



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Alley farming for improving small ruminant productivity in West Africa: ILRI's experiences
Socio-economics and Policy Research Working Paper No. 20

M.A. Jabbar, A. Larbi and L. Reynolds
February 1996
Livestock Policy Analysis Programme
International Livestock Research Institute
P.O. Box 5689, Addis Ababa, Ethiopia

Working Papers Editorial Committee

M.A Jabbar (Editor)
S.K Ehui
B.I. Shapiro

LPAP working papers contain results of research of ILRI scientist, consultants and collaborators awaiting formal publication. The papers are circulated to share information and solicit comments for refinement of results and interpretation for formal publication. The author(s) alone is (are) responsible for the contents. However, ILRI retains copyright and all other rights.

This electronic document has been scanned using optical character recognition (OCR) software and careful manual recorection. Even if the quality of digitalisation is high, the FAO declines all responsibility for any discrepancies that may exist between the present document and its original printed version. Full text can be accessed from www.ilri.org

Table of Contents

[Preface](#)

[Executive summary](#)

[1. Background and objectives](#)

[2. Agronomic studies](#)

[2.1 Introduction](#)

[2.2 Fodder trees and shrubs germplasm evaluation](#)

[2.2.1 Collection and evaluation of *Gliricidia sepium*](#)

[2.2.2 Screening *Leucaena leucocephala* for acid tolerance](#)

[2.2.3 Establishment of *Leucaena* and *Gliricidia* hedgerows](#)

[2.2.4 Collection and evaluation of indigenous fodder species](#)

[2.3 Fodder trees and shrubs in alley farming systems](#)

[2.3.1 Tree-crop interactions](#)

[2.3.2 Proportion of hedgerow prunings as mulch on crop and soil](#)

[2.3.3 Number of prunings as mulch on crop and soil](#)

[2.3.4 Short fallow effects on crop and soil](#)

[2.3.5 Intensive feed gardens](#)

[2.4 Summary and research needs](#)

[3. Animal nutrition studies](#)

[3.1. Studies on mimosine in *Leucaena* and role of energy in diet](#)

[3.1.1 Strategies for controlling the effects of mimosine in *Leucaena*](#)

[3.1.2. Role of energy in diet](#)

[3.2 Response of small ruminants to levels of supplementation](#)

- [3.2.1. supplementation of West African dwarf sheep](#)
- [3.2.2 Supplementation of wad sheep and goats](#)
- [3.3 Effects of alternative feeding strategies](#)
 - [3.3.1. Optimum period for supplementing adult sheep and goats](#)
 - [3.3.2 Growth of WAD sheep during continuous vs periodic supplementation](#)
 - [3.3.3. Supplementation of *Leucaena* in different forms](#)
 - [3.3.4. Palatability and voluntary intake of *Gliricidia sepium* in different forms](#)
- [3.4. Supplementation of free-roaming village flocks](#)
- [3.5 Discussion and summary of results](#)
- [4. Economics of alley farming](#)
 - [4.1 Optimum allocation of tree foliage between mulch and fodder](#)
 - [4.2 Long-term profitability of alley farming with and without livestock](#)
 - [4.3 Sustainability of alley and non-alley farming](#)
 - [4.3.1 Background](#)
 - [4.3.2 The general model](#)
 - [4.3.3 Model application and results](#)
- [5. On-farm research, diffusion and extension](#)
 - [5.1 The approach and the setting for on-farm research](#)
 - [5.2 On-farm research and the learning-adoption process](#)
 - [5.3 Labour requirement for alley farming and its implications](#)
 - [5.4 Gender concerns in alley farming](#)
 - [5.5 Land tenure and the potential for adoption](#)
 - [5.5.1 Background, objectives and methodology](#)
 - [5.5.2 General characteristics of land tenure in the study areas](#)
 - [5.5.3 Land and tree management practices](#)
 - [5.5.4 Tenure status of alley, non-alley and ex-alley farms](#)
 - [5.6 From on-farm research to diffusion and extension](#)
 - [5.7 AFNETA and multizonal research](#)
- [6. Conclusions](#)
- [References](#)