Ministry of Food, Agriculture and Light Industry

Improving fodder production, conservation and feeding for intensified milk and meat production in the Central region of Mongolia

Food and Agriculture Organization of United Nations

TCP/MON/3103 (D)

Presentation to the Minister

Ministry of Food, Agriculture and Light Industry

The Project Team

Contents

- Achievements
- Actions to consolidate achievements
- Presentation on achievements
- Outputs from Local Workshops in four aimags
- Presentation on proposed follow-on project

Achievements under TCP/MON/3103

- Fodder production
- Hay and silage making
- Feed rationing and supplementary feeds

Fodder production

- on-farm demos with lead and support farmers of locally available annual fodder crops
- on-station introduction and evaluation of annual fodder crop lines and released varieties
- on station evaluation of perennial fodder crop released varieties

On-farm demos of locally available annual fodder crops (1)

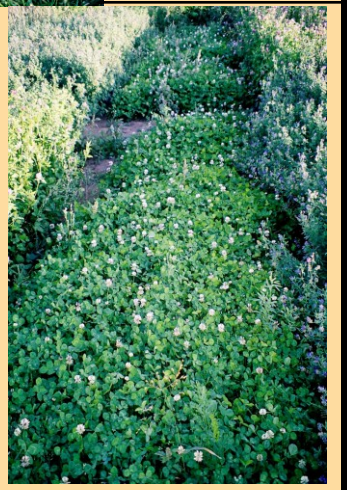
On-farm demos of locally available annual fodder crops (2)

On-station introduction and evaluation of annual fodder crops

On-station evaluation of perennial fodder crop released varieties





Hay and Silage Making

- Introduce and demonstrate “Quick” hay making techniques with:
  - drum mower-conditioners
  - rotary universal tedder-rakes
- Silage making with:
  - double-chop flail harvesters
  - pit silos lined with plastic sheet

“Quick” hay making

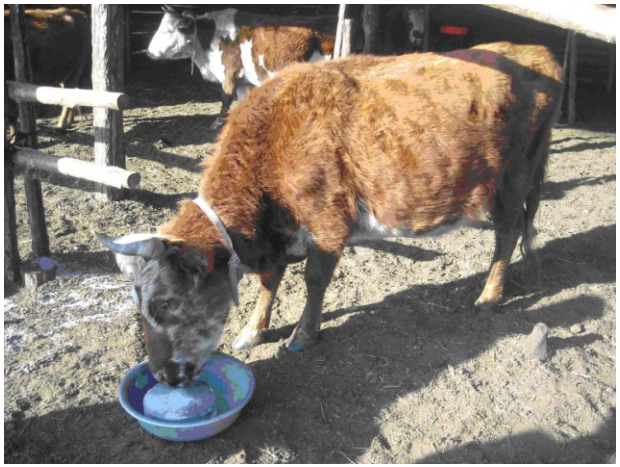
Silage Making

Feed Rationing and Supplementary Feeds

- Feed fodder to appetite
  - hay from natural pastures
- Supplement with minerals
  - multi-mineral blocks
  - trace element bolusses
- Supplement with rumen degradable protein
  - Urea/Molasses Blocks
- Supplement with Green Fodder as Hay and Silage from fodder crops
- Supplement with rumen undegradable (Bypass) protein
  - HiPro-40

Feed fodder to appetite

Supplement fodder with minerals



Training and Demonstrations

Topic	Training	Demonstrations
Inception Workshop	Overview of the project	
Fodder Production	NZ study visit	Planting fodder crops
	Fodder production	Fodder yields
		Farmer evaluation of Station trials
Fodder conservation	Mower-conditioners and tedder-rakes	"Quick" Hay making
	Double-chop forage harvesters	Silage making (medium - large scale)
	Silage and silage making	Making silos, lining with plastic sheet, filling and sealing
Feeding	Feeding improved fodder	Benefits of improved fodders
	Mineral supplements	Multi-mineral blocks and trace element boluses
	Non-protein N supplement	Urea/molasses blocks
	Bypass protein supplement	HiPro-40 protein pellet
Local Workshops	Review of achievements by participants and propose actions for 1 - 3 years	
Final Workshops	Review of achievements by project and propose actions for 1 - 5 years	

PROPOSALS FROM LOCAL WORKSHOPS

8th December 2009

Farmers' action plan for next 3 years issued during local workshop

- Make good quality natural hay
- Cultivate fodder crops and make green fodder and silage for animal feeding
- Cultivate fodder crops, increase size of hay lands, and fence hay lands
- Resolve irrigation issues to increase of harvest yields per hectare
- Create cultivated pastures on overgrazed fields for rotation of pastures
- Repair equipment and machinery using own capacity for cultivation and harvesting of fodder crops
- Purchase mineral animal feed supplements
- Pay attention to animal breeding conditions and reproduction processes
- Prepare sufficient animal fodder to avoid animal suffering during winter and spring seasons – "Happy Cows"

Supports and assistances needed from local authority for implementation of above-mentioned objectives

- Provide lands for cultivation of fodder crops
- Provide ownership rights for hay land on contract basis
- Establish an operational base for fodder and a fund in soums
- Establish a small scale feed mill to produce animal feeds locally in soums by carrying out an economic feasibility study to look at market potentials
- Find a solution at soum level for local marketing of animal feed mineral supplements, including those produced locally
- Organise at soum level the ordering of inputs and equipment and submit orders to relevant ministries and administration departments
- Pay attention to animal breeding issues
- Improve soum's veterinary services
- Disseminate information on activities and implementation of on-going projects and programmes to herders and farmers

Supports and assistances needed from Government and Ministries for implementation of above-mentioned objectives

- Provide at least one forage harvester for making silage to each soum
- Issue a manual on Cultivation, Harvesting, Conservation, and Silage making of fodder crops, and conduct training local areas and soums
- Conduct training on Animal nutrition in local areas and soums
- Have a base for seed multiplication of fodder crops and seed reserve
- Provide soft loans and leasing for equipment for hay, silage, cultivation, and harvesting of fodder crops
- Issue soft loans to commercial companies and herders engaged in cultivation of fodder crops
- Have a fodder reserve for disasters
- Protect and fence hay and pasture lands
- Pay attention to establishing animal feed mills in aimags and soums
- Publicise countrywide the importance of mineral animal feed supplements

Repeated issues

- Resolve land issues for cultivation of fodder crops
- Machinery for cultivation, harvest, and silage making of fodder crops
- Have a seed reserve for fodder crops
- Establish local fodder reserves and service bases in soums
- Fence hay and pasture lands
- Establish small and medium scale workshops / feed mills for the production of animal feeds

PROPOSAL FOR A FOLLOW-ON PROJECT

”Fodder, Feeds and Pastures for Central and NW Mongolia”

Fodder, Feeds and Pastures for Central and NW Mongolia

1) Deepen and broaden fodder production, conservation and feeding activities in Central region, building on TCP/MON/3103 (USD 1.0 M)
2) Develop fodder, animal feed and oilseed crops as break crops to replace fallow within the traditional "wheat/fallow/wheat" cropping system in Central Region, with development of "no-till" planting leading to full "Conservation Agriculture" (USD 1.0 M)
3) Introduce, adapt and demonstrate technologies for pasture regeneration, re-inforcement and management for high potential pastures in NW region; evaluate and develop traditional fodder conservation systems for high value pastures; and develop supplementary feeding systems for pastoral livestock (USD 1.0 M)

1) Deepen and broaden fodder production, conservation and feeding activities in Central region

- Develop methods for each activity appropriate for small, medium and large scale farmers, herders and milk / meat producers
- Within the same aimags (provinces) extend project activities to 2 – 3 times the number of soums (counties)

AND / OR

- Work with MOFALI departments, agencies and funds to **mainstream** project activities into government programmes (this will require additional funds)

2a) Develop break crops to replace fallow within the traditional cropping system in Central Region and introduce Conservation Agriculture

Background

- fallows are used for weed control and moisture storage
- land is deep ploughed then cultivated 3 times leading to high risk of soil erosion and high fuel costs
- crop yields are limited on most land by low fertility and moisture retention capacity
- farmers are already turning to herbicides for weed control
- farmers are interested in “no-till” planting for rapid low-cost crop establishment
- grazing of crop residues leads to compaction and poor snow retention

2b) Develop break crops to replace fallow within the traditional cropping system in Central Region and introduce Conservation Agriculture

Objectives

- To increase soil fertility and wheat yields through introduction of break crops, especially legumes
- To produce animal feeds as both fodders and grains / pulses / oilseed cakes and meals without taking land out of wheat production
- To reduce risk of soil erosion by replacing bare fallow with crop cover, and increase in soil organic matter
- Through Conservation Agriculture with direct drilling into ungrazed stubbles, increase snow and moisture retention and reduce weed populations.

3a) Pasture development, management, conservation, supplementation in NW region

Background

- The high altitude pastures of NW Region have traditionally been of high value
- As the national herd has increased to 40 m head from a baseline of 24 m:
  - pastures in Gobi and western regions have been overgrazed
  - herders have moved to NW and Central regions, with resulting increase in pressure on pastures in these regions
  - palatable pastures species are being “eaten out” and potential carrying capacity is in decline
  - traditional hay meadows are being grazed, and production of winter fodder has decreased
  - winter nutrition of pastoral livestock is now critical, and high losses of animals are expected

3b) Pasture development, management, conservation, supplementation in NW region

Objectives

- To assess and develop local methods, and to introduce, adapt and demonstrate new methods, for:
  - pasture regeneration, re-inforcement and management with emphasis on hay meadows and winter pastures
  - fodder conservation as hay and small scale silage making
  - supplementation of pasture hay and poor quality winter grazing with minerals, degradable protein (urea/molasses blocks), green fodder supplements as improved hay and/or silage, and undegradable protein.

Fodder, Feeds and Pastures for Central and NW Mongolia

Common objectives

- to work with national ministries, local government and related development projects and programmes
- to increase the awareness of the benefits of improved fodders
- to introduce farm business management methods, and the idea of livestock keeping and crop production as input – output systems
- to train local government staff, technicians, commercial service providers and researches in these techniques
- to strengthen the capacity of plant and animal research institutions to carry out research on these topics
- to improve communications through establishment of a project website and provision of web access to soums and herders groups for interactive communications between project participants

Examples of Direct Drills for Conservation Agriculture and Pasture Improvement

- 1.5 metre direct drill from China suitable for small scale integrated farmers and herders
- 1.5 m rotary seed drill from China suitable for slot seeding fodder crops into stubble and for pasture re-inforcement

Example of small forage harvester and silage cart for 25 HP tractor

Dakenag Lilly forage harvester and cart from Australia