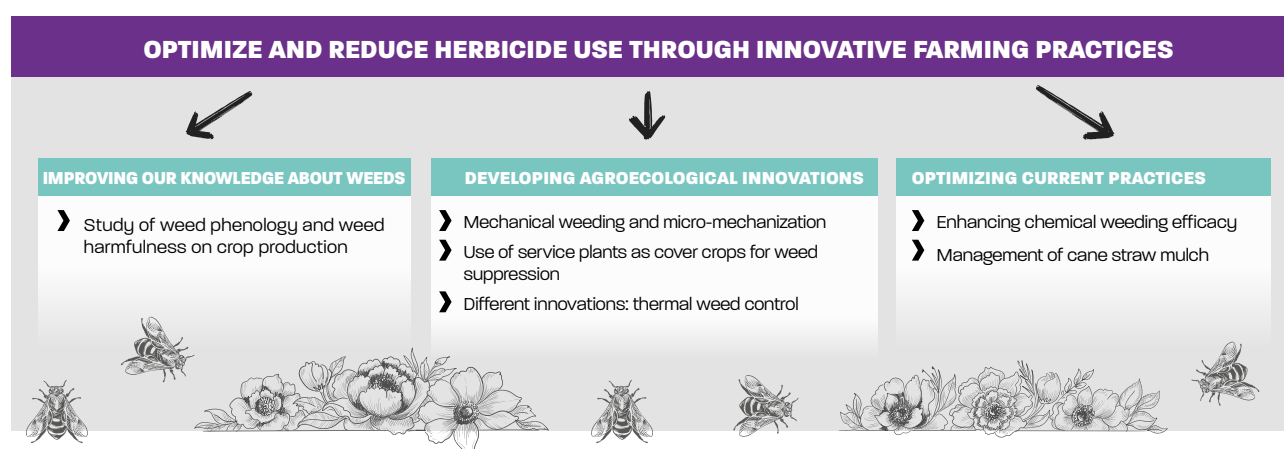


FRENCH SUGARCANE EXPERTISE



WEED MANAGEMENT RESEARCH TO INCREASE SUGARCANE CROPPING SYSTEM SUSTAINABILITY

Sugarcane cropping systems are rather environment-friendly, but weed control remains a key factor to achieve both technical and economic performances in sugarcane farms. Agroecological weed management has become crucial due to the increasingly strict European regulations and high societal expectations. Cirad and eRcane have been assessing more sustainable, rational and responsible weed management approaches for several years.



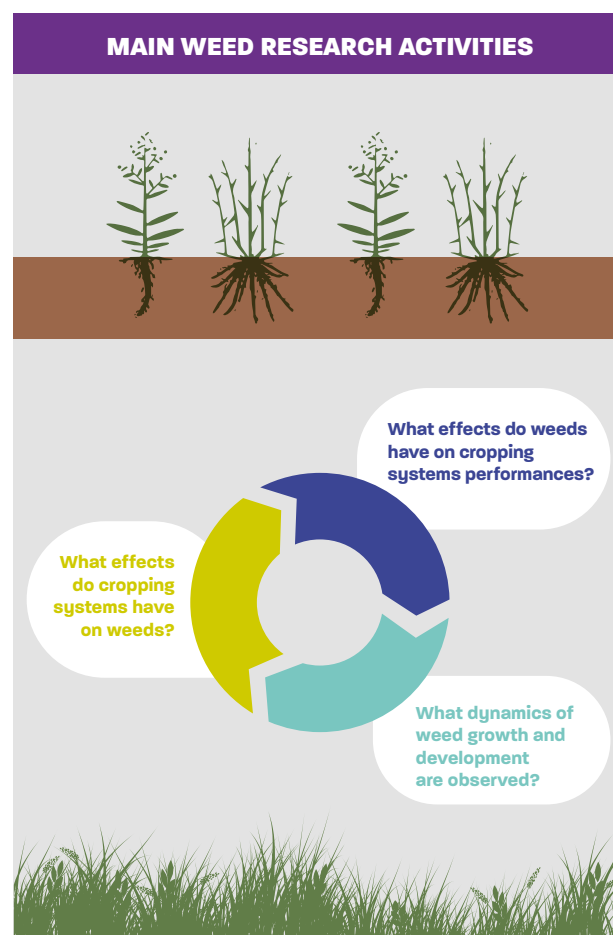
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IMPROVING OUR KNOWLEDGE ABOUT WEEDS

Further insight into the biology of weed species and their harmfulness for sugarcane production is required to improve weed control practices and, more generally, weed population management. For farmers, these data will ultimately help to develop weed management strategies based on the species present and their growth and reproductive cycles. Artificial intelligence approaches for weed identification and prediction of their presence and abundance in sugarcane fields are also being implemented.

DEVELOPING AGROECOLOGICAL INNOVATIONS

Mechanical weed control practices are being tested to limit weed growth and infestation, due to the ban on most herbicides. With or without tillage and mulching, several tools are being assessed under micromechanical conditions: Rolofaca roller, brushes, disc harrow, mower shredder, dual-bladed mower, harrow, etc. Companions plants and cover crops are also being tested to reduce herbicide treatments as intercrops between sugarcane rows or as short fallow between two sugarcane crop cycles. Finally, other innovations are being evaluated, such as thermal weeding with water vapor.



OPTIMIZE CURRENT PRACTICES

Cane straw mulch management is also being studied and optimized for weed control: importing this mulch during the crop planting year, mixing it with different tools, and distributing it in different ways throughout the plot. Finally, research on herbicide efficacy and selectivity is also under way to optimize the use of these compounds and provide solutions for the failures and limitations of some agroecological practices. Data from these trials conducted by eRcane are used to obtain marketing authorization for crop protection products.



Hot water steam weed control in a sugarcane row



Disk harrow – interrow weeding



Ageratum conyzoides seeds



Oxalis corniculata seeds



Centrosema pubescens seeds



Senna occidentalis seeds



Imported sugarcane trash mulch applied on rows

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Crop association: White lupin (*Lupinus albus*) as companion plant in sugarcane intercropping



Transfer of innovation



Agricultural plot monitoring

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