Nature based solutions: herbs for dairy

Introduction to the seminar

Maria Groot

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natural
livestock
farming
india

Introduction

- Maria Groot PhD, veterinarian, research at Wageningen Food Safety Research
- Nature-based Solutions for Climate Resilient and Circular Food Systems
- Case study: herbs and dairy
- Dutch part and Indian part
- Goal of the meeting exchanging experiences
- Farmers and scientists

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Program Nature Based Solutions

- Knowledge base WUR program 2020-2022
- In the 2020 the case study has addressed what herbs and which parts of the herbs are used in India for the different diseases in cattle.
- Next to the herbs, the active components, their biological activity and literature has been collected.

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Deliverables 2020

- Factsheet herbal gardens India
- Short paper on the use of herbal remedies in India
- Excel table with remedies, plants, indications, main components, activities and literature

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Deliverables 2020

- Fact sheet

Nature based solutions: herbs for dairy

Ethnoveterinary Medicine in India

India is the largest milk producer of the world. Based mainly on small holder farmers. The National Dairy Development Board advocates for ethnoveterinary medicine, remedies readily available from local herbs and very effective.
This results in healthier animals, less residues of antibiotics in the milk, improved milk production and quality.
They have a specific Dairy Knowledge Portal with lots of information for farmers
The NDDB organizes EVM training for veterinarians and farmers and training materials are available on their website.
Driving forces behind these training programs are prof. B.N.M. Nair and prof. N. Punniamurthy, who dedicated their life to promote ethnoveterinary medicine for animal health.

Table 1. Feedback from various milk societies through NDDB through ENAP on the efficacy of EVPs for 19 clinical conditions in cattle

Clinical condition	Number of Animals treated	% cure
Mastitis	38305	93.27
Indigestion	9212	90.68
Foot & Mouth (FMD)	11669	93
Foot lesion	4388	92
Fever	51691	92.5
Diarrhea	50015	96.72
Joint swelling	500	90
Bloat	1830	86.75
Udder edema	1982	95.49
Repeat breeding	4637	84.37
Deworming	5906	95.77
Wound	1335	83
Uterus prolapse	429	76
Retention of Placenta (ROP)	1128	74
Downer	999	76
Udder pox, warts	658	67.6
Teat obstruction	1134	75.5
Ectoparasites /Ticks	1401	93.57
Haemogalactia	1336	95.5

EVM training, results of last 12 years

- 1750 veterinarians trained in EVP
- 61 vets completed EVP Post Graduate Diploma course
- 516 village resource persons trained
- 60 officers from the various milk unions trained
- Over 30,000 farmers trained and implemented EVP
- Dairy companies involved: NDDB, AMUL, KMF, Abbott, MILMA & MILK Unions from 14 states
- Universities involved-LUVAS, KVASU

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Prof. M.N.B. Nair, GLOHMSIWA and Natural Livestock Farming NLF INDIA

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Deliverables 2020

- Factsheet

Nature based solutions: herbs for dairy health

Herbs-rich grassland in Netherlands

In the Netherlands many herb species grow spontaneously in pastures. Some of these herbs appear to be having an effect on (reduction of) emission of methane by ruminants and an effect on the health of dairy. It is known that herbs play a role in maintaining the health of animals, and in the Netherlands some farmers observe that their cows seem healthier when grazed on pastures rich in herbs. Thus, there is need to explore which herbal species are present in grassland compositio in the Netherlands and understand the link between active substances in herbs and the cows' health. Many Dutch dealers propose a mix of herbs that can be implement in pasture to improve the health condition of dairy. While this procedure is well known among organic farmers, still a lack of knowledge is present to extend the use of herb-rich grassland for dairy health nationally.

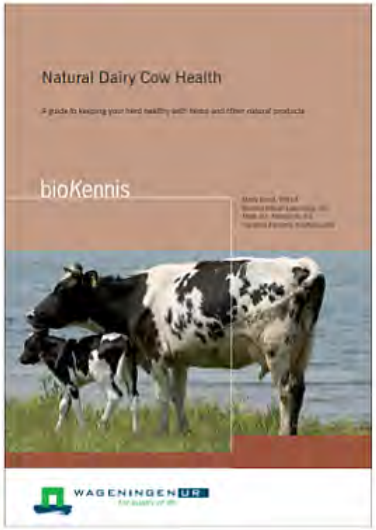

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Table 1. Common herbs in Dutch grasslands with health function.

Common Name	Latin name	Familie
Common dandelion	Taraxacum officinale	Asteraceae
Clover	Trifolium spp.	Fabaceae
Stinging nettle	Urtica dioica	Urticaceae
Bitter dock	Rumex obtusifolius	Polygonaceae
Shepherd's-purse	Capsella bursa-pastoris	Brassicaceae
Chamomile	Matricaria chamomilla A	Asteraceae
Red Clover	Trifolium pratense	Fabaceae
White clover	Trifolium repens	Fabaceae
Common Plantain	Plantago major L.	Plantaginaceae
Narrow leaf plantain	Plantago lanceolata	Plantaginaceae
Thistle	Cirsium spp. (vulgare, milk)	Asteraceae
Common chickweed	Stellaria media	Caryophyllaceae
sheep sorrel	Rumex acetosella	Polygonaceae
Salad burnet	Sanguisorba minor	Rosacee
Yarrow	Achillea millefolium L.	Asteraceae
Fennel	Foeniculum vulgare Mill.	Apiaceae
Lady's bedstraw	Galium verum L.	Rubiaceae
Calendula (Pot marigold)	Calendula officinalis L.	Asteraceae
Wild carrot	Daucus carota L.	Asteraceae
Chicory	Cichorium intybus L.	Asteraceae
Common sainfoin	Onobrychis viciifolia Scop.	Fabaceae
Birdsfoot trefoil	Lotus corniculatus L.	Fabaceae
Dill	Anethum graveolens L.	Apiaceae
Caraway	Carum carvi L.	Apiaceae
Black medick	Medicago lupulina	Fabaceae

Herb-rich grassland, results from literature research:

- 46 herb species have been identified and analysed in the Netherlands
- The majority of health herbs belong to the Asteraceae familie, this herbs are common or very common in the Netherlands pastures.
- The active substances (bitter components, essential oils, inulin, mucilage, alkanoids, silicic acids) together with secondary metabolites (flavonoids, saponins, tannins) are compounds directly involved in improving cows' health.
- Active substances are species-specific such as the taraxine in Taraxum officinale
- In rare case some herbs such as Ranuculus can be toxic if consumed in high doses

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Program 2021

- What is the state-of-the-art knowledge on the use of community herbal gardens
- Inventory of new diseases occurring due to climate change and identify which herbs can be used to help the animals maintain health and production
- Report, will be published in 2022 as a paper
- Seminar exchanging experiences

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Sharing experiences

- Today farmers and researchers from India an Netherlands share experiences
- Different approach
- Common goal
- Healthy cows in healthy environment

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Program

- 13:00 Introduction on the topic Dr. Maria Groot DVM
- 13:15 The use of herbal remedies in India, em. Prof. Dr. Nair
- 13:30 Experiences: Farmer from India, Ms.Veda Manohar
- 13:50 Experiences: Farmer from India, Ms. PoongodiSuriya
- 14:10 Experiences: Farmer from India Ms. LakshmiG
- 14:30 break

Program

- 14:50 Herbal grasslands, drs. Hans Nij Bijvank DVM
- 15:20 Farmers experience, mr. Auke Spijkerman, cancelled
- 15:40 Herbal grasslands, dr. Jan-Paul Wagenaar
- 16:00 General discussion
- 16:20 Wrapping-up: Maria, Nair and Punniamurthy

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Thank you for your attention!

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