Use of bioactive and medicinal plants in animals systems

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IAHA, IBEM
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INTRODUCTION: HOLISTIC VISION IN ORGANIC PRODUCTION SYSTEMS

BIOACTIVE AND MEDICINAL PLANTS IN BRAZIL

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   - Anti-parasitic action (direct use in animals)
   - Anti-parasitic action (use in the environment)

2. ANTI-MICROBIAL ACTION

3. INSECTICIDE ACTION IN STORED GRAIN
WE MUST CONSIDER THE FARM AS AN ORGANISM WHERE EVERYTHING IS CONNECTED

1. SOIL
2. WATER
3. VEGETABLES
4. ANIMALS
   - Breed
   - Nutrition
   - Ambience/housing
   - Handling
   - Terapeutics/inputs
   - Biosecurity
HOW TO HANDLE TO AVOID PARASITS?

Combination of different actions and strategies
ROTATION OF THE ANIMALS

- Cut cycle of parasite
- Better use of pasture
ANIMAL WELFARE
MANAGEMENT OF CALVES

IN GROUP

TACTILE STIMULATION

NEED TO SUCK
330 cows, 20 births / month - 12 months

Frequency of antibiotic use
36.42 for 18.51 treatments / month

Decreased incidence of dehydration and diarrhea
We may use the traditional knowledge as bioactive and insecticide plants

Together with the new studies concerning animal welfare, cycle of parasites, biosafety, silvopastoral systems
1. Rustic breeds

2. Animal welfare is fundamental
   - Temperature confort – ex. Trees
   - Management : ex. Calves

2. Management to control parasites

3. Others: biossefty, natural enemies etc.

**PRINCIPLE OF PREVENTION**

**Besides good nutrition, vaccines and hygiene ....**

**PREVENTION AND NOT ONLY COMBAT AFTER THE INSTALLED PROBLEM.**
Popular knowledge about medicinal plants comes mostly from Native Brazilians, and this empirical knowledge is being scientifically confirmed and thereby gaining space and credibility. Mainly for humans.

Brazil has a significant genetic diversity, currently with 55,000 described species which highlights the enormous potential of this country.
BIOACTIVE AND MEDICINAL PLANTS

Selection of plants that have had their therapeutic efficiency tested, with good results (minimum 70% effectiveness) on laboratory testing and/or in the farm dealing with some of the main current problems of animal breeding.

The results of the scientific evaluation of anti-parasitic, antibacterial and insecticide action of a group of plants or their extracts in popular use in southern Brazil.

REFERENCE:
MAIN CURRENT PROBLEMS

1. ACTION AGAINST INTERNAL AND EXTERNAL PARASITES
   - Anti-parasitic action (direct use in animals)
   - Anti-parasitic action (use in the environment)

2. ANTI-MICROBIAL ACTION

3. INSECTICIDE ACTION IN STORED GRAIN
## ANTI-PARASITIC ACTION (DIRECT USE IN ANIMALS)*

<table>
<thead>
<tr>
<th>PLANT</th>
<th>USE</th>
<th>ACTION</th>
<th>ANIMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Musa sp.</td>
<td>Leaves (v.oral)</td>
<td>Haemonchus spp, Cooperia spp, Trichostrongylus spp e Oesophagostomum spp.</td>
<td>Bovine and goats</td>
</tr>
<tr>
<td>Banana leaves</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Azadiractha indica</td>
<td>Pó ou óleo (v.o. ou banho)</td>
<td>Ticks, fly</td>
<td>Beef and bufalos</td>
</tr>
<tr>
<td>Neem</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cucurbitta</td>
<td>Roasted seeds</td>
<td>Internal parasites</td>
<td>Chiken</td>
</tr>
<tr>
<td>Pumpkin</td>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chenopodium ambrosioides</td>
<td>Leaves oral Extrat - (v.o.)</td>
<td>Haemonchus, Ostertagia, Cooperia, Trichostrongylus Strongyloide</td>
<td>Sheep</td>
</tr>
<tr>
<td>Allium sativum - Garlic</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*REFERENCES AVAILABLE.
BANANA (*Musa sp.*)

(internal parasites)

**BOVINE:** *Haemonchus* sp, *Cooperia* sp, *Trichostrongylus* sp e *Oesophagostomum* sp.

Efficacy of the ingestion of the banana leaf was 100%

**GOATS.**

Efficacy

70,4% para *Oesophagostomum* sp  
65,4% para *Trichostrongylus* sp  
59,5% para *Cooperia* sp  
57,1% para *Haemonchus* sp

REFERENCE: OLIVEIRA, Denise Botelho et alii  
Universidade Federal Fluminense/RJ, 1999.
HELMINTS IN SHEEP

A D. sellowiana (samambaia/xaxim) for sheep

500 mg/kg

REFERENCE:
ALTERNATIVAS FITOTÉRÁPICAS PARA O CONTROLE DA VERMINOSE OVINA NO ESTADO DO PARANÁ: TESTES IN VITRO E IN VIVO
Tese apresentada ao Curso de Pós-Graduação em agronomia, área de concentração em Produção Vegetal, Departamento de Fitotecnia e Fitossanitarismo, Setor de Ciências Agrárias, Universidade Federal do Paraná, como parte dos requisitos para a obtenção do título de Doutor em Ciências. 2006.
NEEM: CONTROL TICKS AND FLYS

5 kg leaves / 50 l water - 3 days

5 l infusion + 15 l water -
SEEDS OF PUMPKIN *CUCURBITA SPP*

100 g semente torrada e moída / 1 kg de ração

*seed roasted and ground / 1 kg of ration*

REFERENCE
LUNARDI, JJ - *PRODUÇÃO DE ALIMENTOS DE ORIGEM ANIMAL ISENTOS OU COM MENOS BIOCIDAS*. Orientações Educativas e Informativas – EMATER /RS
## ANTI-MICROBIAL ACTION*

<table>
<thead>
<tr>
<th>PLANT</th>
<th>NOME POPULAR</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baccharis trimera</td>
<td>Carqueja</td>
<td>Gram positivos: Staphylococcus aureus e Staphylococcus uberis</td>
</tr>
<tr>
<td>Hypericum caprifoliatum</td>
<td>Escadinha</td>
<td>Staphylococcus aureus</td>
</tr>
<tr>
<td>Allium porrum</td>
<td>Alho porró</td>
<td>Salmonella, Escherichia coli</td>
</tr>
<tr>
<td>Rosmarinus officinalis</td>
<td>Alho nirrá</td>
<td>Salmonella, Escherichia coli</td>
</tr>
<tr>
<td>Achyrocline satureioides</td>
<td>Macela</td>
<td>Salmonella, Escherichia coli, Sataphilococcus aureus</td>
</tr>
<tr>
<td>Capsicum frutescens</td>
<td>Pimenta malagueta</td>
<td>Salmonella, Escherichia coli</td>
</tr>
<tr>
<td>Ilex paraguariensis</td>
<td>Erva mate</td>
<td>Salmonella, Escherichia coli</td>
</tr>
<tr>
<td>Salvia officinalis</td>
<td>Salvia</td>
<td>Escherichia coli</td>
</tr>
</tbody>
</table>

*REFERENCES AVAILABLE.
DISINFECTION OF WOUNDS AND MILKING UTENSILS

Carqueja (Baccharis trimera) showed antimicrobial activity against Gram-positive as the *Staphylococcus aureus* e *Staphylococcus uberis*.

**PREPARATION**

15 grams of the dried plant, slightly macerated, in 1 liter of water, bring to a simmer, covered and boil for 15 minutes.

This infusion is ready for use and should be used within 24 hours.

**USE**

Wash wounds of people or animals and rinsing utensils and containers used in milking.

Switch use with other disinfectants.

CONTROL OF FLIES WITH PLANT EXTRACTS IN SOIL

Anti parasitic action (in the environment)

<table>
<thead>
<tr>
<th>PLANT</th>
<th>POPULAR NAME</th>
<th>DEATH OF LARVAE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Azadiractha indica</td>
<td>Neem</td>
<td>94.4%</td>
</tr>
<tr>
<td>N. tabacum</td>
<td>Tobacco</td>
<td>90.4%</td>
</tr>
<tr>
<td>Allium sativum</td>
<td>Garlic</td>
<td>86%</td>
</tr>
<tr>
<td>Syzygium aromaticum</td>
<td>Clove of india</td>
<td>88.3%</td>
</tr>
</tbody>
</table>

REFERENCE
DELEITO, CLÁUDIA SAYÃO RAMIREZ - INSETICIDAS ALTERNATIVOS NO CONTROLE DE MOSCAS SINANTRÓPICAS
<table>
<thead>
<tr>
<th>PLANT</th>
<th>POPULAR</th>
<th>USE</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Eucaliptus citriodora</em></td>
<td>Eucalipto</td>
<td>Layers of leaves</td>
</tr>
<tr>
<td><em>Caryophilus aromaticus</em></td>
<td>Clove</td>
<td>Layers of interleaved sheets</td>
</tr>
<tr>
<td><em>Azadirachta indica</em></td>
<td>Nim</td>
<td>Spray oil</td>
</tr>
</tbody>
</table>

**Combat Weevil** (*Sitophilus zeamais*)

CONTROL OF TICK LARVAE

CAPIM GORDURA - Melinis minutiflora (forage)

Action on the tick in the free life stage.

PREPARATION OF A RURAL PHARMACY
THANK YOU FOR YOUR ATTENTION!

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