily available in India itself then the cost of beef could dramatically drop in India itself. This may look bad at first, but in the long run Indian families may see this as a viable sustainable source of protein and will implement it more in their food which in turn will increase demand.

One final point to consider in the nutrition education in feeding livestock is what to ration to different animals that are being used for different purposes. For example you would not feed the same ration to steer you are trying to fatten as you would a dairy animal whether it be a dairy cow or a Water Buffalo, which is commonly used in India for milk production. An animal you are trying to fatten for slaughter is going to need a high protein high energy feedstuff that it can convert into muscle quickly. Where a dairy animal will need more of a high roughage feedstuff like silage or hay as well a topdress of protein or mineral, especially calcium to aid in milk production.

I was fortunate enough to have the opportunity to tour a new modern style robotic dairy farm this summer. On my tour I was able to experience a kind of operation I had never seen before. I saw the way they track milk production and genetics as well feed intake to be able to increase their efficiency. It was mind-blowing to see how the cows were so relaxed and which in turn made them much more productive. We have the technology now if we can make to work for other countries like India they could increase their meager profits. Also, with a temperature controlled barn we could introduce more variety of livestock, especially dairy breeds of cattle, into the country that will be much more productive than the livestock they are using today, namely Water Buffalo.

This system would also have its challenges as well. One of the biggest of these is the logistics for building a modern robotic dairy so that there is not a waste when there is an increase in Milk Production. The best way to start out the experiment and teaching is to have near a populous area that can handle the increase in Milk Production. After the ball gets rolling on the implementation of these dairy farms they can move out and expand the area covered. It will take time, but I believe that it can be achieved.

I have high hopes that we can bring modern practices to India, especially after I toured a dairy farm this summer. The lady that owned the dairy farm actually said she had a young man from India that wanted to internship at her farm for a year or two so he could bring these modern more efficient practices back with him to India to implement in his homeland. It is young men and women like this man that are going to spearhead the new ways of agricultural for India. If Indians are willing to reach out and feel like it will work then we can take the step as a nation to show them on a large scale the potential India has as larger more stable agriculture powerhouse.

In conclusion, it is not going to take just one solution to solve world hunger, but a combination of implementation of different techniques and education to teach and learn from each other. The U.S or U.N. experts that might lead and work on the project might find things in India and other countries that can be used for the benefit of the global market and increase livestock production in the whole world. We will never know for sure until we try to bring this kind of joint knowledge into India. The goal is to get the percentage of hungry people in India down from 15% and make sure that 3,000 kids don't die everyday because they cannot find food. We have the power and knowledge, we just have to teach others.

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