

JCN 91946  
PN-ABT-421  
008017  
008479 S

**SUMMARY OF COMMUNICATIONS CONSULTANCY**

21

5 June 1992 - 12 August 1992

Afghan Basic Veterinary Worker (BVW) Training Program

Mercy Corps International  
Tufts University School of Veterinary Medicine  
O/USAID/REP Afghanistan

by  
Diana Davis, B.A., M.A.  
Tufts University School of Veterinary Medicine  
North Graton, Massachusetts, 01536

25 October 1992

## PREFACE

---

The two main objectives of this short-term consultancy, as outlined in the Terms of Reference, were:

1. To develop graphic media (charts, pictorials, possibly flip-charts) which can be used in Afghanistan in support of the BVW program. Charts will consist of alerts of diseases which the BVW's will treat, as well as information on the BVW concept.
2. To define the role and responsibilities of women in animal health care in southwestern Afghanistan, especially among nomadic and semi-nomadic stock owners, to determine the position of women as a target audience for graphic media developed in support of the BVW program.

The first objective was achieved by developing two sets of flip charts, totaling 20 pages, and a large poster designed to support and augment the BVW program (see Leyland 1992, and Jespersen and Sherman 1992 for details on the BVW Program). The second objective was achieved by conducting and analyzing a series of interviews with Koochi (nomad) men and women in refugee camps in and around Quetta. Results and recommendations of this consultancy with respect to these two objectives will be outlined and discussed in the following sections of this report.

## LIST OF ACRONYMS

BVW -- Basic Veterinary Worker  
HERC -- Health Education Resource Center  
IRC -- International Resource Committee  
MCI -- Mercy Corps International  
PVT -- Paraveterinary Trainer  
UN -- United Nations  
UNDP -- United Nations Development Program  
USAID -- United States Agency for International Development

TABLE OF CONTENTS

---

Preface	ii
Table of Contents	iii
I. GRAPHIC MEDIA: The BVW Flip-Charts	1
<i>Flip-Chart #1: Internal Parasites</i>	2
<i>Flip-Chart #2: Vaccination and Management Practices</i>	2
II. WOMEN AND ANIMAL HEALTH CARE: Interviews and Analysis	4
<i>Results</i>	4
<i>Recommendations</i>	8
III. OTHER FINDINGS AND FURTHER RECOMMENDATIONS	10
<i>Traditional "Yunani" Medicines</i>	10
<i>Cashmere</i>	11
IV. SUMMARY	13
Sources	14
APPENDIX A BVW Flip-Chart Manual	15
APPENDIX B Interview Questionnaires, women and men	35

## I. GRAPHIC MEDIA: THE BVW FLIP-CHARTS

---

As a result of work on the first objective of this consultancy, two sets of flip-charts aimed at animal health care in Afghanistan have been produced in support of the BVW program. Approximately 750 sets have been silk screened by IRC's Health Education Resource Center (HERC) in Peshawar. The production of these flip-charts would not have been possible without the skill of MCI staff artist Nadir, and the very helpful technical input of Dr. David Sherman of MCI and Dr. John Woodford of UNDP.

The two flip-charts have been designed in an innovative format that covers veterinary topics which MCI has identified as both important and approachable in the Afghan context. The two flip-charts are used in conjunction with a larger poster that forms a border around the charts. It depicts the production cycle of sheep on a seasonal and monthly basis. This helps to illustrate the timing of important health interventions at appropriate times in the animals' production cycle. This large poster is also designed to be used separately as a promotional poster for the BVW's. It has a picture of a BVW, with his medical kit, at work in the center, inside the seasonal border. This picture is revealed when the smaller flip-charts are removed from the middle.

Key points addressed on each page of the charts have been printed on the back of each previous page in Pashto. The front pages, however, are completely free of text, expressing the information only in pictures. This format was used because often a large percentage of the BVW trainees are illiterate (from 20% to 80%). In addition, a written narrative manual has been written in English and Pashto to accompany the flip-charts in order to facilitate their use as teaching aides. The narrative is included here as Appendix A. The charts have been designed for use both by Paraveterinary Trainers (PVT's) to teach BVW's in MCI's BVW Training Program, as well as by the BVW's to promote animal health care awareness in their villages. The topics and the flip charts have been field tested on veterinarians, farmers, and livestock owners from Afghanistan and Balochistan. The topics covered are outlined below.

### *Flip-Chart#1: Internal Parasites*

Liver Flukes, Gastrointestinal Worms, and Lung Worms have been identified as problems of great importance for animal health and productivity in Afghanistan. The first flip-chart devotes nine pages to these topics (see Appendix A, pp. 16-24). For both Liver Flukes and Worms, first the life cycle, and then the clinical signs in affected animals are illustrated. Following this, treatment of clinical signs is shown, and finally, strategic dosing with anthelmintics for prevention of parasites is demonstrated.

### *Flip-Chart #2: Vaccination and Management Practices*

Vaccination and management practices are highlighted in this flip-chart, which includes seven major topics (see Appendix A, pp. 25-34). The first topic covers the importance of colostrum for newborns as well as the concept of passive transfer of immunity from vaccinated ewe to lamb through colostrum using the example of Lamb Dysentery (*Clostridium perfringens* type B infection). The first page shows a farmer drinking colostrum and the lamb dying from the symptoms of lamb dysentery. The second page shows vaccination of the pregnant ewe for *Clostridium perfringens*, the newborn suckling, and the lamb growing up strong and healthy.

The second topic is Lewantob (Pulpy Kidney, *Clostridium perfringens* type D infection). These two pages illustrate the clinical signs of Pulpy Kidney, and then the proper vaccination to prevent the disease.

The third topic covered is Anthrax. Clinical signs and proper carcass disposal are shown on the first page, and vaccination of both adults and newborns is demonstrated on the second page.

The fourth topic is shown on one page which illustrates proper vaccine handling as well as a summary "vaccine calendar" of the most important diseases for which we recommend vaccination.

The fifth topic introduces the section on management practices, starting with strategic feeding. The first page shows the results of too little feed during the winter in terms of low productivity and low live birth rate. The second page demonstrates giving extra feed during the last month of pregnancy in order to increase the ewes' productivity and the number of live births.

The sixth topic illustrates the clinical signs and common causes of bloat (tamba, tympany), in order to increase awareness and facilitate prevention of this potentially fatal condition.

The seventh topic addresses the problems of indoor housing in winter and respiratory disease on two pages. The first page shows too many sheep, with clinical signs of respiratory disease, crowded into a small, dirty building with no ventilation. The second page stresses the importance of incorporating ventilation and proper cleaning techniques to lower the incidence of respiratory disease.

## II. WOMEN AND ANIMAL HEALTH CARE: INTERVIEWS AND ANALYSIS

---

In order to meet the second objective of this consultancy, 35 interviews with men and women among Afghan Koochi (nomad) refugees have been conducted in and around Quetta. A sample of the questionnaires used during the interviews is included here as Appendix B. The goal of these interviews was to try to determine the comparative level of knowledge about animal health care and disease among Koochi men and Koochi women, and to determine the responsiveness of these men and women to graphic media targeted towards women working in animal health care. Two Afghans working for MCI, Karimullah Quraishi and Shah Jahan, DVM, made this possible by skillfully translating during the interviews.

Due to a transportation strike in Balochistan for a week in the middle of July, the interviews were necessarily delayed. Consequently, the analysis of the interview data was also delayed. This and some other unforeseen and unavoidable circumstances have resulted in a delay of the completion of this report. Completion of the analysis of the interview data has yielded interesting results and allowed several recommendations to be made. These are discussed in the following sections.

### *Results*

Each interview lasted for 1.5 to 2 hours. 100% of the women and 89% of the men were Koochi; all of them stated that they were ethnically Pashtun, from Afghanistan. Only 5% of the men and women reported owning any land when they lived in Afghanistan, the rest being completely nomadic. The average age of those interviewed was 47.9 for women and 50.7 for men. The average length of time living in Pakistan was between 10 and 11 years. Average family size was approximately 14 members. Although most reported owning no animals now, an over-all average of number of sheep currently owned was 7; goats, 4; and chickens 5. 10 different tribes and 10 subtribes are represented in this survey sample, all from southwestern Afghanistan. The majority implicated the war in Afghanistan, the presence of the Soviets, and the loss

of their animals (mainly sheep and goats) due to the war as the reasons they fled to Pakistan.

A "quiz" covering basic knowledge of animal health and disease was administered to 18 men and 17 women during the interview process (see Appendix B). Blind grading of these quizzes revealed that the comparative level of knowledge about animal health and disease between men and women among those Koochi interviewed was almost the same. On average, the men scored 57.27% and the women scored slightly higher with 57.88%. It is interesting to note that the four highest scores were all achieved by women. While these quiz results represent the most definitively quantitative assessment of the comparative level of animal health knowledge among Koochi men and women, other questions answered during the interviews shed some interesting and helpful light on the similarities and differences between men and women in the area of caring for animals in health and disease.

Milking and the production of milk products forms a large part of women's responsibilities for animals among the Koochi. 100% of women and 94% of men reported that this was the work of women. 41% of women also reported that caring for sick animals was their responsibility; whereas only 22% of the men reported this. In addition, 35% of women reported that they give food and water to the animals when they are not out grazing, and 6% of men agreed. When asked what women knew about animals that men did not know, 42% of the women stated that only they knew which animals produced the most milk and which had mastitis. 94% of the men said that women did not know anything that men did not know, with 5.9% admitting that women knew more about the care of newborns. 10.5% of women reported knowing more about birthing and care of newborns.

When asked who cleans the inside of an animal after it is killed for meat, 88% of women said that they did. 100% of men reported this as women's work. Asked which diseases or parasites they encountered while cleaning the animals, women listed a total of six, where men listed only two. 71% of women reported that they knew how to handle and restrain animals, 87.5% of men reported the same thing. When asked if women could handle and restrain animals better than men, 40% of men replied that they could, but 80% of women reported that they could not. Almost the same percentage of men and women (75% and 81% respectively) reported that women could administer medicines to animals with a shkur (an indigenous pilling device made from a hollowed out cattle horn).

The results of the quizzes and these other findings about animal health care among the Koochi strongly suggest that women have a knowledge at least comparable to, and perhaps better than, that of the men. In some areas, such as recognition of mastitis, and early detection of disease, it appears that women have better knowledge than the men because they spend more time in closer contact with the animals. In fact it may be that women are filling a gap in men's knowledge of animal health and disease, especially with respect to the udder, milking, and related diseases. Perhaps because women described more parasites and diseases in more detail in the carcasses they cleaned, women also seem to have a more in depth understanding of correlations between parasites, diseases and their symptoms.

In order to evaluate the responsiveness of Koochi men and women to graphic media targeted towards women working in animal health care, which would require some kind of teaching or training sessions, a second set of questions was included in the questionnaires.

The first question in this set asked if women ever give help or health care to animals. 59% of women said that they did give health care to animals and 45% of men agreed. 76.5% of women and 75% of men reported that if women were taught they could learn to give animals health care. When asked if women (after being taught) could provide health care to animals belonging to any man in their tribe, 82% of women said yes and 88% of men also said yes. For animals belonging to a man outside the tribe, 69% of women said they could provide health care for them, however, only 26.6% of men agreed.

When asked if women could receive training from men, 75% of women and 88% of men responded in the negative. However, 100% of women and 89% of men said that women could receive training from other women, even women outside the tribe, like myself. With respect to the location where any possible training should be held, 93.3% of women and 93.8% of men stated that it would only be possible in the family tent, or in the tent of a friend or family member near theirs. While 72.4% of men reported two weeks to be adequate for training, 46.2% of women stated that much more time would be needed (up to three months). Since 78.6% of women reported that training should take place during the winter, their preference for a longer training period may reflect their boredom during this season where there is little for them to do. Men were divided when asked about the best season for training, 37% chose winter, and another 37% chose spring. Only 19% chose summer, and 6% chose the fall.

When asked if women wanted this kind of training, 100% of women said yes, and 82.5% of men also said yes. The reasons women gave varied, including: making money; helping animals; teaching other women; wanting to learn; helping others; and, that women are more concerned about animals than men. The reasons men gave included: it is a good idea; it is good for the animal's health; we need training; women can train other women; but, it was also made clear that men prefer training for men first.

Purdah among women was reported to be observed by 58% of women. 69% of men also reported that women observe purdah. It is interesting though, that 57% of women said that women only observed purdah for the first two to three years after marriage, and 100% of men said that women only keep purdah from those outside their own tribe. In contrast, only 28% of women said that they keep purdah from those outside the tribe. Indeed, one woman told me that she could give health care to animals belonging to anyone, even outside the tribe, as long as they were Muslim. 81% of women stated that they could accept payment in cash from men for whose animals they had provided health care. On the other hand, 80% of men stated that women could not accept payment in cash from any man.

Men and women were more in agreement on the issue of women going to the bazaar. Asked if women could go to the bazaar to buy medicine for animals, 70.6% of women and 76.5% of men said no. 11.8% of both women and men agreed that old women could go to the bazaar. However, 100% of women and 89% of men reported that women could send men to the bazaar to buy medicines for them.

From these findings, it appears that both men and women among the Koochi are very receptive to the idea of training women in animal health care. Indeed, the majority of women are already actively involved in giving animals health care using indigenous methods of treatment. While women's mobility is somewhat hampered by cultural restrictions (e.g., not being able to go to the bazaar), men and women agreed that alternatives could be found, such as sending the men to buy the medicines needed. Almost all of the men and women interviewed stated that women wanted this kind of training, and would have the time to undertake it, especially during the winter.

### *Recommendations*

Based on the results of these interviews, several recommendations may be made.

1. Due to the extensive contact with, and responsibility for, animals among Koochi women, they would be very good targets for educational extension materials, such as graphic media (similar to the flip-charts already produced for the BVW program), to coordinate with and support the BVW program. The majority of women interviewed demonstrated a knowledge of animal health and disease comparable to, and slightly better than that of men. Importantly, women also appear to be filling a gap in some areas of men's knowledge of animal health and disease. For example, women demonstrated better understanding and knowledge of mastitis, milk production, and the correlations between parasites and diseases seen at butchering and cleaning and the symptoms they produce. Women also appear to have more knowledge about and experience with dystocias and care of newborn animals, both of which are critical periods in an animal's early struggle to survive to adult hood. These areas should be targeted in the extension materials.

2. Due to some cultural restrictions of mobility imposed on these women, introduction of educational extension materials in the form of graphic media locally (in their tents or villages) is preferable to a training program in a town or city similar to that already in place for the male BVW's. In consideration of the fact that the majority of men interviewed stated that they thought men should be trained first, this initiative should be implemented as an adjunct to the BVW training program. That is, these new graphic media oriented towards the women should be introduced to those women in the village or tribe from where the male BVW's were chosen. This would support and expand the impact of the BVW program. Women from the BVW's family may prove to be good candidates for this extension material. In this case, it would be possible for the men and women to work together effectively in animal health care.

These women should be encouraged to share information about animal health care with other women in their social groups. Indeed, 7.6% of men and 8.3% of women volunteered during the interviews that the main reason for women wanting training in animal health care was that women would share this knowledge with other women. Ideally, if a majority of women in the BVW's tribe or village could gain some familiarity with the extension materials, they would send more often for the male BVW to treat the

disease or condition they had recognized. This would expand the range, work load, and impact of the BVW, making his work more sustainable in the long-term.

The BVW's should also receive some orientation about these extension materials and their intended use and purpose during their training from MCI. This orientation should include coaching the BVW's to encourage the women to use the media and to be receptive to their input. They should also be coached on how to work with women on the issues of animal health care, to see them as helpers and not as competition, in an effort to coordinate and facilitate cooperation among the men and women, and to expand the impact of the BVW program.

3. Based on this review of the interview data, a list of potential topics for graphic media targeted towards women, most likely to be produced in the form of a flip-chart, has been developed. This list includes:

- early disease recognition, especially those diseases covered in the BVW course
- quarantining of sick individuals, which the women could do alone
- mastitis recognition and prevention
- external parasite control and prevention
- external wound management
- diarrheal diseases, causes, treatment and prevention
- proper cleaning of pens and feeding areas
- strategic feeding
- newborn care: sterilizing the umbilicus, importance of colostrum
- hoof care
- ventilation and decreased crowding in winter housing
- proper care of poultry, where appropriate

Several of these topics, such as diarrheal diseases, strategic feeding, importance of colostrum, and winter housing, overlap with information in the BVW training program. Extension efforts aimed at women and focused on these topics would enhance and facilitate the work of the male BVW's.

In addition, it may be possible to train some of the women, with the extension materials, to address some of these topics by themselves. These would include: quarantining of sick individuals, mastitis and external parasite prevention, proper cleaning of pens and feeding areas, strategic feeding, sterilizing the umbilicus, and possibly hoof care. Encouraging this kind of preventive health care for animals among the women could potentially have widespread impact on the health of the herd as a whole.

### III. OTHER FINDINGS AND FURTHER RECOMMENDATIONS

#### *Traditional "Yunani" Medicines*

An extra set of questions was written into the questionnaire to try to determine the prevalence of use and efficacy of traditional or "yunani" medicines for animals commonly used by the Koochi. The results of these questions suggest that the reported use and efficacy are significantly widespread and good enough to warrant some drug trials against commercial veterinary medicines. The benefit to such trials would be that if some of the traditional medicines are at least close to commercial medicines in efficacy, promoting their use in the BVW program would greatly increase the program's long-term survival, impact, and sustainability.

Of those asked, 54% said that they never solicited the help of anyone for their animals' health problems when they were in Afghanistan. 96% reported using the traditional treatments for their animals. These traditional medicines, use and efficacy as reported in the interviews, are included in the following table.

MEDICINE	USED FOR	%USED IT	%EFFICACY
Padz/stani(ear vaccine)	Buzmarg	81	86
	and Sheep pox	61	88
Gambila	GI Worms	96	93
Khowree	Cough	92.5	95
Korai	Trauma	66	90
	and Cough	37.5	85
	and Sunstroke	20	80
Niltotia (CuSO <sub>4</sub> )	Garg	96	83
Sakhrwai	Cough	92.5	87
Zerna (pine tar)	Poon	54	94
	and Nasal bots	20	90

Other traditional medicines reported used are:

henna for cough;	eggs for bloat;	hamazuri for gandari in camels;
ghorezai for garg;	tobacco for frostbite;	oil and milk for frostbite;
oil and dates for frostbite;	garlic for sunstroke;	layghouni leaf for poon;
obasta for lung worms/pneumonia;		dried apricots for sunstroke;
gandaizoye for cough, worms, garg, and frostbite;		vegetable oil and tea for bloat;
smoke of layghouni for brain and lung worms;		and oil and black sugar for frostbite.

Limitations of time and the respondents' patience precluded gathering any further information on these traditional medicines.

It appears that those interviewed perceive commercial medicines to be better even though they reported such high efficacy rates for their traditional medicines. They explained some of their reasons for this. 60% found commercial medicines to be more efficient and to give better results; 10% said that commercial medicines are more disease specific. Although 100% reported commercial medicines to be more expensive, 10% said that they were less likely to harm the animals. 73% said that traditional medicines could be harmful, especially at high doses. For example, 52% reported Niltotia (copper sulfate) to be harmful to animals in high doses. One person said that it would be good if veterinarians learned about the traditional medicines so that they could teach the people how to use them properly.

Based on these results the recommendation is made that some drug trials be carried out between commercial and Yunani medicines. Only those which have been reported to be fairly disease specific should be tried at first. A good example would be Gambila, a powder readily available to the Koochi. 96% use it for GI worms. A trial against a commercial dewormer would potentially be of benefit to the BVW program if Gambila has experimentally produced, efficacious results. Its use would reduce costs and increase the impact and sustainability of the BVW program. Khowree, a plant, Korai, also a plant, and Zerna, pine tar, might also be good candidates for controlled drug trials.

### *Cashmere*

One area in which information volunteered by the respondents was especially interesting is that of cashmere produced by the goats in Afghanistan. Due to this

information, about half way through the interviews some questions relating directly to goats and goat fibers were added to the questionnaire. The information obtained has revealed the possibility of a long-term economic development project aimed at women among the Koochi involving harvesting and selling cashmere.

The dark, outer coat of these goats is known to the Koochi as "ouzghani," and the soft undercoat of cashmere is known as "pakha." 61% of those women asked reported using ouzghani for making their black goat hair tents. 58% of the men reported the same thing. It is also sometimes used to make ropes, sacks, and carpets. Tent making, and all production of sheep and goat fiber products is done exclusively by Koochi women. Goat hair is cut from the animals once a year by the men. Women collect and separate the ouzghani from the pakha.

28% of women said that they used pakha to make ropes, while 27% said they sold it. 44% of men said that pakha was used to make tents, and 33% reported that pakha was sold. Pakha is also used to make robes, udder bags for the animals, pillow stuffing, carpets, scarves, and sometimes it is just thrown away.

100% of both men and women reported that ouzghani was more useful to them than pakha because they made their family's waterproof shelter from it. When pakha is sold, it may be taken by the men to a village or local bazaar (50% of women said this), or a merchant from a city may come to the Koochi to buy from them (50% of women reported this). Prices quoted from roughly 10 years ago ranged from 30 Afghanis/kilo to 1000 Afghanis/kilo. When asked, 100% of women said they would keep the money and spend according to their own wishes when pakha was sold because they had collected and prepared it. 100% of those asked said that these goats are very easy to find. In fact they said that all Afghan goats have pakha.

Because the majority of those asked expressed a keen interest in the possibility of collecting and selling pakha if someone would buy it, this consultancy recommends developing a project to facilitate this. It would be a long-term economic development project aimed primarily at women. The costs of such a project should be fairly low since the indigenous knowledge of collecting and separating the fibers is adequate preparation to sell cashmere on the international market. The most challenging part of the project would be the creation of a market and the establishment of collection facilities and transport. It may be possible to add this as an adjunct to the BVW program, especially if the recommendation to expand the BVW program to include graphic media extension materials for women is undertaken. If so, a section of the extension materials should incorporate information on cashmere.

## SUMMARY

---

This consultancy has achieved the development and production of 750 twenty page flip-charts to support MCI's BVW program, complete with manuals in Pashto and English. The main topics covered are prevention and control of internal parasites, vaccination and management practices. These topics were selected as some of the most important and approachable among those covered in the BVW program, and thus support and augment the impact of this program.

Based on random interviews with 35 men and women Koochi refugees, this consultancy has demonstrated that Koochi women have extensive contact with and responsibility for animals. Areas in which women enjoy an almost exclusive knowledge and expertise are milking, production levels, and mastitis. A "quiz" administered to both men and women and graded blindly revealed that on average, women have slightly better knowledge than do men (scores were 57.88% and 57.27% respectively) of animal health and disease.

These findings form the basis of the recommendation that a set of flip-charts be developed for women, aimed at these and other topics largely relating to disease prevention. These charts can be used as educational extension materials for women, as an adjunct to the BVW program. That is, women from the tribes or villages from which the male BVW has been chosen would be trained (locally and by other women) using these charts to perform some interventions themselves, and to recognize those disease conditions that require the expertise of the BVW in the area. Such a project will expand the impact of the BVW program and raise the level of health care for animals even further. The majority of those men and women interviewed were very enthusiastic about this idea and agreed that women wanted to do something like this.

Other findings from the interviews include that of the high prevalence and efficacy of traditional "Yunani" medicines used by the Koochi. These results suggest the recommendation of running some drug trials between Yunani medicines and commercial medicines for specific disease conditions. If their efficacy is shown to be as good as reported in the interviews, incorporation of Yunani medicines into the BVW program would not only lower costs significantly, it would increase the long range sustainability of the project, and the self-reliance of the BVW's. This recommendation

extends to testing and incorporating indigenous technologies which are already familiar to the Afghans such as the "shkur" instead of a pilling tube or gun.

A further recommendation based on the results of these interviews is the establishment of an economic development project primarily for women designed to harvest and sell cashmere from their goats. Many Koochi do not need or use a lot the cashmere from their goats, but they do prepare it adequately for sale because they separate it from the outer coat in order to make their tents. They reported that all Afghan goats have cashmere. This would be a long-term economic development project that could be incorporated into the recommended women's adjunct to the BVW program discussed above.

#### SOURCES

---

- Findlen, Catherine (1990) Afghan Koochi Animal Management Practices: An Ethnoveterinary Study. A report to MCI and Tufts University.
- Jespersen, Myron and David Sherman (1992) Private Sector Health Initiative: A Joint Venture Proposal Request for Continuation of Funding for Year 2. A report submitted to USAID.
- Leyland, Tim (1992) A Report of the Evaluation of Mercy Corps International's Animal Health Program for Southwest Afghanistan. A report to MCI and USAID.

Appendix A

**Veterinary Flip Chart Manual**

## **LIVER FLUKES, GASTROINTESTINAL, and LUNG WORMS**

### **LIVER FLUKES**

**INTRODUCTION:** There are 4 pages in this series. The purpose of this series is to demonstrate the life cycle of liver flukes, to show the signs and symptoms in infected animals, and to show both treatment of clinically affected animals and strategic (preventive) control. All of these pictures have been designed to be used in conjunction with the pictures on the border which depict the seasons and the reproductive cycle of small ruminants. Both the border and the frames of the individual picture pages are designed to be read in a counter-clockwise direction, usually beginning in the spring. Please keep this in mind and use the seasonal border often when explaining these pictures.

### **PAGE 1: LIFE CYCLE OF LIVER FLUKES**

This page illustrates the basic life cycle of the liver fluke. It is designed to emphasize the close relationship between irrigation canals and other stagnant water supplies, snails and high infection rates. The infected sheep is shown contaminating the pasture with its feces which contain infective eggs. The eggs in the feces which land in or near the water hatch and infect the intermediate host, an aquatic snail. In the snail the parasite multiplies several

hundred times. After multiplying in the snail, the larva leave the snail and crawl onto the grass where they form cysts. This is the infective stage for grazing animals. It takes about 4 - 5 weeks for the flukes to develop from eggs to the infective cyst stage. After the animals eat the infective cysts, the larvae break out of the cyst and migrate through the liver for 7 - 8 weeks. Then they mature into adults and start laying eggs. The entire life cycle takes about 14 - 18 weeks. Grazing near slow-moving water supplies such as irrigation canals greatly increases infection rates with liver flukes.

#### PAGE 2:CLINICAL SIGNS OF LIVER FLUKES

This page demonstrates the clinical signs of animals infected with liver flukes. Beginning in the summer season(frame 2), healthy animals are shown grazing near a canal and becoming infected. The next frame(3), in the autumn, shows some of the clinical signs in young animals including thinness and diarrhea. The winter frame(4) depicts one animal dead from acute fascioliasis and another with very serious symptoms including bottle jaw, emaciation, and diarrhea. Point out these clinical signs on the picture. No lamb is shown in the spring(frame 1) in order to emphasize that animals infected with liver flukes are not likely to produce live offspring. This animal is also shown infecting the pasture.

**PAGE 3: TREATMENT OF CLINICAL SIGNS OF LIVER FLUKES**

Treatment of infected animals showing clinical signs is illustrated in this page. As often happens, animals become infected and show clinical signs in the autumn, before the time for strategic control of flukes (see p. 4). In this case, it is wise to treat with Fasinex in order to save the lives of the infected animals. Treatment is shown being given to animals with clinical signs in the autumn(frame 3). They were infected from grazing near an irrigation canal, as shown in the summer(frame 2). The winter frame(4) shows healthy, normally thin animals. The "X" over the liver indicates that the liver flukes have been killed by the Fasinex. The spring frame(1) shows healthy, productive animals with a lamb. You should point out that if treatment of clinical signs occurs early in the autumn, before it freezes, that it is wise to administer Fasinex again for strategic control of liver flukes after it freezes as shown in PAGE 4.

**PAGE 4: STRATEGIC CONTROL OF LIVER FLUKES**

Strategic control of liver flukes with Fasinex is illustrated in this page. Beginning with the autumn season(frame 3), healthy animals are shown becoming infected but not yet showing symptoms. Fasinex is administered just after the first hard freeze, sometime in late November or early December, depending on the region(frame 4). Many of the snails have died or are sleeping in the mud at this time. Therefore, it is the best time to break the life

cycle. The "X" through the liver fluke in the larger sheep indicates that the Fasinex has killed the liver fluke(frame 4). The other sheep will also be dosed with Fasinex. Spring time(frame 1) shows healthy, non-infective, and productive animals with offspring (as indicated by the lamb).

The summer frame(2) is set in the mountains, away from any irrigation canals to emphasize the use of alternate water sources when possible. In this case, the alternate water source is a fast-running mountain stream, with no snails and no grass near it. This would be a good place to emphasize that any alternate water source, with no grazing nearby is the best management practice to avoid infection with liver flukes. This is also a good place to explain that the animals of sedentary farmers are at a higher risk of fluke infection than Koochi animals because the animals of the Koochi are not crowded into one place near irrigation canals as often as are the animals of sedentary farmers.

## GASTROINTESTINAL & LUNG WORMS

**INTRODUCTION:** There are 5 pages in this series. The purpose of this series is to demonstrate the life cycle of gastrointestinal and lung worms, to show the clinical signs and symptoms in infected animals, and to show both treatment of clinically affected animals as well as strategic (preventive) control.

### **PAGE 1: LIFE CYCLE OF GASTROINTESTINAL AND LUNG WORMS**

This page illustrates the basic life cycle of Gastrointestinal and Lung Worms. Beginning at the top of the page(frame 1), it shows an infected animal contaminating the pasture with feces which contain worm eggs. The next two frames(2 and 3) show close-ups of the worm larvae hatching and crawling onto blades of grass. This makes it more likely that the larvae will be eaten by a grazing animal. The frame at the bottom of the page(frame 4) shows uninfected animals grazing the contaminated pasture. The next frame(5) illustrates that they have become infected from grazing the contaminated pasture. They, in turn, will further contaminate the pasture, as shown again at the top of the page(frame 1). Under ideal climatic conditions, the life cycle takes only 3-4 weeks to complete. Over crowding of the animals and dirty living conditions greatly increases infection rates of these worms.

**PAGE 2:                    CLINICAL SIGNS OF GASTROINTESTINAL WORMS**

This page demonstrates the clinical signs of animals infected with Gastrointestinal worms. Beginning in the late summer and autumn(frames 2 and 3), infected animals contaminate the pasture with their feces containing worm eggs. During the autumn, if infection becomes heavy, the animals will develop clinical signs including diarrhea, emaciation, anemia, and bottle jaw(frame 3). Point out these clinical signs on the picture. These clinical signs become most severe in the late autumn and early winter, especially in the 8 to 9 month old lambs. These young animals are most susceptible because they have not yet developed a strong immunity against these worms. The winter frame(4) shows a young sheep which has died from a severe Gastrointestinal worm infection. The adult sheep is thin and weak but survives the winter and is shown infecting the pasture in the spring(frame 1). The spring is the second time when animals are likely to show clinical signs. In the spring, however, it is most common for only the lambs to show signs, as the adults have been exposed to worm infections previously and thus have some immunity to infection. A young lamb is shown in the spring frame with clinical signs including diarrhea, thinness, and bottle jaw. Clinical signs do not develop in the hot summer or cold winter (after freezing) because the worms go into an inactive state during these unfavorable climatic conditions.

**PAGE 3:                    CLINICAL SIGNS OF LUNG WORMS**

Clinical signs of animals infected with lung worms are illustrated on this page. Infection from contaminated pastures begins to build up inside the animals in the autumn(frame 3), especially under crowded conditions. Clinical signs are usually the most severe in the early winter. The winter frame(4) illustrates these signs including nasal discharge, gasping with an out-stretched neck, and fast breathing. Point out these signs on the picture. These signs are caused by the migrating larvae burrowing through the lung tissue. This frame(4) also shows a young lamb dead from infection with lung worms, demonstrating that young animals are the most vulnerable to infection. The spring frame(1) shows that the adult sheep survived its infection and is able to contaminate the pasture with eggs passed in the feces. The summer frame(2) shows this same animal infecting the pasture in the late summer, leading to infection build up in the autumn. It is important to understand that lung worm infections can predispose animals to respiratory diseases caused by microbes. This is especially a problem in the winter under crowded housing situations.

**PAGE 4:                    TREATMENT OF CLINICAL SIGNS OF WORMS**

Treatment of clinical signs in animals heavily infected with Gastrointestinal worms is illustrated on this page. Animals often become infected and show severe clinical signs before the time for strategic dosing (see p. 5). In these cases, you must treat with Panacur in order to save the lives of

the sick animals. These signs may occur anywhere from September up until the first freeze. Treatment with Panacur is demonstrated during the autumn frame(3), while the animals are showing clinical signs including diarrhea, bottle jaw, and emaciation. The winter frame(4) then shows the animals which were treated as healthy but rather thin sheep, as is usual at this time of year. Clinical signs may develop again in the spring, as explained in page 2. The spring frame(1) shows that animals must again be treated with Panacur in order to save their lives. Although young animals are more likely to show clinical signs in the spring, all animals should be treated even if only some are sick. The summer frame(2) shows healthy sheep after treatment in the spring.

This page may also be used to discuss treatment of lung worm infections. The same drug, Panacur, is used to treat Gastrointestinal and Lung worm infections. Therefore, if an animal is treated for Gastrointestinal worms in the autumn, the lung worms will also be killed, and clinical signs will not develop as severely. If treatment occurs too early in the autumn, however, Lung worm infection may again build up, and clinical signs may be seen later in autumn or winter. You may refer back to page 3, clinical signs of lung worm infection, to help explain treatment of lung worm infection in conjunction with this page.

**PAGE 5: STRATEGIC CONTROL OF GASTROINTESTINAL AND**  
**LUNG WORMS**

Strategic control to prevent clinical signs of GI and Lung worm infections is illustrated on this page. In order to break the life cycle of the parasites, Panacur should be given in late autumn/early winter, preferably after the first hard freeze. The autumn frame(3) shows treatment of apparently healthy animals with Panacur in the late autumn/early winter. This will kill any worms infecting these sheep and prevent the development of clinical signs of disease. The next frame(4) shows the second time for strategic dosing. This dose of Panacur should be given to the sheep about 1 month before parturition. This is usually in early February in southern Afghanistan, but may be later in more northern areas or higher altitudes. None of these animals are showing clinical signs of disease. If this strategic dosing is done, the sheep will be very healthy, and pasture contamination during the early spring will be reduced. Therefore, newborn lambs will not pick up such heavy worm burdens when they begin to graze. Because they are more healthy, the ewes' productivity will go up, as indicated by the healthy ewe and lamb illustrated in the spring frame(1). The summer frame(2) shows the ewe and lamb staying healthy following the strategic dosing.

## VACCINATION AND MANAGEMENT PRACTICES

INTRODUCTION: The purpose of this 11 page series is to illustrate good vaccination procedures and animal management practices. Lamb Dysentery (Rikhack), Pulpy Kidney (Lewantob), and Anthrax (Tack) are covered in the vaccination section. The importance of colostrum in passive immunity and proper vaccine handling are covered in this section as well. The management section illustrates strategic feeding, feeding practices associated with bloat (Tamba), and proper winter housing and ventilation to reduce respiratory disease. All of these pictures have been designed to be used in conjunction with the pictures on the border which depict the seasons and the reproductive cycle of small ruminants.

### PAGE 1: LACK OF COLOSTRUM & SIGNS OF LAMB DYSENTERY (RIKHACK)

This page shows the ram and ewe mating in the fall (Frame 3), and the pregnant ewe during gestation in the winter (Frame 4). After the lamb is born in the spring, the farmer is shown in Frame 1 taking the colostrum from the ewe and drinking it himself. Because the lamb was not allowed to drink the colostrum during the first day of its life, it is not strong and healthy. The lamb did not receive the protection against disease provided in the colostrum. The lamb is shown in Frame 2 with Lamb Dysentery (Rikhack), including clinical signs of diarrhea and sudden death. Newborn animals that do not receive colostrum at birth are very likely to get infectious disease and die in the first two weeks of life.

**PAGE 2: VACCINATION FOR LAMB DYSENTERY & BENEFIT OF COLOSTRUM**

This page shows the ram and ewe mating in the fall (Frame 3). The pregnant ewes are vaccinated in mid-December and in January (Frame 4), approximately 1 month apart for Clostridium perfringens type B (Lamb Dysentery). The second dose of vaccine should be given about 4 to 6 weeks before the birth of the lamb. As soon as the lamb is born, it is shown suckling and drinking colostrum in Frame 1. The colostrum contains protection against Lamb Dysentery from the vaccinations given to the ewes when they were pregnant. Because the lamb drank the colostrum, it grows up healthy and strong, much less susceptible to disease, Frame 2. This page, then, emphasizes the importance of colostrum for newborns as well as the benefit to the lambs of vaccinating ewes for Clostridium perfringens type B (Lamb Dysentery) in late gestation.

**PAGE 3: CLINICAL SIGNS OF PULPY KIDNEY (LEWANTOB)**

This page demonstrates the clinical signs of lambs infected with Clostridium perfringens type D (Pulpy Kidney). Frame 3 shows mating in the fall. Frame 4 illustrates pregnant ewes during the winter months. Frame 1 shows ewes with newborn lambs in the spring. These lambs look very healthy and fat. By 3 to 4 months of age, when young lambs are on green pasture, the clinical signs of Pulpy Kidney (Lewantob) begin. Usually the fattest, healthiest lambs are affected first. Frame 2 shows the clinical signs which occur in the summer including loss of appetite, painful abdomen, tucked-up posture, bleating, circling, convulsions and death. An abrupt change in pasture from poor grazing to lush green grass is associated with the development of these clinical signs.

**PAGE 4: VACCINATION FOR PULPY KIDNEY (LEWANTOB)**

This page illustrates the benefit of vaccinating lambs at the proper times for Clostridium perfringens type D. Frame 5 shows pregnant ewes during the winter months. Frame 1 shows newborn lambs suckling in the spring. Frame 2 demonstrates the BVW vaccinating the lambs for Pulpy Kidney (Lewantob) in the late spring when the lambs are 1 to 2 months old. A second dose of vaccine is given 2 to 3 weeks later in Frame 3. The time interval of 2 to 3 weeks is indicated by the different phases of the moon illustrated in the insets. Frame 4 shows healthy lambs with the ewes during the summer. They were protected from disease by the vaccines given in the spring.

PAGE 5: CLINICAL SIGNS OF ANTHRAX (TACK) & PROPER CARCASS DISPOSAL

This page demonstrates the clinical signs of animals infected with Anthrax (Tack) as well as the proper procedures for disposing of infected carcasses. Clinical signs of Anthrax occur most often in the fall. Frame 1 shows sheep during the late summer returning from the highland summer pastures. Frame 2 shows the sheep grazing on stubble left in the village fields after harvesting. The infective spores of the Anthrax microbe are often found in the soil. When sheep graze the stubble close to the ground, they may ingest these Anthrax spores. Frame 3 demonstrates the clinical signs of animals infected with Anthrax. The signs include sudden death (the most common sign), blood running from the nose, mouth and anus, and soft, edematous swellings under the skin.

Frame 4 illustrates proper procedures for disposal of animals that have died from Anthrax in order to prevent the spread of the disease. A hole at least 1 meter deep should be dug and the carcasses of animals suspected of dying of Anthrax should be put inside it. Anthrax can be transmitted to humans and may be fatal. It is important not to eat the meat of animals which have died from Anthrax. After the carcasses have been placed in the hole, tires should be placed on top and a fire should be lit. Frame 5 shows that the carcasses should be completely burned. This will kill the Anthrax spores in the dead animal which can survive in the soil for many years if the animal is not burned and buried. After the burning is complete, Frame 6, the hole should be filled in and all the soil infected by the sick animals (from blood or feces) should be buried as well.

**PAGE 6: VACCINATION FOR ANTHRAX (Tack)**

This page shows the proper times for vaccinating against Anthrax. The sheep are shown returning from the summer pastures in Frame 2. Frame 3, the fall, shows the best time to give the annual vaccine (booster) to adult animals. Giving them their booster for Anthrax in the early fall will help to prevent the disease when they are turned out to graze stubble in the fields, as shown in Frame 4. Frame 5 illustrates healthy animals during the winter, protected from Anthrax from the vaccine given in the fall. Frame 1 demonstrates the best time to vaccinate lambs in the spring. Lambs should be vaccinated for Anthrax twice. The first dose should be given when they are 4 to 6 weeks old, and the second dose about 2 to 3 weeks later. These lambs should also receive the booster vaccination during the fall when they are approximately 7 to 8 months old (Frame 3).

**PAGE 7: VACCINATION HANDLING & CALENDAR**

This page summarizes the vaccination schedule recommended in this flip chart. It also illustrates some important points for the proper handling and timing of vaccines. Frame 2 emphasizes that no vaccinations should be done during the summer months when it is very hot. This is because high temperatures kill and destroy the vaccines. If vaccines are given during the summer, they will probably have little or no protective effect against disease. Frame 3 shows that fall is the best time to vaccinate adults and 8 month old lambs against Anthrax. The weather is cool enough during the fall that it is safe for the vaccine to be transported.

Frame 4 shows that winter is a good time for vaccination because the cold temperatures help to preserve the good effects of the vaccine. Winter is the best time to vaccinate pregnant ewes for Clostridium perfringens type B, to prevent Lamb Dysentery in the lambs which will be born in the spring. The vaccine should be given to the ewes twice, about 1 month apart, the second dose given about 4 to 6 weeks before birth. Winter is also a good time to vaccinate for Contagious Caprine Pleuro Pneumonia (CCPP, Buzmarg). This vaccine is very fragile, and must be kept very cold during transportation. Vaccination of pregnant ewes, in the latter half of pregnancy may induce abortions. Therefore, vaccinating in early winter (November, December & January), as soon as it is cold enough to transport the vaccine would be the best approach.

Frame 1 shows lambs being vaccinated in the spring. This is a good time to vaccinate lambs against Anthrax. Two doses of vaccine should be given, beginning at 4 to 6 weeks of age. The second dose of Anthrax vaccine should be given about 2 to 3 weeks later. The spring is also a good time to vaccinate lambs for Clostridium perfringens type D (Pulpy Kidney, Lewantob). Two doses of vaccine should be given. The first dose should be given when the lambs are 1 to 2 months old, and the second 2 to 3 weeks later. Attention must be paid to the expiration dates of the vaccines. If a vaccine is past the expiration date marked on the bottle, that vaccine will not protect an animal against disease. Keep in mind that vaccines will rarely be able to be stored for more than 6 months and still be effective.

#### PAGE 8: CLINICAL SIGNS OF STARVATION AND MALNUTRITION

This page shows the bad effects of food shortages during pregnancy. Frame 2 shows poor grazing for the animals during a year with very little rain. As a result, the animals have not built up a sufficient supply of fat. Frame 3 shows the animals in the fall, again with very little to eat. They are already getting thin. Frame 4 demonstrates one ewe dead from starvation and the other two ewes very thin. Frame 1 illustrates the results of malnutrition during pregnancy. One lamb was born dead and the second lamb is very thin and small. The farmer is milking the sheep, and he is unhappy because she is producing very little milk (indicated by the almost empty milk jar). Emphasize that pregnant ewes with little feed are very likely to die because they must share their limited food with the growing baby.

**PAGE 9: STRATEGIC FEEDING**

This page demonstrates the benefits of providing extra feed to animals during important stages of their reproductive cycle. Frame 2 shows the farmer feeding extra food during the month before mating, usually around August or September. Extra food given during this time will increase the number of ewes that become pregnant and the number of lambs born. Frame 3 shows mating between the ram and a ewe. Frame 4 illustrates pregnant ewes in normal condition for the winter, which is rather thin. Frame 5 shows the farmer supplying extra feed to pregnant ewes during the month before the ewes give birth. Extra food at this time will increase the productivity of the ewes, increase the number of live births, and produce stronger and healthier lambs and ewes during the spring. Frame 1 shows many healthy lambs and healthy ewes. This frame also indicates, with the full milk jar and the smiling farmer, the possibility that the ewes may produce surplus milk over and above that required by the lambs.

**PAGE 10: CLINICAL SIGNS & CAUSES OF BLOAT (TAMBA)**

This single page demonstrates the clinical signs of bloat and the common causes of this condition. Frame 1 shows animals grazing the first lush, green pastures of the late spring. If too much green grass is eaten quickly at this time, changing the diet abruptly from the winter feed, bloat can occur within one day. Frame 2 shows the clinical signs of bloat including acute swelling of the left side of the animal and sudden death. Turning the animals out slowly onto spring pastures, starting with only a few hours each day, may help to reduce the frequency of bloat. Frame 3 shows another common cause of bloat: animals getting into the winter grain stores. If they eat too much grain in these cases, they may develop bloat. Frame 4 again shows the clinical signs of bloat, swollen left side and sudden death. Careful attention to winter grain storage will help to prevent this scenario.

**PAGE 11: WINTER CROWDING & RESPIRATORY DISEASE**

This page shows the effects of crowding too many animals into winter housing with no ventilation. Frame 2 shows healthy animals grazing during the summer. Frame 3 illustrates the farmer herding the flock into the winter housing in the late fall. This building is a simple structure with only one door and no windows or holes for fresh air. The door is shut tight during most of the cold winter weather. Frame 4 shows the results of too many animals crowded together in a dirty room with no fresh air. Pneumonia and other respiratory diseases spread quickly under these conditions and can kill many animals. The clinical signs of respiratory disease include nasal discharge, difficulty breathing, and coughing. Frame 1 shows the farmer removing the animals from the building in the spring

when it is warmer. Because of the bad conditions, many of his animals have died during the winter.

**PAGE 12: BENEFITS OF PROPER WINTER HOUSING & VENTILATION**

This page shows some of the ways to decrease respiratory disease during the winter. Frame 3 shows the farmer herding his flock into a similar building for the cold winter weather. Fewer animals are kept in this building, decreasing the bad effects of crowding. This building has several large holes high up in the walls that let in fresh air. This building also has a hole in the middle of one of the walls which is used for allowing the building to be cleaned of manure during the winter. Frame 4 shows the farmer inside the building cleaning out the feces/manure on a regular basis. Keeping the building clean of feces will keep the air cleaner which helps to keep the animals healthy also. Dirty air is an important cause of respiratory disease during the winter. Frame 1 shows the farmer removing the animals from their winter housing in the spring. Because fewer animals were housed together in a building that had some fresh air and regular cleaning during the winter, the animals are all healthy. Productivity (indicated by the lambs) is also increased because the sickness of respiratory disease was reduced. Frame 2 shows a healthy lamb and ewe grazing during the summer.

**Appendix B**

**Interview Questionnaires**

Location:

Date:

Respondent:

Duration:

Tribe:

Setting:

Age:

1) Here in Pakistan, what are your most important/ difficult problems?

1-

2-

3-

How long have you been in Pakistan?

2) In Afghanistan, what were the most important/difficult diseases in your animals?

37

1-

2-

3-

3) Are your Koochi?

What does Powandah mean?

4) How many children do you have?

5) Can worms in the intestines of sheep and goats cause diarrhea?

Can diarrhea be contagious?

What else can cause diarrhea?

6) What are the causes of Tabakh (FMD)?

Is Tabakh contagious?

7) Where in an animal do you find garg (liver fluke)?

8) Where in an animal do you find chinjai (worms)?

9) If an animal has garg, what signs/symptoms does it show?

10) If an animal has worms in the intestines, what signs/symptoms does it show?

11) What are the causes of bottle jaw?

12) What are the causes of tympany (tamba)?

13) What are the reasons for lambs and kids to drink colostrum (ourza)?

14) What are the causes of mastitis?

15) Do you take milk from your animals?

Which animals?

39

Who takes the milk?

16) In Afghanistan, what work did women do with animals?

17) Do women give any help or health care to animals?

18) What do women know about animals that men do not know?

19) Do women help to shear the fleece in the spring?

Do you shear sheep and goats?

How many times/yr.?

20) After an animal is killed for meat, who cleans the inside?

Do you ever see disease or parasites inside?

21) If women were taught, could they learn how to give animals health care?

40

Why or why not?

22) Do you and the women in your tribe keep purdah?

From whom?

23) Could women give health care to animals belonging to any man in the tribe?

in the village?

outside the tribe?

24) Could women accept payment from men in cash (Afghanis) if they were to provide health care for animals?

25) Could women go to the bazaar to buy medicines for animals?

26) Could women send men to the bazaar to buy animal medicines?

27) Could women be trained to give health care to animals by other women?

41

by men?

28) If you were living in Afghanistan, where (tent or Qandahar) could women receive this training?

29) In which season should training take place (when would women have time)?

Why?

When you were living in Afghanistan, where (province/ village) were you at this time of year?

30) For how long could women be away from their work in the house to be trained (2 weeks eg.)?

31) Do women want this kind of training?

Why or why not?

32) Do you know how to hold/ handle/ restrain animals?

Can you give medicine to animals with the shkur?

33) Can women hold/handle/restrain animals better than men?

42

34) In Afghanistan, what work did you do every day when the family was migrating?

Dawn:

Morning:

Noon:

Dinner:

Night:

35) In Afghanistan, what work did you do every day when the family stayed in one place in summer and winter

Dawn:

Morning:

Noon:

Dinner:

Night:

36) What are the biggest changes in your daily life since you have been living in Pakistan? 43

Do you have a radio?

What do you listen to?

37) Do you want to return to Afghanistan?

Why or why not?

If the government gave you land or animals, would your first choice be to become sedentary farmers or Koochi again?

Why?

38) What is Ouzghani?

What is Pakha?

39) What do you use Ouzghani for?

What do you use Pakha for?

40) Do you cut hair from goats?

#times/yr?

44

Do you ever comb/brush the hair from goats?

What do you do with Pakha before you spin it?

41) In Afghanistan, is there a special name for goats which produce Pakha?

Are these goats hard or easy to find?

42) In Afghanistan, did you ever sell Pakha?

To whom did you sell it?

Price/Kilo?

43) When you were living in Afghanistan, which was more useful/important to you, Ouzghani or Pakha?

Why?

44) Do you own any chickens?

How many?

45

Did you have any chickens in Afghanistan?

Why do you keep chickens?

45) Do you sell chickens, chicks, or eggs?

Where and to whom do you sell them?

46) Who keeps the money when you sell them?

Can you keep the money and spend it the way you would like?

47) Do your chickens have any diseases?

What are the names and symptoms?

KOOCHI QUESTIONNAIRE -- MEN

46

Location:

Date:

Respondent:

Duration:

Age:

Setting:

- 1) Ethnic group (Pashtoon)?
  
- 2) Ghilzai/Duranni/Other?  
Tribe:  
Subtribe:
  
- 3) Village/District/Province in Afghanistan:
  
- 4) Did you have a house in Afghanistan?  
Did you own any land?
  
- 5) When did you come to Pakistan?  
Why?

6) How many people are in the family?:

47

Men:

Women:

Children:

Do you own a radio?

What do you listen to?

7) How many animals did/do you own?

Who owns them (man or woman)?

Afghanistan

Now

Sheep

Goats

Camels

Donkeys

Horses

Cattle

Chickens

Why do you no longer have animals?

How did you lose your animals?

8) Are you Koochi?

What does Powandah mean?

Are there any other words/ names for Koochi?

Did you migrate with other families?

How many other families?

How many animals?

9) Here in Pakistan, what are your most important or difficult problems?

48

1-

2-

3-

What are the most important or difficult animal diseases your had in Afghanistan?

1-

2-

3-

In Afghanistan, what did you use Ouzghani for?

In Afghanistan, what did you use Pakha for?

Did you ever sell Pakha?

How much / Kilo?

DISEASE KNOWLEDGE

49

- 10) Can worms in the intestines of sheep and goats cause diarrhea?  
Can diarrhea be contagious?  
  
What else can cause diarrhea?
- 11) What are the causes of Tabakh (FMD)?  
  
Is Tabakh contagious?
- 12) Where in an animal do you find garg (liver fluke)?
- 13) Where in an animal do you find chinjai (worms)?
- 14) If an animal has garg, what signs/symptoms does it show?
- 15) If an animal has worms in the intestines, what signs/symptoms does it show?
- 16) What are the causes of bottle jaw?
- 17) What are the causes of tympany (tamba)?
- 18) What are the reasons for lambs and kids to drink colostrum (ourza)?
- 19) What are the causes of mastitis?

20) Do you take milk from your animals?

Which animals?

50

Who takes the milk?

21) In Afghanistan, what work did women do with animals?

22) Do women give any help or health care to animals?

23) What do women know about animals that men do not know?

24) Do women help to shear the fleece in the spring?

Do you shear sheep and goats?

How many times/yr.?

25) After an animal is killed for meat, who cleans the inside?

Do you ever see disease or parasites inside?

26) If women were taught, could they learn how to give animals health care?

Why or why not?

27) Do the women in your tribe keep purdah?

51

From whom?

28) Could women give health care to animals belonging to any man in the tribe?

in the village?

outside the tribe?

29) Could women accept payment in cash (Afghanis) if they were to provide health care for animals?

Could women accept this payment from men?

30) Could women go to the bazaar to buy medicines for animals?

31) Could women send men to the bazaar to buy animal medicines?

32) Could women be trained to give health care to animals by other women?

by men?

33) If you were living in Afghanistan, where (tent or Qandahar) could women receive this training? 2

34) In which season should training take place (when would women have time)?

Why?

When you were living in Afghanistan, where (province/village) were you at this time of year?

35) For how long could women be away from their work in the house to be trained (2 weeks eg.)?

36) Do women want this kind of training?

Why or why not?

37) Do women know how to hold/handle/restrain animals?

Can women give medicine to animals with the shkur?

38) Can women hold/handle/restrain animals better than men?

39) Do you want to return to Afghanistan?

53

Why or why not?

If the government gave you land or animals, would your first choice be to become sedentary farmers or Koochi again?

Why?

40) When you were in Afghanistan, who did you see to give your animals health care?

Did you ever use commercial medicines from the bazaar or from a veterinarian?

Have you ever used Yunani (traditional) medicines for your animals?

A) Have your animals had PADZ/STANI (ear vaccine)

for Buzmarg (CCPP)?

for Kaway (Pox)?

For anything else?

When did you use it?

Out of 10, how many got better?

How many did not?

B) Did you use **Gambila** for any sickness?

Which sickness?

54

Out of 10, how many got better?

C) Did you ever use **Khowree** (alum) for any sickness?

Which?

Out of 10, how many got better?

How many did not?

D) Did you ever use **Korai** (plant) for any sickness?

Which?

Out of 10, how many got better?

How many did not?

E) Did you ever use **Niltotia** ( $\text{CuSO}_4$ ) for any sickness?

Which?

Out of 10, how many got better?

How many did not?

F) Did you ever use **Sakhrwai** (plant) for any sickness?

Which?

Out of 10, how many got better?

How many did not?

G) Did you ever use Zerna (pine tar) for any sickness?

Which?

55

Out of 10, how many got better?

How many did not?

H) Any other indigenous/traditional medicines/practices for animal sickness?

I) If these traditional medicines work very well (9 or 10 out of 10 sick animals get better), why do you use commercial medicines?

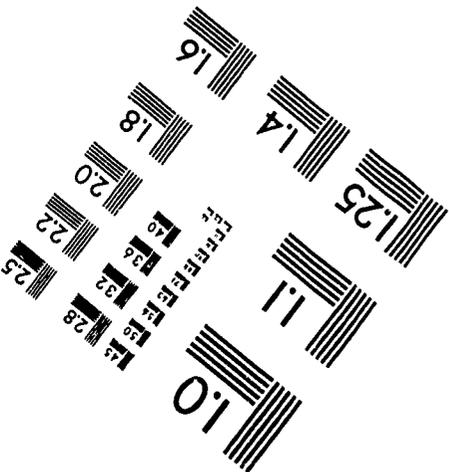
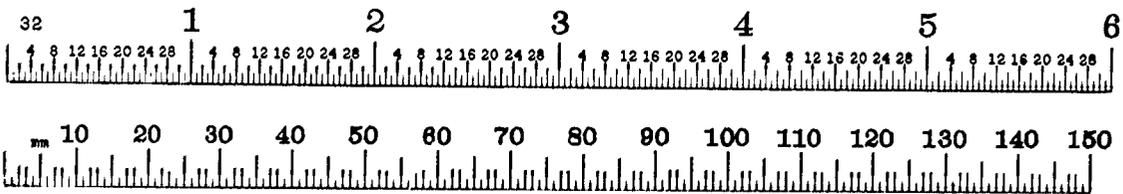
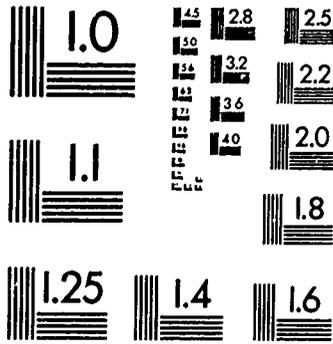
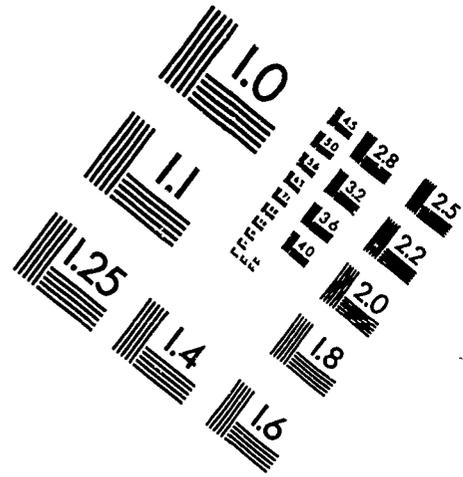
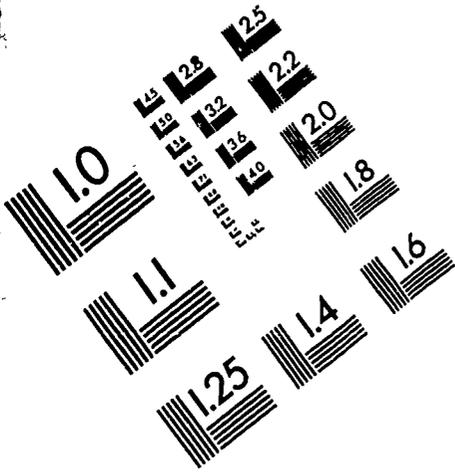
What is the benefit of using commercial medicines instead of traditional medicines for animals?

Are commercial or Yunani medicines more expensive?

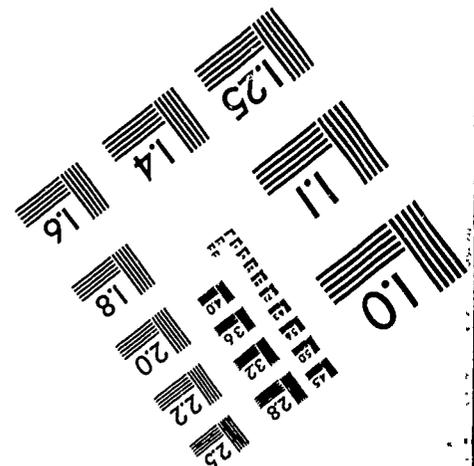
J) Are any of these traditional (Yunani) medicines dangerous or harmful to animals?

Which medicines are harmful?

# IMAGE EVALUATION TEST TARGET (MT-3)



**APPLIED IMAGE**  
1653 E. MAIN STREET  
ROCHESTER, NY 14609  
TEL (716) 482-0300  
FAX (716) 288-5989



90