Moringa Research

Scientists at N.C. A&T are conducting more and different studies on moringa than those that have been conducted by others, in order to unlock the potential of this promising plant for use by North Carolina livestock farmers.

Who cares and why?

The need for alternatives to antibiotics in livestock is well documented. Consumers and food safety experts are increasingly concerned about an increase in antibiotic-resistant pathogens, as well as antibiotic residues in meats. Many concerns have been raised that the continued use of sub-therapeutic levels of antibiotics in animal feed could increase the risk of transfer of drug-resistant pathogenic bacteria from animals to humans. These concerns have led to a push to identify alternative compounds or natural substances that can reduce the use of sub-therapeutic antibiotics in animal feed. Nutraceuticals, which are able to stimulate the natural defenses of the animals, are a likely source for achieving this alternative.

Moringa (*Moringa oleifera)* is one potential source of nutraceuticals that could be developed into supplements for animal feed operations. The hope is that it could serve the same role that sub-therapeutic antibiotics currently do, but without the potential risks. It is already known that moringa contains high concentrations of essential vitamins, minerals and amino acids, thus suggesting its potential in animal nutrition. Published studies of moringa by other researchers also suggest the plant may contain anti-inflammatory and antimicrobial phytochemicals.

What has the project done so far?

Researchers at North Carolina Agricultural and Technical State University (N.C. A&T) are exploring the potential of the tropical plant moringa to promote animal health and possibly reduce the routine use of antibiotics in livestock production. If these trials are successful, researchers will develop a growing protocol for use by farmers.

Researchers are endeavoring to understand the chemistry of moringa, as well as its therapeutic and nutritional effects on animals. Scientists at N.C. A&T are using mouse models to study the effects of moringa on the immune system – specifically, on B and T cells.

Moringa seedlings that could grow into a tree as tall as 20 feet. Its nourishing leaves are harvested and used as national supplements for humans, or feed for animals. Crushed seeds are also valued for oil or for use in water purifications.

Moringa seeds

Moringa leaves

They are also investigating the effect of moringa feed supplements on the growth rate and other performance traits of pigs. In addition, they are studying the effects of moringa on mastitis –a common disease in cows which costs the dairy industry as much as $2 billion annually. Finally, Cooperative Extension specialists on campus and horticulture scientists are conducting trials at the N.C. A&T University Farm to determine the potential of moringa as a cash crop for North Carolina farmers.

Impact Statement

- Therapeutic and nutritional effects on animals
- Potential treatment to reduce the effects on mastitis –a common disease in cows which costs the dairy industry as much as $2 billion
- Potential cash crop for North Carolina farmers

What research is needed?

More research is needed to conduct additional trials on pigs and cows.

Want to know more?

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Additional Information links:

http://www.ncat.edu/academics/schools-colleges1/saes/agresearch/documents/ReSearch2013v10.pdf

http://www.omicsgroup.org/journals/moringa-olefiera-could-this-be-an-answer-to-our-need-for-an-alternative-to-fighting-drug-resistance-and-chronic-infections-2167-0412.1000e142.php?aid=10677

This project was funded by USDA-NIFA Evans-Allen Research Program.