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First agronomic lessons of the initiatives launched in Senegal to develop decentralized *Jatropha* production and marketing chains.

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Introduction

Alternative solutions to fossil fuels are of a great importance to satisfy the increasing demand for energy in Western Africa and to cope with rising oil prices. Since several years *Jatropha curcas* L. (JCL) is considered as one of the most promising crop to alleviate the consequences of global warming, improve energy security and decrease rural poverty in developing countries. JCL is a hardy shrub that belongs to the *Euphorbiaceae* family and is distributed in almost all tropical and subtropical regions of the world. Unlike other agrofuel crops JCL is a non edible plant with multiple uses (soil fertilization, wasteland reclamation, plot delimitation, traditional medicine) and is rather drought resistant. It is easy to establish, grows usually quickly and improves soil fertility. The oil can be used directly in simple engines, in adapted stove, in soap production, and as bio pesticide. Recent investigations carried out all over the world have shown that JCL could contribute drastically to the improvement of the living conditions of rural populations in the least developed countries (Achten *et* al., 2008 ; Saverys *et al.*, 2008).

However, for several reasons, both technical and socio-economic, the full potential of JCL is far from being realized. The variation of the plant behaviour according to the agro-ecological conditions is insufficiently documented and management recommendations adapted to the existing farming systems have not been yet developed.

Material and Methods

Four pilot actions have been launched in different agro-ecological regions of Senegal during the last two years to overcome the constraints that limit the full exploitation of JCL potentialities. These projects are carried out by Durabilis Foundation with the scientific support of Gembloux Agricultural University, Aide au Développement Gembloux NGO, Eau Electricité Solidarité Foundiougne program, and Société Boulonnerie Europe-Senegal Company and located in the departments of Dagana, Tambacounda, Foundiougne and Tivaouane respectively. These areas are representative of most of the different agro-ecological regions of Senegal. Each pilot project tests different production practices (under rainfed or irrigated production conditions) and organisational models (cooperatives, local company involving growers, informal producer groups) adapted to the local environments for the production, the transformation and the marketing of *Jatropha* oil.

Results and discussion

The first results obtained show that a good tending of the crop during the first months after direct sowing or planting is very important because JCL is sensitive to the concurrence of weeds or of companion crops with large vegetative development (sorghum, millet, maize). JCL was attacked by at least two pests in all the regions where it was planted and adequate protection methods need to be implemented to avoid the total destruction of the crop in its early development stages in case of direct sowing. Protection against divagating animals after planting (especially during the dry season) is absolutely necessary.

These action-research initiatives should allow identifying the adequate solutions for the implementation of decentralised production and marketing chains of JCL in Senegal.

Pests found on JCL

Stomphastis thraustica
(Lepidoptera, *Gracillariidae*)

Pempelia morosalis
(Lepidoptera, *Pyralidae*)

Calidea panaethiopica
(Heteroptera, *Scutelleridae*)

Fruits/seeds of JCL

References

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