



Project: Improving and promoting the use of *Moringa oleifera* leaves for a better maternal and early childhood nutrition in Benin (FortiMoringa)

WP1. Improving production of Moringa leaves and seeds

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OBJECTIVES

Overall objective

To develop agro-ecological cost effective methods ensuring the optimization of the production and the quality of moringa seeds and leaves



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OBJECTIVES

Specific objectives

- To diagnose the current moringa production environment in Benin
- To determine the optimal conditions for moringa seeds conservation in Benin
- To co-develop best and cost-effective agronomic practices for moringa leaves and seeds production
- To document and test the acceptability of models of moringa integration into cropping systems



ACTIVITIES

- A1: Moringa production system documentation
- A2: Determining optimal condition for moringa seed conservation in Benin
- A3: Developing best and cost-effective agronomic practices for moringa leaves and seeds production
- A4: Integrating moringa plant into existing cropping system.



A1: Moringa production systems

- Diagnostic of Moringa production systems
- 4 BSc Students
 - SOHOU Mireille (South)
 - KOULO Gilberte (Centre)
 - TOHAN Perrin (North-East)
 - SATOIGNON Felix (North-West)



A1: Moringa production systems

- Material and Methods
 - Study area (Fig 1)
 - Snowball technique (210 respondents)
 - Questionnaire

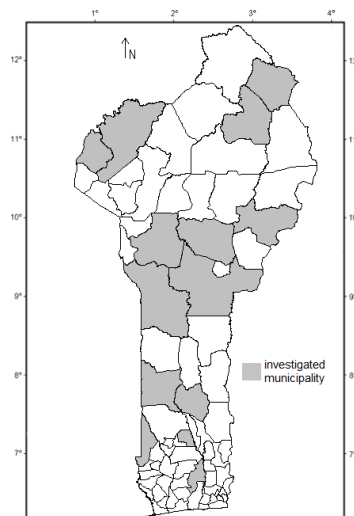


Figure 1. Study area



A1: Moringa production systems

- Three target plantation types



Figure 2. Home garden



Figure 3. Community plantation



Figure 4. Private plantation

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Activity 1: Preliminary results

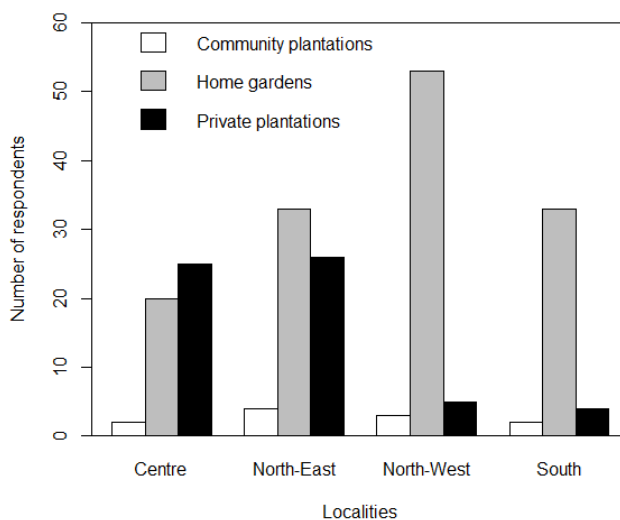


Figure 5. Distribution of plantation type of moringa across the investigation area

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Activity 1: Preliminary results

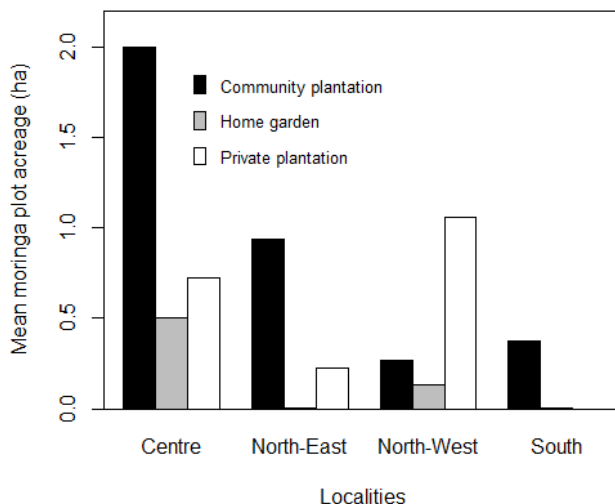


Figure 6. Acreage of moringa plot by locality and plantation type



Activity 1: Preliminary results

Table 1. Planting material used by farmers

Area	Planting material	Pourcentage (%)
South (n=39)	Seed	25.64
	Cutting	74.36
	Seed and Cutting	0
Centre (n=47)	Seed	87.24
	Cutting	6.38
	Seed and Cutting	6.38
North-East (n=63)	Seed	92.06
	Cutting	4.76
	Seed and Cutting	3.18
North-West (n=61)	Seed	78.69
	Cutting	6.56
	Seed and Cutting	14.75



Activity 1: Preliminary results

Planting methods used by farmers



Figure 7. Direct sowing



Figure 8. Transplanting



Figure 9. Cutting

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Activity 1: Preliminary results

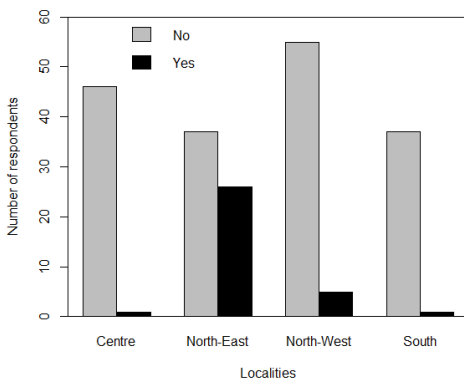


Figure 10: Use of fertilizers by farmers in moringa production

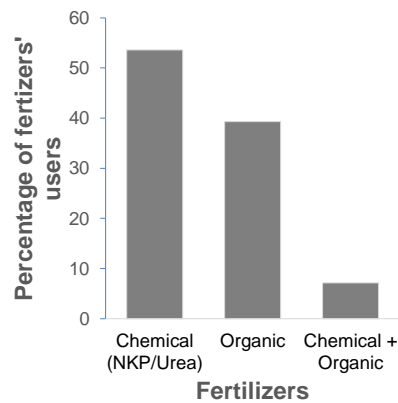


Figure 11: Type of fertilizers used by farmers in North-East Benin

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Activity 1: Preliminary results

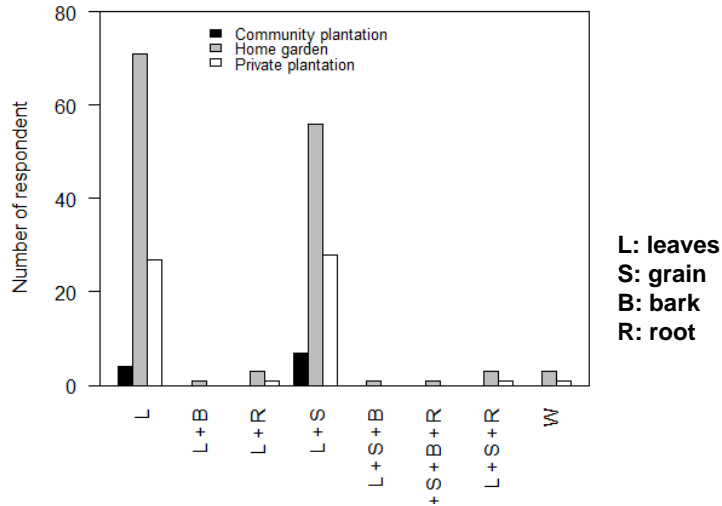


Figure 12. Target organs and their importance per plantation type



Activity 1: Preliminary results

Target organs



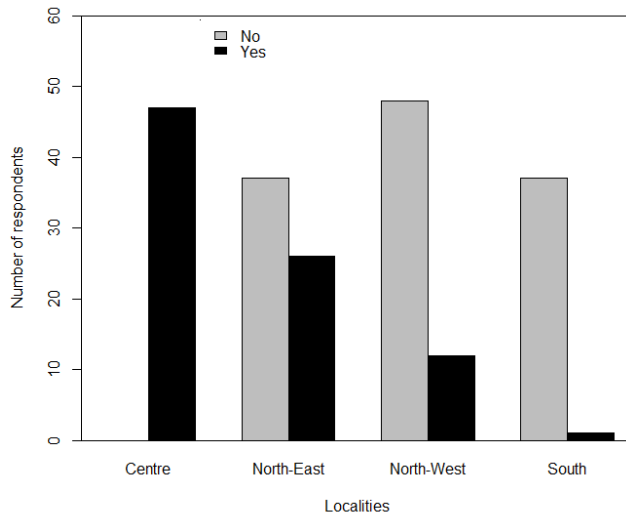
Figure 13. Moringa leaves



Figure 14. Seeds of Moringa



Activity 1: Preliminary results

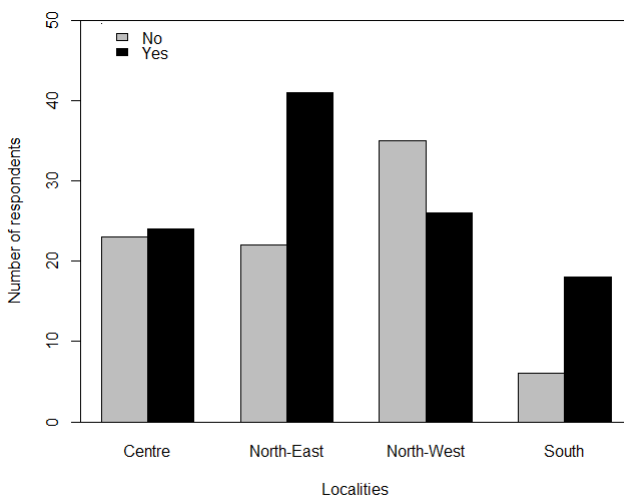


Watering practices specific to locality (P<0.001)

Figure 14: Adoption of watering per localities



Activity 1: Preliminary results



Pest management specific to locality (P<0.001)

Figure 15. Perceptions on moringa pest management



Perspectives activities 2, 3 and 4

- Improvement of moringa seeds conservation
- Co-development (with farmers) of agro-ecological cost effective methods for moringa seed and leaves production
- Improvement of the integration of moringa into farming systems
- **3 MSc Students (Proposals)**
 - Jacob HOUETO
 - Hardi HINVI
 - Eliel SOSSOU



A2: Moringa seed conservation

- Maturity stage (50% pods brown and 100% pods coloring)
- Water content (Wi, 15%, 12%, 10%, 5%)
- Storage temperature (ambient, 10°C, 4°C, 0°C)
- Storage duration (0, 3, 6, 9 and 12 months)
- Seed packaging (pod and seeds)



A2: Moringa seed conservation

- Experiments being implemented at GBioS (FSA)
- Study limited by the seeds availability
- This study will start in October



Activity 3: Agronomic practices

Factors	Modalities
Plant density	1.5 m x 1.5 m 1 m x 1 m 0.5 m x 0.5 m
Watering	Watering and no watering
Cutting frequency	15 days, 30 days, 45 days
Fertilization	Cow manure and NKP



Activity 3: Agronomic practices

- Two environments
 - Aplahoué
 - Bétérou
- Split-split-split-split plot with four replications in two locations per environment



Thanks for your attention

