



Farmers Innovation on Parthenium Plant
eMsinga : Ncunjane dip, Ncunjane area
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Goat Value Chain Innovation Platforms facilitated by Goat Agribusiness Project

In 2016, the Goat Agribusiness Project (GAP) set up Innovation Platforms for the Indigenous Goat Value Chain in South Africa.

In recent years, innovation platforms (IPs) have become increasingly prevalent in the agricultural development arena to bring together value chain actors for the purpose of creating linkages, surfacing and discussing issues, defining possible solutions and creating research agendas, coordination of activities, disseminating research, streamlining and improving the value chain process, amongst other things.

With the goat value chain in South Africa being underdeveloped and few formal horizontal or vertical linkages existing, GAP has been facilitating IPs for almost 8 years now with the goal of building relationships and providing a useful forum among the value chain actors in favour of rural, smallholder farmers. While innovation platforms are not new, there is no record of any IPs related to goat value chains in South Africa to date.

Goat farmers have been able to interface directly with relevant stakeholders to help solve their problems. Goat farmers have been able to voice their concerns, constraints and issues

related to commercialisation of their herds. This has been discussed in the innovation platform forum with government, NGOs and researchers. Over the years, research has been conducted and brought back to the forum for discussion and dissemination. In addition to knowledge transfer through the innovation platforms, scientists are involved in publications, short course lectures and other talks. Numerous innovations have come from these platforms and been tested across KwaZulu Natal and incorporated into the Indigenous Goat Production Handbook

The meeting was held at MamYengwa Mchunu's home.

The purpose of the meeting:

New different types of diseases and what can be done about these diseases.

Heavy rainfalls introduced new plants.

To look at the common Livestock problems from different sides of the project and see if these problems are related to Parthenium plant.

1. Different Causes of Limping in Goats

- Foot Rot
- Overgrown Hooves
- Abscesses
- Deep Dry wound
- Wet wound
- Hoof loosening
- Hot Swollen hooves
- Wound
- Abnormal hoof growth
- Swollen hoof with Pus
- Joint ill (usually around summer)



Siyanda Sokhela, Sanele Simelane, Busisiwe Mntungwa, Sphehile Sibiya and Dumisani Gumede gather goats for demonstration to farmers.

Diseases that were seen this year after heavy rains

- Hoof problems
- Diarrhoea
- Lung diseases

Limping Treatment options used by farmers

- Petrol, Jeyes fluid, wound sept, used car oil (**None of these are recommended**)

Solution

- If the swelling in the foot is hot or the goat has a wound it needs to be treated from the inside with an Antibiotic
- Something that you apply outside will only kill worms outside while the infection will remain inside
- Another option is to inject them every day with antibiotics for a week and after a week an antibiotic would have fought an infection then you can treat the wound and cut the overgrown hooves

1. Presentation on Parthenium research:

The findings on Parthenium plant research

- 373 farmers were interviewed, they had a total of 5 935 goats, 27% of the goats died
- 3 main health challenges with goats
 - Coccidiosis
 - Limping
 - Worms
- Of 373 farmers, 59.2% believe that the Parthenium Plant is the cause of death in their goats
- 73.46 % of farmers say Coccidiosis is the major disease that kills their goats
- 30 % say limping is the major problem
- 43.97 % say ewes died the most
- 21.72 % kids died
- 7.7 % Rams died

2. Farmers experience on Parthenium Plant

- If you cut a goat open there are brown spots on the lungs
- Excessive water inside and has a bad smell
- The parthenium plant eats grass
- Causes eye infections in kids and cows

- If using a roundup it burns the parthenium plant but once it rain it starts afresh
- Weight loss in goats
- Causes nodules on the intestines
- Causes bloating in goats
- Chicken crop cut open when it has eaten the parthenium plant
- Children develop rash when playing around parthenium plant
- Causes sneezing in humans

Farmer's interventions

- Mixing of Dettol and limestone but they still dying
- Uses Maxitet and Hitet and it does not help
- Uses eye powder on eye infection

3. Presentation on Possible interventions: Dr Trevor

- Parthenium plant affects people and plants

Parthenium effect on Humans

- It affects the Lungs, if you have Asthma and nasal problems it can affect you
- It causes skin problems and eye problems
- 90 % of those people have measles and show tiredness
- 60 % show breathing and coughing problems
- 30% show skin problems
- 21 % show skin ruptures
- 22% show stomach problems if inhaled or if entered through the skin
- When touching it, people need to wear a mask and gloves and also wear sunscreen
- When done working take off those clothes and take a bath



Nhlanhla Mthembu and Dr Dugmore present the literature review of the problem



Gugulethu Mbatha facilitating a question-and-answer session with farmers.

Parthenium effect on Animals

- Parthenium depletes pastures for livestock
- Causes direct sicknesses
- It affects meat and milk in Livestock
- Goats are most vulnerable to parthenium
- In cows - it causes rash on the skin
- in Rhinos it causes swollen eyes and mouth peeling off
- it affects breathing and skin in Goats
- there are suspicions that goat production decreases
- without it affecting pastures and veld, even plants do not produce well
- causes lesions on the lungs and on the throat
- it is rich in proteins, contains 22 % of proteins
- in cows, it also causes raptures on the mouth, tongue, and throat
- goats also develop resistance
- affect skin
- skin ruptures and abrasion
- lesions on intestines
- haemorrhage inside until an animal dies
- it causes an allergic reaction
- lowers immune system which causes secondary infections
- Antihistamine is safer to use than Antibiotics

Q & A session

- Antibiotics cause more deaths when the body has a low immune system and does not have the power to fight
- Using paraffin and activated charcoal is not good for goats because paraffin causes diarrhoea and activated charcoal absorbs toxins
- It is not a good idea to use the spray to spray the parthenium plant around the household because it will kill everything
- At the moment, there is no solution to the parthenium plant

There is a new disease that causes diarrhoea that is called listeriosis

- It affects humans and animals
- It is the same as Coccidia
- In Free state young goats have died because of this disease
- It affects kids between 1 – 4 weeks of age, between 3 to 4 days

- The incubation period is less than 5 weeks and, in this time, it damages the intestines with lesions and causes an inflamed intestinal lining where the bacteria enters
- Crucial time is 1 to 2 weeks old goat kids



Symptoms

- Increases the body temperature up to 40 degrees Celsius
- It causes severe diarrhoea which may be yellow, Grey, white and have mucous
- Difficulty when defecating
- It becomes dry inside and the intestines are filled with yellow gas

Prevention

- It is a transmitted disease, healthy animals should be separated from sick animals
- It can also be transmitted from humans to animals through shoes and clothes
- This disease is found in dirty swamps and stagnant waters
- Goats should not defecate in their drinking waters
- When treating a sick animal put gloves on because it can also affect humans
- On the 4th week of pregnancy, a ewe can be vaccinated with a passive vaccine like Multiclostridial or Multivax p
- If there is an outbreak, pens must always be clean to prevent kids from getting the disease

- This disease comes first before coccidiosis because it affects kids from 1 to 4 weeks while Coccidiosis start from 5th week

In Humans

- It causes watery diarrhoea in children
- Cause nausea, Vomiting and children become weak

Treatment

Baycox (*Treats and controls coccidiosis caused by Eimeria species*)

Super Calf (*a product that reduces oocyst shedding of both coccidia and cryptosporidia*)



4. Parthenium research update:

- There are so many new trees like Gum trees, pine trees, Guava trees and there are different things we use them for. There are also ones that we don't need and we don't use them for anything like the parthenium plant.
- Research shows that these alien plants don't have enemies like indigenous plants because their enemies are left in their original homes. The research is based on the Parthenium plant, on what kind of area it grow well in, its anatomy and whether it has enemies.
- In most research, the information is taken from other people's findings but with parthenium the information will be taken from farmers rather than from books. Books show that it came from South America in 1899.
- What we want to understand is how far has it gone, in which areas is it new and in which areas it affects livestock and how, what are the effects of this plant on humans and on livestock from different areas/places.

5. Way forward

- Goats limping: Inject all limping goats with an antibiotic for a week and treat the wound afterwards
- Coccidiosis: Do experiments on supacalf medicine but first check if the diarrhoea is not caused by worms
- On Lung infection: First check if the goat is coughing or not
- Check the colour of Mucous if it is yellow, Green or white
- Check if this lung infection is something new that is related to parthenium or is it Pneumonia



Other recommendations

- Go back to the same farmers who were interviewed about parthenium in Mid-July to see if there is a difference on what they have experienced before
- Check if Goats in the area where there is parthenium plant are having same problems like in areas where there is no parthenium plant

6. Goat dipping

- Goats dipped 1,611
- Goats limping 28
- Normally different types of limping occurs when it is wet, meaning in summer goats needs to be well taken care of and dipped to prevent limping



Farmers gathering at the innovation platform.