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# Journée des Doctorants

Lundi 14 Mars (9 h -14h)

Amphi Ampère – Bât. Gabriel

Au programme : 8 posters, 11 présentations orales dont 1 invité surprise + 1 buffet

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## Peut-on concilier faible usage de pesticides, productivité et rentabilité?

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Achieving sustainable food production while feeding an increasing world population is one of the most ambitious challenges of this century. It will necessarily go through a drastic reduction of adverse effects arising from agricultural activities. In such an orientation, the reduction of pesticide use is a critical component to preserve environment and human health. The emergence of new production strategies based on a consistent combination of farming techniques for an improved pest control have shown that pesticide reliance could be reduced. It remains however a matter of debate whether substantial reductions of pesticide use are possible without impacting productivity and profitability. Here we demonstrated that less pesticide use does not equate to lower productivity and profitability. We analysed the potential conflicts between a lower pesticide use reduction and productivity or profitability with data from 946 arable demonstration farms showing contrasting levels of pesticide use and covering a wide range of production situations over the French national territory. We failed to detect any conflict between a low level of pesticide use and a high productivity and profitability on by 82% of farms from our sample. Based on this finding, we showed that 37% displayed a high progress margin for pesticide reduction while 45% displayed moderate progress margins, accessible pesticide reduction accounting respectively for -46% and -24%. The 18% remaining farms, for which profitability and/or productivity were conflicting with a low pesticide use, were linked to particular situations enabling the cultivation of high added value industrial crops, crops that used to be also high consumers of pesticides. Our results demonstrate that pesticide reduction is already accessible in most production situations, but they also suggest the necessity to integrate the contextual variability in the analysis of sustainability trade-offs.

Keywords : Système de culture, Situation de production, Réseau de fermes de démonstration, Pesticides