No.34 MARCH 1998

ANIMAL HEALTH

Improving animal health through paravets

by Robert Bowen and Mirjam Andriessen

NEARLY EVERYONE has heard the term *community health worker* (or primary health worker). However, the term paravet is likely to be new to many. Paravets are the equivalent of community health workers but for animals instead of people! Like health workers, they may not receive formal training, but instead receive practical training within their communities.

Many rural farmers have no access to veterinary (animal healthcare) services and medicines. Animal vaccine campaigns are often not provided. Government veterinary services often have few trained staff and lack adequate transport and funding for medicines and vaccines.

Paravets give help to farmers by providing advice and access to medicines to treat sick animals. Most paravets live in the villages where they work. They should be highly motivated people, willing to improve livestock in their

community. According to the size of a village and the number of livestock, a village could have one, two or even three paravets. Selection of candidates should be done by the community to ensure farmers have confidence in them. Some guidelines in the choice of paravets include...

- Age should usually be between 18 and 45. Younger people are often less stable and may not have the confidence or respect of the farmers.
- A candidate should live in or near the village rather than being a travelling trader or migrant labourer.
- Candidates need to be in good health as they will need to do a lot of walking and often treat large animals.
- They must be highly motivated.
- They should, ideally, be literate in order to follow the training, read instructions for medicines and be able to calculate correct dosages.



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FOOTSTEPS

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Footsteps is a quarterly paper, linking health and development workers worldwide. Tearfund, publisher of Footsteps, hopes that it will provide the stimulus of new ideas and enthusiasm. It is a way of encouraging Christians of all nations as they work together towards creating wholeness in our communities.

Footsteps is free of charge to individuals working to promote health and development. It is available in English, French, Portuguese and Spanish. Donations are welcomed.

Readers are invited to contribute views, articles, letters and photos.

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• They need to have time to receive training.

Paravets in Mozambique...

In Mozambique VETAID is supporting farmers in Gaza and Inhambane Provinces in three ways:

- by supporting local government livestock services
- · by a restocking programme
- by the training of farmers and paravets.

Government services are at present inadequate to cover huge areas of the country. Though Government policy is that vaccination campaigns should be free, vaccines are often not available. Many farmers lost livestock during the long civil war. The paravets are supplied with a veterinary kit containing some medicines. They can sell these to farmers for a small profit which they keep themselves as a small payment for their work and any costs in transport. It is not enough to provide a salary and their motivation needs to come from the desire to support farmers in their own community.

...and Somaliland

In Somaliland communities usually select candidates who are livestock owners and who already have animal health skills. After training, the paravets' work will include the simple treatment of wounds, vaccination and diagnosis of diseases.

Somaliland declared independence in 1991 after a devastating civil war. Most of the population are pastoralists, depending on their camels, sheep and goats for their survival. Since the civil war, government livestock support services have not been operating. Former livestock staff have sometimes formed their own private services. VETAID is providing training and support for paravets, linking them up to these private veterinary groups who can provide training and support and supply them with medicines.

The initial training of paravets takes 15 days. Teaching is based around the recognition and treatment of the commonest diseases and problems in the area. Paravets also receive training in giving injections, drenching, treating wounds and hoof trimming. Regular follow-up sessions take place every three months. So far, 15 paravets have been trained, covering three districts.

As well as the training of paravets, farmer training is also important so that farmers have confidence in the services provided by the paravets.

Robert Bowen and Mirjam Andriessen both work with VETAID – Robert in Somaliland and Mirjam in Mozambique. Mirjam can be contacted at: Gaza SPP, Xai Xai, Mozambique, Africa. Tel/fax: +258 22 22843 E-mail: vetaid@vetaidgz.uem.mz

VETAID would be pleased to hear from readers already involved with paravet training and work or seriously considering setting up such work. They do not have funding but may be able to help with training. Their address is: VETAID, Centre for Tropical Veterinary Medicine, Easter Bush, Roslin, Midlothian, EH25 9RG, UK.

Tel/fax: +44 131 445 3129 E-mail: vetaiduk@gn.apc.org



CHRISTIAN ACTION WITH THE WORLD'S POOR

In Somaliland and Mozambique VETAID provides training and support for paravets.



ANIMAL HEALTH

Paravet training in southern Sudan

by Nimaya Kenyi Mogga

ACCOMPLISH is a local NGO in Terekeka District in southern Sudan. They have established a paravet project to improve animal health care in the area.



The inhabitants of Terekeka belong to the Mundari tribe and are pastoralists with large herds of cattle, sheep and goats. Besides providing milk and occasionally meat for the family diet, livestock are kept for prestige, payment of bride price, ceremonial rituals and payment of compensations. They are also used as an insurance or bank to safeguard against unexpected environmental problems such as droughts or floods. Animals can be sold or exchanged for grain and other necessities.

Livestock diseases are a major problem for farmers. Outbreaks of rinderpest, haemorrhagic septicaemia and contagious pneumonia result in many deaths. Tickborne diseases, trypanosomiasis and internal and external parasites result in poor production and sometimes death.

The Mundari use traditional treatments to treat diseases in their stock, but they also use modern medicines like antibiotics and worming medicines.

There are no veterinary services or trained vets stationed in the area, so the cattle owners normally have to move long distances to obtain livestock medicines. Vaccination campaigns launched by government veterinary staff are never very effective due to poor facilities in the local veterinary department, bureaucracy and the inaccessibility of the area to veterinary staff during the rainy season between April and November.

The project was therefore set up to select and train paravets from amongst the cattle owners to carry out treatment and vaccination of their stock. Medicine supplies were also set up on a revolving funds basis.

Selection and training

Candidates were selected from among the cattle owners of every chieftainship. The number chosen in each chieftanship was determined by the size of the area and the number of livestock in the area. Criteria for selection included...

- an ability to work hard
- honesty
- knowledge of traditional livestock care, livestock diseases and their traditional cures.

The candidates did not have to be literate, but skills in numeracy were important for giving correct doses of medicines. These people were then collected together and trained. The subjects taught included identifying the different diseases from their symptoms, treatments for disease, correct administration of medicines, hygienic handling of medicines, equipment and tools, operation of a cold-chain system for vaccines and reporting.

The paravet activities

After training, the paravets set to work in their communities. Each is provided with

a bicycle and veterinary kit. Four centres were established in the district with stocks of medicines and cold-chain equipment. Each centre is controlled by a supervisor. From time to time the paravets come to the centre to report, pay in money for the medicines used and collect more supplies of medicines. Each year the paravets come together for refresher training in animal health and other husbandry methods.

The paravets receive a small payment for each medicine they sell. They collect this money when restocking with new medicines. So the more medicines they sell the more they receive. A government veterinary officer helps the organisation to supervise the paravets' activities, order medicines for them and organise training.

Achievements

Despite disturbances caused by the civil war in the project area, the activities have continued with few problems. The project now has about thirty trained paravets of which three are women. The main concern has been a fairly high turnover among the literate paravets due to the training received which has exposed them to new horizons and job opportunities.

We have been able to build up a sustainable revolving fund for medicine supplies in the district. No outbreak of rinderpest disease has been reported since the establishment of the project.

Outbreaks of other diseases are attended to immediately. Confidence has been built between the paravets and the cattle owners who are now willing to accept new medicines supplied by the paravets. In the past, cattle owners selected only medicines with trademarks which they recognised.

Nimaya Kenyi Mogga is a Livestock Officer with ACCOMPLISH, c/o OXFAM UK/1, PO Box 3182, Khartoum, Sudan.

Discussion questions

- If paravets make a profit from selling medicines, are they more likely to encourage farmers to buy medicines either when livestock do not need treatment or when herbal treatment would be as effective?
- How could the community support voluntary paravets?
- Should dangerous, though effective, medicines be stocked by paravets when farmers may not have the correct equipment or knowledge to use them safely?
- How long can paravets remain effective without regular support and in-service training?

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LETTERS



Food security

WE WORK with a holistic development project in Laos. I am writing to comment on issues raised in the first article in the Food Security issue, No 32, as I question whether food security means having culturally acceptable food available. Does this mean only food which people have traditionally eaten? If so, then we can't disagree more.

In the case of the villages where we work, people have always relied on upland rice and vegetables gathered in the forest. As a primary source of food that's not feasible anymore and it's irresponsible for us to encourage them to rely on that for the future. They need to learn to produce and eat other foods to supplement their rice diet.

We're encouraging soybean products (especially tofu) and peanuts, to name two. Both are locally available, but have never been eaten in these tribal groups. Why shouldn't they learn to eat new types of food? Is survival not more important than preserving cultural traditions? Of course, where their traditional practices have helped them, we encourage them to hold on to those

things, as was pointed out in the article on traditional potato crops.

With reference to the Bible study by Stan Crees, it implied an unbiblical relationship between what we have and knowing/praising God. He stated, 'Out of love for him (God) we must make sure our needy neighbours have that quality of life which enables them also to give thanks to God.' However, nowhere does the Bible state or imply we need to have basic needs met before we praise, honour and thank God. On the contrary, Job praised God amidst the ashes. The Apostle Paul praised God in the Philippi jail as his open wounds bled. We are taught, rather, to give thanks in all circumstances, for this is the will of God for us in Christ Jesus. Let's help our needy neighbours, but let's not forget that their needs, or ours, should never hinder us from knowing God today, in the now. In fact, our needs should drive us to God all the more.

N Saeng c/o Oppel, PO Box 27, Chiang Mai, Thailand 50,000

Health and hygiene committees

WITHIN OUR PROGRAMME we aim to improve health and hygiene in our communities. We have established Health and Hygiene Committees with the active participation of the people in the nine villages in the programme.

The objectives of these committees are...

- to ensure that weekly 'cleanliness' days are observed
- to teach people to wash their hands with soap or ashes before eating or serving food and after going to the toilet
- to ensure that places where water is collected are kept clean
- to organise classes so people are more aware of water-related diseases and the need for good hygiene
- to fight against the increase of rubbish dumps at the edge of the village
- to teach people to build and use sanitation systems.

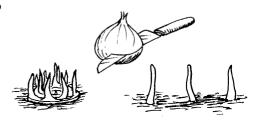
Before establishing committees, we visit villages and draw up social maps with the people to demonstrate their present state of sanitation. People discuss possible actions to be taken concerning health and hygiene. Then we explain about how the committees operate. People then elect Health and Hygiene Committees. The members receive training and encouragement.

We have noticed an improvement in attitudes to hygiene in the first two villages, Tissi and Salakoira, where such Committees have been established. They now have successful 'cleanliness' days, additional latrines, fewer rubbish dumps and respect the hygiene rules for using the well. We plan to introduce the 'tippy tap' we learned about from *Footsteps 30*.

Boubacar Boucoum Formateur PDI Saraféré UJC-AMRAD Niafunké Mali

Onion plants

IN ISSUE 30 of *Footsteps*, Acheka Kambaname, Haut-Zaire, was asking for suggestions on how to produce onion seeds. We have been working in agriculture for 22 years in Cameroon and can recommend this technique of multiplying onions without the need for seeds.



- 1 Cut onion bulbs into halves as shown. (Eat the top halves.)
- 2 Plant the lower halves, in well spaced rows, mulch and water well. Leave for one month, by which time the bulbs will be sprouting new shoots.
- 3 Split off each of the new shoots and plant up in rows, water well and leave for 3–4 months when they will be ready to harvest.

We have been using this method for four years and find production of onions is good in the dry season.

Simon and Susan Ngwainmbi Belo Rural Development Project c/o Mbingo Baptist Hospital PMB 42 Bamenda Cameroon

LETTERS

Solidarity in participatory activities

THE IWACU Centre for Cooperative Training and Research began in 1984 to help rural people improve their living conditions through participatory activities. We support cooperatives and other organisations, helping them run their groups, find finance, stimulate creativity and income generation. We promote the networking of groups. Women's groups receive particular support. To become a member, people must accept our rules, agree to participate in activities, and be proposed by two members. We publish a quarterly bulletin to exchange information and communicate by radio as well. There are training programmes in administration, management and food processing. The centre is well-equipped with accommodation and conference rooms and may be able to help with your training needs.

IWACU Centre BP 1313, Kigali Rwanda Tel: +250 73325/6 Fax: +250 73309

Activities for young people

THE BRIMAX ASSOCIATION in Togo work with young people, drawing them into activities, helping them out of poverty, encouraging them to discover and appreciate other cultures, and teaching them of the dangers of various diseases. They are keen to build up correspondence links with other young people.

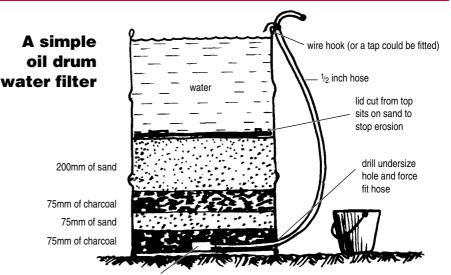
Association Brimax BP 13182 Lomé

Togo Fax: +228 22 48 27

Credit schemes

HERE IN IVORY COAST we have used the guidelines from the *Pas a Pas* issue on credit (No 26) to set up our own credit scheme. We have just considered the first applications and are about to give out the first loans. At this stage we have used our own money to fund the project but the needs are much greater than we can handle. We have restricted the first loans to church members as a trial but the scheme will soon be open to the whole

The sisters of the Balimo Health Centre, Papua New Guinea, turned a Footsteps article into a drama.



aluminium can with foam filter (use an empty can to cut up an old mattress)

community. In the long term this sort of scheme has the potential to do a lot of good in the community.

Don George Mission Evangelique, WEC International BP 80 Seguela Ivory Coast

E-mail: 104030,311@compuserve.com

Fire and water

WE USED THE STORY of the 'Fire of AIDS' from *Footsteps 31* to produce a drama here at the Balimo Health Centre in Papua New Guinea. Mona Asipali and the sisters performed the drama for the Independence celebrations this year.

In this country we are experiencing a drought situation. Here in Balimo, Ernie Gunders has produced a simple filter in an oil drum to purify lagoon water. Other *Footsteps* readers may find the details useful. The oil drum must be completely clean. It contains sand and charcoal in layers. Both must first be washed very carefully. The layers will mix together in time but this does not matter.

If the water is very dirty you may need to chlorinate it with bleach. Dilute 250ml of



liquid bleach with 1 litre of water. Add 30ml of this solution to every 120 litres of filtered water (one full drum of water).

ECPNG Box 1, Balimo Western Province Papua New Guinea

Take a look at your life!

Look back! See the obstacles that you have already overcome. See how much you have learned in this life and how much you have grown.

Look ahead! Stand up when you have been tripped over. Set up targets, goals and actions for yourself and go ahead steadily.

Look inside yourself! Search for your motivations, know your heart and purify it. Do not let pride, vanity and envy dominate you.

Look around! Help those who need you and love your neighbour as God loves you. Be sensitive to the needs of others.

Look downwards! Do not humiliate anyone. See those who are humble and learn from them. We are all equal before God and we will all have to account for ourselves to God.

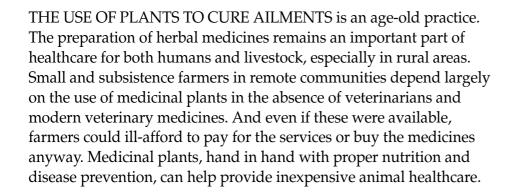
Look up! There is a God who is greater than you, who loves you and has control over all things. God sent Jesus to be our Lord and Saviour.

Look at God! Note the depth, the richness, the power and the extent of God's love. Be glad to know that God will always be looking after you because he loves you.

Nathanial M Brandão Jr, Lar Batista Esperança, Rua Ten Cel Manoel M Ribeiro 233, Bom Retiro, Curitiba PR, Brazil

Medicinal plants for animal healthcare

by Ines Vivian Domingo



On the centre pages are listed plants commonly found in the tropics which have already been well researched, field tested, widely used and found to be effective by farmers. The plant parts used and their known uses, together with the method of preparation and administration are listed. (Most of the plants mentioned here may also be used for humans. However, one should first consult local herbalists for advice.)

The dosages indicated are for adult cattle and *carabaos* (buffaloes). Their young and smaller livestock like goats, sheep and pigs are given half this recommended dose. As with commercial veterinary medicines, dosages are partly determined by the animal's body weight, so the amount to be given to small adult cattle would be less than the dose for large

References:

Paraveterinary Medicine: An Information Kit on Low-cost Health Care Practices IIRR - YC James Yen Center, Philippines 1996

Medicinal Uses of Upland Vegetation (information sheet from Agroforestry Technology Information Kit) IIRR (International Institute of Rural Reconstruction), Philippines 1994 adult ones. Some of the dosages given are in ranges, such as $\frac{1}{2}$ –1 cup, because of the variations in the animals' size or weight. You should adjust the amount to be used accordingly.

Use only one plant medicine at a time. This way it will be easier to pinpoint the cause of the improvement in the animal's condition than if a mixture of many plants is used.

Planting, collecting, harvesting and processing

Although most medicinal plants grow naturally in the wild, farm families are best served if they grow them in their own backyards. If an animal gets ill, the plant is easily available without needing to walk long distances in search of the plant needed.

The appropriate time and method of harvesting medicinal plants is very important. Plants contain active ingredients (the compounds responsible for the plant's medicinal value) which are affected by things such as temperature, humidity and light, and the manner of handling during harvest.

In general, it is best to harvest in the morning on a warm, sunny day. Different plant parts require different methods of collection:



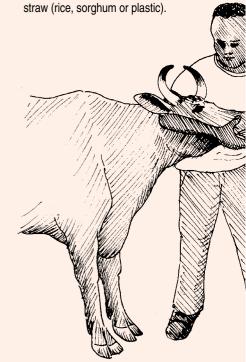
- Leaves and flowers should be handpicked.
- If the seed is to be used, the fruit must be fully ripe.
- If the whole fruit is to be used, it must be harvested before reaching maturity.

Drenching

Drenching is the forced pouring of liquid preparations down the throat of an animal.

Drenching can be used for all livestock.

During drenching, the
animal's head must be
raised so that the liquid
does not enter the lungs. A bamboo tube,
gourd or bottle (glass or plastic) can be used
for drenching ruminants and pigs. If a bottle is
used it must be strong and unlikely to break
and hurt the animal. For chickens, use a
syringe without the needle, a dropper or a



ANIMAL HEALTH

 Underground parts are best when collected before the plant starts flowering.

Collect only the recommended parts, since the relative distribution of the active ingredient varies within the plant body. Sometimes the roots or the seeds may contain more of the active ingredient or vice versa. Collect only from plants that are healthy, with no signs of injury, disease or any abnormality.

Proper drying is necessary if the recommended medicine needs to be dry or has to be stored for future use. The plant material can either be sun-dried or air-dried. Properly dried leaves crumble easily. Small amounts may be dried in a large transparent container such as an

uncapped large jar by a sunny window. Large amounts may be hung in bundles, baskets or mesh bags in open shade or spread on a clean mat in a warm dry place indoors. Do not dry on concrete pavements or rooftops as extreme heat will destroy some of the active ingredients.

Keep the dried plant medicines inside airtight containers. Moisture encourages the growth of moulds and other microorganisms (also insect infestation), resulting in the destruction of the active ingredient and the deterioration of the plant medicine. Store the container in a cool, dry place away from direct light. Finally, label the container, indicating the name of the plant and the date of collection.

Ines Vivian Domingo is the Coordinator of the SEA Media Support Program, Studio Driya Media, Jl Makmur 16, Bandung 40161, West Java, INDONESIA. She specialises in developing educational materials to support community development efforts. With 15 years' experience, she provides training in communication and media production and also carries out consultancy work.



FROM THE EDITOR

FOR MANY FAMILIES, the animals they keep often act as their bank, providing them with a source of income for use in emergencies or for special occasions such as weddings and funerals. The loss of an animal through disease is therefore a real blow. If healthcare for people is often not adequate, it is certainly true that in many countries healthcare for livestock may be completely lacking. In this issue we therefore look at ways of improving animal health, through the training of paravets, through mapping the distribution of diseases, through an understanding of some of the many herbal treatments available, and through sharing the skills of drenching and treating animals for parasites. Though the emphasis in the articles is on rural livestock farmers, the techniques could all be used in urban areas where, although livestock officers may be available, many families would be unable to afford their services.

Thanks to all those who have offered to act as regional advisers to the *Footsteps* Editorial Committee. We hope their role will improve feedback from *Footsteps* readers who don't get around to writing. Future issues will cover microenterprise, conflict management and sharing the results of research by the Editor into locally generated training materials and the exchange of new ideas within farmers' groups.

Isabel Carter

Ruminants – cattle, sheep, goats etc

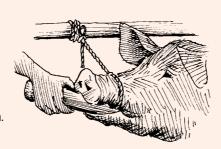
- 1 Tie the animal to a tree or pole.
- 2 Lift the nose until it is level with the animal's neck. Do not raise the head too high as this may interfere with swallowing.
- 3 Drench the medicine slowly. Do not pour the liquid too quickly into the animal's throat.
- 4 Allow time for the animal to swallow and breathe in between drenching. Do not pull the tongue out of the mouth; it needs to be free for swallowing. Lower the head immediately if the animal starts coughing.





Pigs

You can either set the pig on its side on the ground and have an assistant hold it down while drenching, or tie its upper snout with a piece of rope to a post. Hold the snout firmly and drench.



Chickens

- 1 If no assistant is available to hold the chicken, you can restrain the animal by holding it firmly with one arm against your body.
- 2 Hold the beak open and give the medicine.



Plants for animal healthcare

by Ines Vivian Domingo

BEFORE USING A PLANT FOR TREATMENT Be very sure you have identified the correct plant. If you are unsure, ask people with skills in using herbal treatments for their advice. Never use a plant unless you are sure it is the right one.

TO MAKE A POULTICE Pound and soften the fresh plant material. Mix with a little warm oil, apply to the skin and hold in place with a piece of clean cloth. Sometimes, mashed boiled rice or corn flour is used instead of oil.

TO BOIL LEAVES Use earthen pots if possible and boil for 15-20 minutes. Cool and strain liquid before using.

1 cup is approximately 200ml.

Bitter gourd

PARTUSED fresh leaves

TO TREAT anaemia, internal

parasites

METHOD M. charantia can

also be used as a dewormer. Pound the leaves and

extract the juice to

give as a drench in water 1-3 times within one

day. Repeat after 2 weeks.

Momordica charantia

Psidium

guajava

Moringa

PART USED fresh leaves

TO TREAT anaemia.

bleeding

METHOD The fresh leaves are rich

in iron. Give to

animals who do not usually graze, such as pigs. Pound a handful of leaves and give 5

drops (1cc) of the juice extract per piglet twice a day for 3-4 days.

Apply a poultice of fresh leaves to stop bleeding of shallow cuts.

Garlic PART USED cloves

Moringa

oleifera

Tamarindus

indica

TO TREAT poisoning

METHOD Burn 3 heads of ga pound and mix with of water. Give 1 gla mixture as drench the animal vomit. F

no vomiting occurs

Five-leafed ch

PART USED fresh leaves

TO TREAT cold, cough, fever

wounds

METHOD Boil half a kilo of

leaves in 2 litres of water. Give the liquid as a drench 2-3 times a day fo 3-4 days. Use as a

sponge bath to reli fever in animals. Boil fresh leaves a

liquid to clean scra

and wounds.

Tamarind

PART USED fresh leaves

TO TREAT cold, cough and fever

METHOD Boil a kilo of leaves in 4.5 litres of water. When cool, divide the liquid into small doses and drench the animal with 1 dose 2-3 times a day until the animal

recovers.

Boil the leaves and use liquid as a sponge bath to relieve fever in animals.



PART USED fresh leaves

TO TREAT wounds

METHOD Pound fresh leaves and

apply the juice or a poultice of fresh leaves to heal cuts and wounds.



Ginger

PART USED rhizomes

TO TREAT wounds

METHOD Pound fresh rhizor

and apply the juice a poultice of fresh leaves to heal cuts and wounds.

Zingiber officinale

Guava

PART USED fresh leaves TO TREAT diarrhoea,

wounds

METHOD Boil half a kilo of leaves in 3 glasses of water and use as a drench twice a day for 3-4 days.

> Boil fresh leaves and use the liquid to clean scratches, cuts and wounds.

Make a poultice from fresh leaves to stop bleeding of shallow cuts.

Ervatamia

PART USED juice

TO TREAT wounds

METHOD Pound fresh leaves and apply the milky sap or a poultice of

and wounds

fresh leaves to heal cuts

Ervatamia pandacaqui

Artemisia (mu

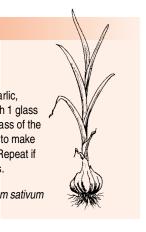
PART USED fresh leaves

TO TREAT wounds

METHOD Boil fresh leaves and use the liquid

to clean scratches cuts and wounds.

Artemi



Star apple

PART USED fresh leaves TO TREAT diarrhoea

METHOD Boil half a kilo

of the leaves in 3 glasses of water. Give as a drench using 1-2 cups of the liquid 3 times a day

Chrysophyllum cainito

Gliricidia

PART USED fresh leaves TO TREAT external parasites

METHOD Pound the fresh leaves and rub the juice on the affected area 2-3

times a day until the parasites are gone.

Gliricidia sepium





nd use the tches, cuts Vitex negundo



Coconut

PART USED water of young coconuts

for 1-3 days.

TO TREAT dehydration

METHOD The coconut water is given to animals with diarrhoea to prevent dehydration. Mix the water from 3-5 young coconuts with a cup of brown

sugar and a little salt and give 2-3 litres of the solution as a drench 3 times a day until the

animal recovers.

PART USED charcoal from coconut

shell

TO TREAT diarrhoea

METHOD Charcoal from

the coconut shell can help stop diarrhoea. Pound the charcoal and mix with feed. It can also be powdered, mixed with water and given as drench 3 times a day.

Dosage is 1 cup of the powder mixed in 500ml of water.

Camphor

PART USED fresh leaves

TO TREAT cold, cough and fever

METHOD Boil a handful of leaves

in 1 litre of water for 15-20 minutes. Use earthen pots for boiling if possible. Allow to cool and strain out the leaves

drench within 24 hours. Give ¹/₂-1 litre twice a

to relieve fever in animals.



Use the liquid as a

day for 1-3 days.

Boil the leaves and use liquid as a sponge bath

Banana

PART USED fresh leaves

TO TREAT bloat

METHOD Chop 3-5 leaves and feed to the animal twice

a day until it recovers. However, this remedy is

only good for mild cases or during the early stages of

bloat.



Blumea balsamifera

Musa sapientum





Alagaw

PART USED fresh leaves

TO TREAT cold, cough and fever,

infested wounds

METHOD Boil 8-15 leaves in 2-3 glasses

of water and

give ½-1 cup as a drench 2-3 times a day for 3 days.

Apply the juice from pounded leaves 2-3 times a day for 3-4 days to cure wounds with maggots.

Boil the leaves and use liquid as a sponge bath to relieve fever in animals.

Betel nut

PART USED fresh nut

TO TREAT intestinal worms

METHOD Pound the nuts and mix with enough water to give as a drench. Repeat after 2

weeks. Cattle and buffaloes would need 8-10 nuts; goats and pigs, 3; and chickens, 1.





Cocos nucifera

Premna

odorata

Mapping animal diseases

by Naftally Felix Omondi

TRANSMARA WESTERN
GROUP (TMWG) in Kenya is a small team of researchers which has volunteered to promote sustainable development.
Members encourage the use of traditional knowledge in agriculture to help relieve poverty. They work through extension training, research and by networking with NGOs in seminars and workshops.

One of the methods which they use with farmers and extension workers is the mapping of livestock diseases. Maps are drawn of the area and the natural features. Livestock diseases are then indicated on the map. This technique has many advantages. It is easy to use and flexible. It helps in planning how to treat livestock diseases in any area.

Method

- First select the best people to draw the map. If on the farm, this is obviously the farmer. If it is with a village community, then village leaders or elders are likely to be the best people. Maps can also be drawn at regional level by livestock development workers or extension agents.
- At village or farm level, make maps on the ground, using whatever local materials are available to illustrate forests, ponds, hills, villages etc. In office or workshop situations, people may prefer to use paper and pen. Choose items to represent particular livestock diseases common in the area. For example, maize kernels for east coast fever, beans for redwater, yellow flowers for foot and

mouth disease. Place one of these items to represent every known case of disease.

- Carefully record the information, location and number of cases of each disease.
- Discuss how to use this information in the future in planning how to treat disease cases.

Mapping at workshops

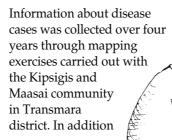
Workshops which bring together farmers and extension workers for a whole location provide an ideal opportunity of using mapping for livestock diseases. People first work in small groups, producing maps for their own area. These can then be compiled to produce a large map with information about livestock diseases for the whole location.

Once maps are finished, encourage discussion to draw out all possible information:

- Are diseases much more common in certain areas? If so, why might this be?
- How do people treat the diseases? Are there herbal treatments?
- What kinds of medicines are farmers able to buy and use? Is their use carried out safely?
- How easy is it for farmers to ask for help quickly from livestock officers?
- What are found to be the most serious diseases – causing either serious damage or death?
- What help can be provided in the future by the government livestock services?

Information gathered must be carefully recorded and a copy made of all maps, using coloured pens to indicate the incidence of different diseases.

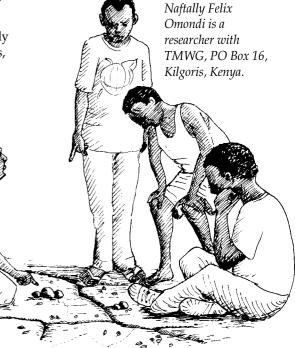
Results



to the detailed information collected about disease patterns and incidence, the following points became clear:

- Farmers are no longer able to dip their large herds of cattle regularly, owing to the rising cost of chemicals.
- Most tick-borne diseases are treated by local herbalists.
- East coast fever is the most serious disease and farmers are unable to afford the chemical treatment.
- Home spraying of animals is done mainly by women, who lack proper training and equipment.
- Lack of water is a serious problem in the area. This means herds travel several miles in search of water sources, greatly increasing the spread of ticks from wayside vegetation.
- There is a great shortage of extension workers, livestock workers and community workers from both government and NGOs.
- There is a lack of credit facilities available to farmers to enable them to buy chemicals and improve their facilities.

From the information collected and the understanding gained from the above points, future planning can now be based upon sound information. TMWG plan to produce locally produced, low-cost remedies with the help of traditional healers.



Making the most of...

a collection of ideas on storing and using it



Moulds for water jars

THE WATER DEPARTMENT in the Diocese of Kigezi, Uganda uses specially shaped wooden moulds which fit together to form the shape of a small water jar. Clay is used to smooth any gaps before plastering over the moulds with layers of cement. Once the mortar has set firm (within a day) the moulds can be removed through the lid of the

jar. The Department has about ten similar sets of moulds which can be reused over and over.

Water Dept, Diocese of Kigezi, PO Box 3, Kabale, Uganda

Ferrocement tanks

Andrew Maclean in Tanzania writes to say that he agrees with Willem Klaassen's views on moulds (Footsteps 32)...

WE MAKE UP A MOULD for the walls and roof together and then plaster the whole thing in one day. Then we strip out the mould through an access hatch in the roof and plaster the inside. Moulds let you press the mortar much harder, resulting in stronger walls and fewer

However, our tanks do not leak! In my experience the usual cause of leakage is using too much water in the mortar (this makes it weak and porous). If the mortar is shiny after mixing then there is too much water - it should be dull. Use as little water as possible to make a mix that can be plastered on.

Andrew Maclean MAF Tanzania

E-mail: MaraCPT@MAF.org



Pieces of the wooden moulds...



...fit together to form this shape.

Simple drip irrigation

SECADOS in Guinea, West Africa use a very simple drip irrigation method. A plastic bucket is tied up at shoulder level and a plastic hose is forced into a very small hole in the base. Small holes are made in the hose pipe (a heated nail works well) which is laid on the ground in vegetable beds. When water is poured into the bucket, it slowly soaks into the soil. Watering is much quicker and less water is wasted by evaporation.

BIBLE STUDY

Who's in charge of your life?

by Irene de Murillo

'Let your light shine before men, that they may see your good deeds and praise your Father in Heaven.' Matthew 5:16

On many occasions I have asked this question to community groups, 'Is anything impossible for God?' The answer is always a loud 'No!' Then I ask another question: 'Is anything impossible for God to do... through you?' The answer has always been a deep silence.

If we keep a close relationship with God through prayer and studying his word in the Bible, we may indeed be asked to do great deeds. Instead, however, we can often feel very small when things go wrong or when we are in trouble. But if we give our lives completely to Jesus then we can be sure that he will use us as he wants in both great and small ways. How can we

We have to recognise God's greatness Read Psalm 135: 5-13 and Hebrews 1:3. We



need to recognise that God is the creator of everything and that he supports us all with his mighty word.

We have to control our pride

Jesus served with love. He said, 'Follow me.' Read Mark 8:34-36. He taught that those who truly give their lives to him and surrender their rights, will be richly blessed in his eyes. He asks us to become his servants and give him all we have - just the opposite of what the world teaches.

We have to understand what God wants to produce in our lives.

Read Colossians Chapter 1:9-12. What role do other Christians have in helping us to fulfil what God is asking of us? What signs are there if our lives are being obedient to God's directing?

Irene de Murillo is the Executive Secretary of the National Council of the Christian Reformed Church of Honduras.

External parasites

PROTECTING YOUR LIVESTOCK

by Dr Avijit Haldar

THE WORD *PARASITE* means 'one who eats at another's table'. In other words, a living thing which lives off another animal (or plant). Livestock parasites are the small pests which live by taking nutrients (usually blood) from their animal host.

There are two kinds of parasites, those which live **inside** an animal's body, such as worms and liver flukes, and those which live **outside** on the skin. This article looks only at **external** parasites such as mites, ticks and lice.

an enormous problem.

In India, for example, it is difficult to estimate the actual financial loss, but these parasites reduce milk and meat production, reduce growth rate, reduce strength and ability to work, damage skin or wool and may even cause death. Livestock may become

thin with a rough coat and skin sores.

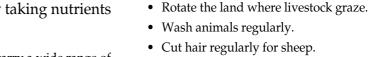
External parasites are

In addition, ticks carry a wide range of diseases such as babesiasis (red water), tick-borne encephalitis, anaplasmosis and others.

Rather than waiting until the problem of external parasites becomes serious, farmers should regularly treat their livestock to prevent any infestation of parasites.



- Seal with cement or mud all cracks in the floor and walls of livestock housing.
- Keep housing clean each day.
- Spray housing with an appropriate pesticide every two weeks if possible.



- Make ash from dry neem leaves, mix into a paste with water and smear this on the animal every two weeks to prevent parasites.
- If the neem treatment is not effective, spray or dip the animals with appropriate pesticide.

Use of pesticides

Various chemicals are widely used to control external livestock parasites. Early chemicals included sulphur, tobacco and arsenic compounds. These were replaced in the 1940s by chemicals such as DDT, Dieldrin and Lindane (chlorinated hydrocarbons) – now known to be very dangerous both to livestock and humans. These are now banned in most countries.

Organophosphorus chemicals such as Malathion and Diazinon were then developed and are still in use, though great care must be taken to avoid any contact with skin, eyes or mouth.

Another group of chemicals is called Organocarbamates, such as Carbaryl and Baygon. These are not so toxic and are in regular use.

The safest of all chemicals are known as synthetic pyrethroids, such as Fenvalerate and Deltamethrin. These are very effective but also much safer than any of the above chemicals. However, they are also very expensive.

Applying chemicals to livestock

Dipping This is very effective if large numbers of livestock need to be treated. If this is just for small animals such as sheep and goats, a 44 gallon drum can be used and the animals quickly lifted in



Cattle spraying at the Diocesan demonstration farm, North Kigezi, Uganda.

Note the lack of protective clothing and check with the list opposite to see what they **should** be wearing.

ANIMAL HEALTH



Dipping larger animals is easiest if a concrete bath is huilt. Dr Haldar is a lecturer and researcher in Bidhan Chandra Krishi Viswavidyalaya, PO Kalimpong, Darjeeling, West Bengal 734 301, India.

Take care with pesticides!

- Do not treat animals under a month old or any which are ill or sick.
- Do not treat livestock just before slaughtering check the time interval recommended for the pesticide used.
- Do not drink milk from cattle for three days after treatment.
- Store chemicals safely out of reach of children and irresponsible people.
- Wear gloves (or plastic bags) to avoid any contact with the skin. If there is any contact, wash immediately with soap and water.
- Wear protective clothing, goggles and face mask to avoid any chemical splashing into the eyes or mouth.
- Never use cooking pots to mix chemicals.
- Do not eat, smoke or drink while handling chemicals.
- Do not pour into rivers or ponds any unused solution which might kill fish or damage human health.
- Clean all containers and sprayers immediately after use.
- Wash yourselves and your clothes well with soap and water after treatment is finished.
- Take care not to damage the environment.

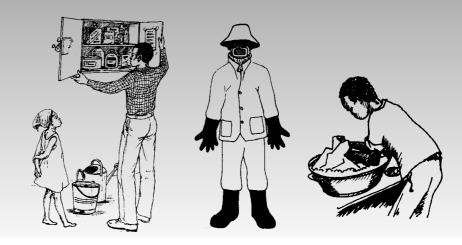
and out. Alternatively, a concrete bath can be built – especially if larger animals are to be dipped. Dipping should be done in the early morning, so that animals are not immediately exposed to hot sun. Dipping is not recommended if there is likely to be heavy rain soon after, as the chemical may be quickly washed off

Spraying is widely used and effective, especially if not too many livestock are to be treated. If no spray pump is available then the pesticide can be applied with a paint brush or a cloth or sponge on the end of a stick.

Dusting Here the chemical is applied as a fine dust. This is used especially for small livestock and poultry (see illustration above). Dusting is not very effective against ticks as the dust is soon lost, but it does control lice and mites

Injection There is a new form of pesticide known as a systemic pesticide such as Ivomac. This is simply injected into the animal.

Always use the recommended dosages for chemicals. Ask for help if you are not sure. Using too high a concentration will not kill more parasites. Instead, it may kill the animal and make you ill.



Footsteps No.34 13

RESOURCES

Mujer y Salud Mental

by Heve E Otero

Through this pamphlet, EIRENE hope to contribute to a better understanding of women's role in the family and in society. Their central objective is the pastoral and therapeutic care of the family. There is much useful data from a survey of the concerns and stresses on people today. This pamphlet will supply information and ideas to those working in development and family care.

The pamphlet costs US \$3 and can be ordered from:

EIRENE-Internacional Casilla 17-08-85-72, Quito Ecuador

Practical Pharmacy

This newsletter aims to ensure the safe and rational use of medicines worldwide by increasing knowledge and understanding of medicine management and supply, and by improving work practices. It is written for health workers who may have no specific training in this area of work but whose job involves medicine management and supply in developing countries. It is particularly useful to pharmacy assistants, pharmacists, nurses and doctors.

Topics covered to date include...

- essential medicines selection, ordering and storage
- the dispensing process
- medicine donations
- use of disinfectants
- medicine interactions.

The newsletter is free and produced four times a year. In order to keep costs as low as possible, organisations are encouraged to photocopy the newsletter and to distribute it to their health workers. Please write to:

Georgina Stock Heatherlands, Lydford, Oakhampton, Devon EX20 4AU UK

Where Women have no Doctor

This important new book, aimed at women living in places where there is no doctor, or where healthcare is not affordable, is written in similar manner to *Where there is no Doctor*.



The book uses simple language and has hundreds of illustrations to help women and girls from different cultures learn how to identify common medical problems and ways of treating them. The medical information is combined with an understanding of how poverty, discrimination and culture affect women's health and their access to health care. Subjects covered include sexual and mental health, diseases, pregnancy and childbirth, nutrition, disabilities and injuries. There is also a special section giving a list of common medicines with much information on their use and possible side effects.

This excellent book has nearly 600 pages and costs £9.25 including surface postage or £10.25 for airmail postage. Order from:

TALC PO Box 49, St Albans, Herts AL1 5TX UK

Agromisa Advisory Service

Agromisa produce the *Agrodok* series, now with over 20 of these practical books on all aspects of agriculture and food production and preservation. Many of the titles are also available in French, Spanish and Portuguese. Each book costs US \$8, though copies may be available free of charge to organisations working in Africa, the Pacific and Caribbean countries.



Agromisa also provide a free advisory service, sharing knowledge and advice on small-scale sustainable agriculture. Give all possible details about your problem.

For information about the *Agrodok* series or to use the advisory service, write to:

Agromisa PO Box 41 6700 AA Wageningen The Netherlands

Cassava Mosaic Virus Disease in Uganda

Due to its drought resistance, cassava is an important food crop in much of subsaharan Africa and elsewhere. Cassava mosaic virus is found in all the main cassava growing areas. However, in Uganda it has devastated the whole country, with many areas unable to grow cassava at all. This detailed study describes the disease and methods of control and management.

Single copies are available free of charge to educational groups, research institutions and nonprofit-making organisations in countries receiving British Aid. Write, using your official title to:

NRI Central Avenue Chatham Maritime Kent ME4 4TB UK



Dossier de développement Agripromo

This magazine (previously called *Agripromo*) is produced by Inades-Formation (African Institute for Social and Economic Development). It is produced as a folder of about 80 pages presented as separate booklets of 4–8 pages each. Each issue will be on one theme: the first will be on food security in Africa and the world; the second will be on natural resources.

Inades-Formation's objective is the training of adults in rural areas for social and economic advancement. They run a correspondence course in agriculture and

hold training sessions. They also run courses in development and management of small projects. To receive the review or for any further details, write to:

Inades-Formation, 08 BP 8 Abidjan 08, Ivory Coast Africa

Tel: +225 44 31 28 Fax: +225 44 06 41

De la santé animale au développement de l'homme: Leçons de l'expérience de Vétérinaires Sans Frontières

by Michel Bouy and Jo Casnière

This is No 51 in the series Dossiers pour un Débat and is a fascinating account of the work of vets sent out as volunteers to eleven different countries over the past 13 years. Many social, political and medical issues are raised in the varied situations experienced. VSF's first programme was one of emergency aid in 1984 in Mali, during a drought. Other programmes, for example in Central America, have followed after political disturbance, in the form of long-term development. VSF works in support of local organisations and national NGOs, and sees training as an essential part of their work. This book (171 pages) would be of interest to NGO workers, and contains many useful points, but would only be suitable for very fluent readers. It is available only in French.

The price is 35FF (Order Ref: DD.51) from

Charles-Léopold Mayer La librairie FPH 38 rue Saint-Sabin, 75011 Paris France

Tel/Fax: +331 4806 4886 E-mail: lib@fph.fr

Correction

We have recently been informed that the address we published in *Footsteps 33* for World Neighbours (distributors of the Studio Driya Media books on Dryland Farming) is incorrect. We apologise for any difficulties this may have caused. The new address is:

World Neighbours, 4127 NW 122nd Street, Oklahoma City, OK 73120-8869, USA

Paraveterinary Medicine: an information kit on low-cost health care practices

This information kit, written in simple language, is intended for paravets working in isolated rural communities. It is not designed to be a complete veterinary medicine reference material. Rather, it aims to present the health problems most commonly encountered by backyard animal raisers and some of the most effective, but simple treatments.

The kit is divided into four separate booklets on the following topics...

- Restraining animals and simple treatments
- Basic husbandry practices and veterinary care
- Disease control and treatment
- Herbal medicine for animals.

The kit costs US \$16.75 including airmail postage (US \$11.50 within Asia) and is available from the address below.

Ethnoveterinary Medicine in Asia: an information kit on traditional animal health care

Local veterinary practices have been carefully recorded for more than a decade now, but the results have been little used in development work. Little written information exists on practices that work and can be recommended. Without such guidelines, development professionals hesitate to encourage ethnoveterinary practices into their projects.

This information kit aims to overcome this limitation. The booklets provide a ready-to-use package on ethnoveterinary remedies and practices that can be recommended and used in villages. The kit is divided into four booklets, three on particular species: ruminants, swine and poultry and the fourth on general topics.

The kit costs US \$19 including airmail postage (US \$12 in Asia). Both information kits are available from...

Publications YC James Yen Center IIRR, Silang, Cavite 4118 Philippines

Fax: +632 522 2494

E-mail: IIRR@phil.gn.apc.org

Facilitadores de cambio

by Frances O'Gorman Published by MAP Internacional

This book provides a useful tool for those who wish to examine critically their own role in bringing change to the lives of the poor. Using a series of case studies, the author makes a timely and challenging analysis of the causes of poverty. This is followed by a critical examination of the role played by change agents, providing the reader with a broad framework within which they can then evaluate their own experiences.

The book, which is a translation of the original Portuguese, contains some terms and diagrams which may be difficult to understand. It costs US \$9 for a single copy but the cost for multiple copies is much cheaper. It is available only in Spanish and Portuguese.

Isla Española MAP America Latina Casilla 17-08-8184, Quito Ecuador

Fax: +5932 435500

Reviewed by Andrew Leake

¿Pueden los campesinos ser banqueros?

The first part of the book gives the history of rural credit since 1926, covering the experience of many different countries. Then there is a section on the different forms of credit institution: different kinds of banks, cooperatives, the Grameen Bank, support for small businesses and the role of the State. The third section is concerned with practical advice on setting up an agricultural credit bank, constructing a savings and credit network, strengthening present systems and evaluation.

The book (available only in Spanish) was written by members of IRAM, professional consultants in rural development with 40 years' experience worldwide. It costs US \$10 and can be ordered from:

SIMAS (Servicio de Informacion Mesoamericano Sobre Agricultura Sostenible) Apartado Postal A-136, Managua Nicaragua

Telefax: +505 222 56 52 E-mail: simas@nicarao.apc.org

COMMUNITY DEVELOPMENT

Working in groups

A meeting of the Bikyiiteng Farmers Group in northern Ghana.

A GROUP is a collection of three or more people who meet on a regular basis for a common purpose. People work in groups to achieve what they are unable to achieve on their own.



hoto: I Car

Groups usually produce bigger results. When people realise that change, of whatever kind, is needed, then working as a group is often the best way to achieve the change. Groups can be a force to reckon with in development work.

Attitudes towards Change

Not everyone reacts in the same way to change. The amount of active involvement in setting changes in motion varies from person to person. Attitudes towards change can be divided as follows:

Innovators A small percentage of community members react positively to change if they can see the benefits. Change stimulates them and they see it as a means of learning and development.

Traditionalists This group represents the majority of members of a community. These people prefer stability and the familiar situation to the risks and uncertainties of something new. They may also have had bad experiences of previous changes, making them resistant to all change.

Reactionaries A small number of people criticise and reject any change at all.

Any group wishing to bring about change should aim to use all known innovators in their work, encourage the involvement of as many traditionalists as possible, but limit the harmful influence of reactionaries.

If it is possible to succeed in getting a large number of people in favour of change, then there is a much higher chance of having it adopted.

Some ideas from Boubacar Bocoum – an instructor with the integrated development programme at PDI Saraféré UJC – AMRAD, Niafunké, Mali.

Group challenges

In a group, each member brings experience which may be of great help to the group. Gathering people's wisdom through sharing knowledge and experiences can help find solutions to problems. Such sharing can only be achieved in a relaxed atmosphere. A group may find it difficult to make progress if some members form sub-groups (cliques) or members refuse to cooperate in decision making for selfish reasons.

Groups are made up of a variety of people but there are several characters found in most groups:

Complainers They complain about almost every decision taken, no matter what the advantages. To these people, there is nothing good in other people's ideas.

Know-it-alls They believe only their ideas are right. They can convince others and form cliques for selfish reasons. Where cliques are formed for personal benefits, the group is likely to collapse.

Passive members They do not want to take responsibility for bad decisions. Group leaders should encourage these people to contribute ideas.

Reasonable members They are objective and consider their reasons carefully before contributing ideas. They are the hope and inspiration of the group.

Group potential

In a group, members should avoid individual tendencies, and learn from each other by reasoning, thinking and deciding together. Sound decisions will then result from 'group responsibility' and 'power'.

Group members will often observe each other, encouraging healthy competition to try to copy or outdo each other.

An organised and effective group is likely to attract the attention and sympathy of outside agencies.

How to form a group

- 1 Ideas usually come from a common need, but often just one person takes action.
- 2 Interested people are contacted and the ideas discussed further.
- 3 Influential people in the community are informed.
- 4 A formal meeting is planned, with leaders democratically elected.
- 5 The group may then be registered as an organisation.

What to look for in a group leader

- intelligent and clear thinking
- concern both for individual members and the group
- self-control and the ability to give necessary discipline
- approachable and a good listener
- inspiring facilitator and motivator
- good organiser
- able to sacrifice the necessary time.

Contributed by Gideon Njini – a consultant with Resources Management Consultants, PO Box 5011, Nkwen, Bamenda, Cameroon.

Published by: Tearfund, 100 Church Rd, Teddington, TW11 8QE, UK

Editor: Isabel Carter, 83 Market Place, South Cave, Brough, HU15 2AS, UK

