



MICROFICHE N°

04684

République Tunisienne

MINISTÈRE DE L'AGRICULTURE

CENTRE NATIONAL DE

DOCUMENTATION AGRICOLE

TUNIS

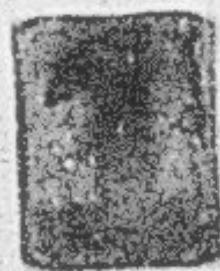
الجمهورية التونسية

وزارة الزراعة

المركز القومي
للمعلومات الزراعية

تونس

F





مديران تربية الماشية وتوفير الأراضي

OFFICE DE L'ELEVAGE ET DES PATURAGES
PROJET D'AMENAGEMENT DES PARCOURS
DE LA TUNISIE CENTRALE

END OF TOUR REPORT

by Douglas E. Johnson
Range Management Specialist



OFFICE DE L'ELEVAGE ET DES PATURAGES

EN COLLABORATION AVEC
L'UNIVERSITÉ DE L'ETAT DE L'OREGON

SRM SEED PRODUCTION PAPER

PRODUCING SEED FROM NATIVE SPECIES FOR USE IN RANGELAND
IMPROVEMENT IN CENTRAL TUNISIA

Borman, M.M., M.M. Ben Ali, D.E. Johnson,
T. Nasser, and M. Chebbie. 39th annual meeting.
Soc. for Range Management. Orlando, FL.

Introduction

The Tunisian range project was originally designed by the U.S. Agency for International Development (USAID) and the Tunisian Office of Livestock and Pastures to intervene on 36,000 hectares over a five year period. This was to be accomplished through a program emphasizing the establishment of deferred rotational grazing systems. The objective of these systems was to moderate the timing and duration of grazing pressure so that existing vegetation could express its full productive potential. However, at the outset of the project it was determined that, in general, rangelands and marginal croplands had been abused for such a long time that the remaining plants were of poor quality and that desirable plants were generally absent or present in very small numbers. Seeds of beneficial native short-lived species such as annual medics (Medicago spp.), sweetvetches (Medysarum spp.), annual bromes (Bromus spp.) and ryegrass (Lolium spp.) were not present in large enough numbers to

permit recovery of rangeland in a reasonable amount of time. As a result, the project emphasized revegetation through reseeding of some rangelands and abandoned croplands. Additionally, deferred rotational grazing systems are generally not culturally acceptable in Tunisia and are therefore not practical even if they had been technically appropriate.

Projected Seed Requirements

The emphasis on reseeding required us to revise the number of hectares to be intervened on to a projected 2000 ha per year. At 2000 ha per year, seed requirements would be from 10,000 kg at a 5 kg/ha seeding rate to 24,000 kg at a 12 kg/ha seeding rate. An expanding range management program will require a low cost source of seed in increasing quantities. The original targets of 12,000 new hectares per year after the end of project funding would require up to 144,000 kg of seed per year.

permit recovery of rangeland in a reasonable amount of time. As a result, the project emphasized revegetation through reseeding of some rangelands and abandoned croplands. Additionally, deferred rotational grazing systems are generally not culturally acceptable in Tunisia and are therefore not practical even if they had been technically appropriate.

Projected Seed Requirements

The emphasis on reseeding required us to revise the number of hectares to be intervened on to a projected 2000 ha per year. At 2000 ha per year, seed requirements would be from 10,000 kg at a 5 kg/ha seeding rate to 24,000 kg at a 12 kg/ha seeding rate. An expanding range management program will require a low cost source of seed in increasing quantities. The original targets of 12,000 new hectares per year after the end of project funding would require up to 144,000 kg of seed per year.

Problems Associated with Imported Seed

Since seed for the species to be used were not available in Tunisia, it had to be ordered from the U.S. and Australia and shipped to Tunisia. We discovered that both purchasing and shipping were subject to lengthy delay, and once the seed finally reached Tunisia, clearing it through customs required a considerable amount of time and effort. To make a long story short, we received the seed late and we were late getting it into the ground.

Another factor we needed to consider was that imported species, varieties and ecotypes are not often well adapted locally. Our plant materials screening program has indicated several local plant materials that show promise and are more adaptable to local conditions than are imported varieties. Reducing the expenditure of hard currency for importation of seed has been a consideration from the beginning. However, since we have initiated the seed production program, Tunisia has become extremely concerned over the extent of foreign currency outflow. Producing seed in-country may be the only way seed can be made available for range reseeding.

Having considered the above factors, it was determined that a seed production capability was required.

Seed Production to Date

In 1983, the project obtained and renovated an Australian manufactured Horwood Bagshaw vacuum seed harvester that had been brought into Tunisia several years before on a prior project. This machine was designed to vacuum harvest subclover and medicago seed. That summer, 1983, 2500 kg of annual medic seed were harvested. Of those 2500 kg, 800 kg were a mixture of native species harvested from a farm on the plain of Kairouan, and 1700 kg were Medicago truncatula that had been originally imported from Australia and seeded in a pasture on a government farm.

The medicago mixture was used as the base seed for seed propagation that was initiated in the fall of 1983 and has continued since. We also collected, by hand, seed from other native species including Smilgrass, orchardgrass, and the sweetvetches Medicago carnosum and spinosissimum. We currently have large scale seed production parcels in place on 7 government farms and small scale seed propagation parcels at two other farms, one of which has irrigation.

The species currently in large scale production

Medicago truncatula 'Jemalong'

Medicago mixture - local

Medicago carnosum

Medicago spinosissimum

Program of Implementation

Once it was decided that a seed production program was to be established, the following implementation program was initiated:

1. Initiate seed production with available seed of desired species, both local and imported.
 - a. work out techniques
 - b. determine equipment and training needs
 - c. produce larger quantities of seed for larger scale propagation
2. As possible, go to larger scale production.
 - a. primarily on government farms
 - b. with the project providing seed, equipment and technical advise, and the farm providing the labor

The first two steps have been initiated and we are currently working on both levels.

3. Establish a seed cleaning, handling and storage facility.
4. Contract seed production to private farmers.
 - a. farmers to be responsible for seedbed preparation
 - b. project to provide seed, fertilizer, herbicide and specialty equipment at cost

- c. project to provide technical assistance for seeding, crop maintenance and harvesting
- d. seed to be processed at the project seed processing center
- e. project to guarantee a market with a minimum purchase price

Problem Areas

In the process of initiating a seed production program, we have encountered and attempted to address a number of problem areas:

1. Seedbed preparation: Vacuum harvesting requires a smooth surface. If the seed collects in furrows and depressions, the vacuum won't be able to pick it up.
2. Weed control has been a problem. Because we are spread out over several sites, it has been difficult to stay on top of the weed problem. Proper timing and techniques of herbicide application require close supervision. Availability of herbicides is a problem that has been partially solved by early purchase based on projected requirements.

3. Locating and obtaining sufficient control over a permanent seed propagation site has been difficult. In each of three years, we have established a new site that has been intended as the center for initial seed multiplication. This has caused problems with proper seedbed preparation, weed control, and availability of equipment when needed. Each has been rejected for reasons ranging from improper climate and soils to management problems resulting from a lack of sufficient cooperation. The solution to this problem is basically a political one that must be resolved within the Ministry of Agriculture.
4. Availability and maintenance of equipment has been and will continue to be a problem. Preventative maintenance is not widely practiced and parts are frequently not available.

FIN

10 . . .

VUES