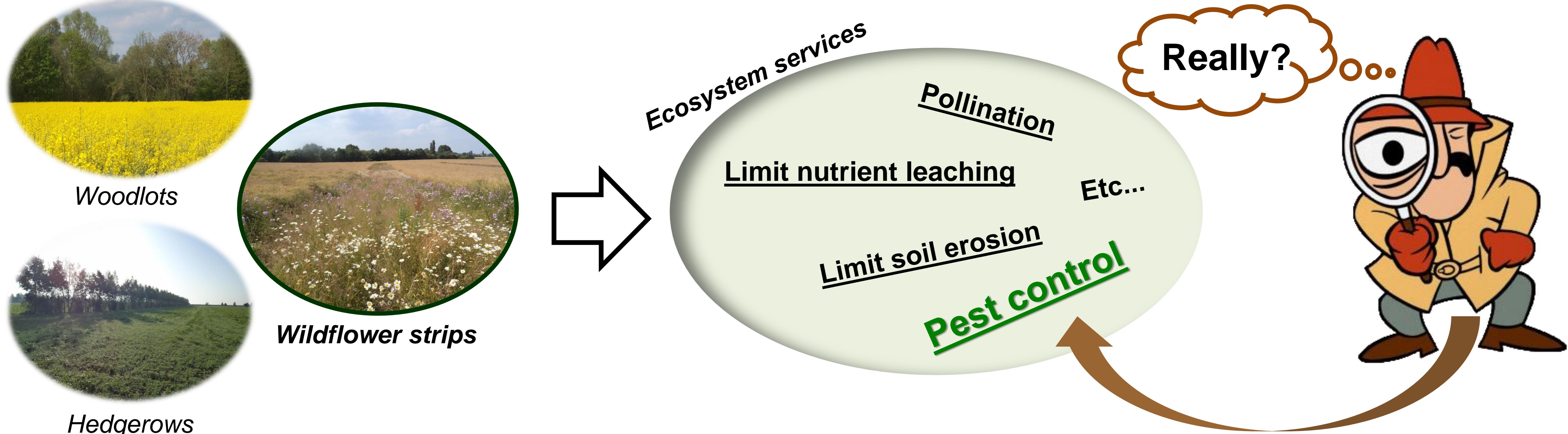


## Wildflower strips for crop protection: What do we know? What should we know?

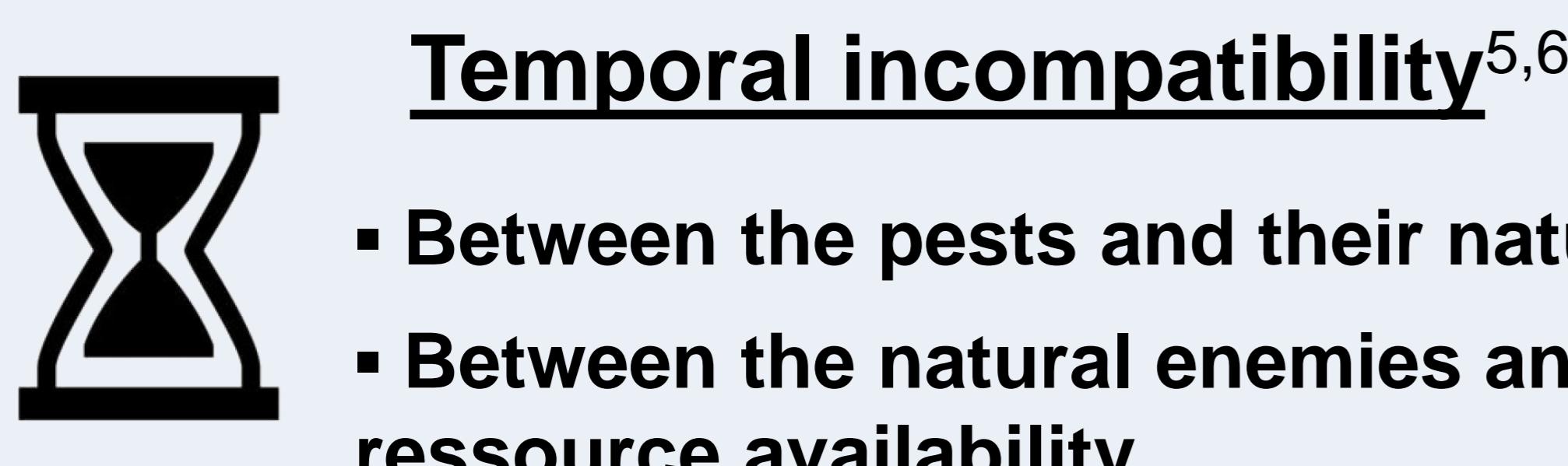
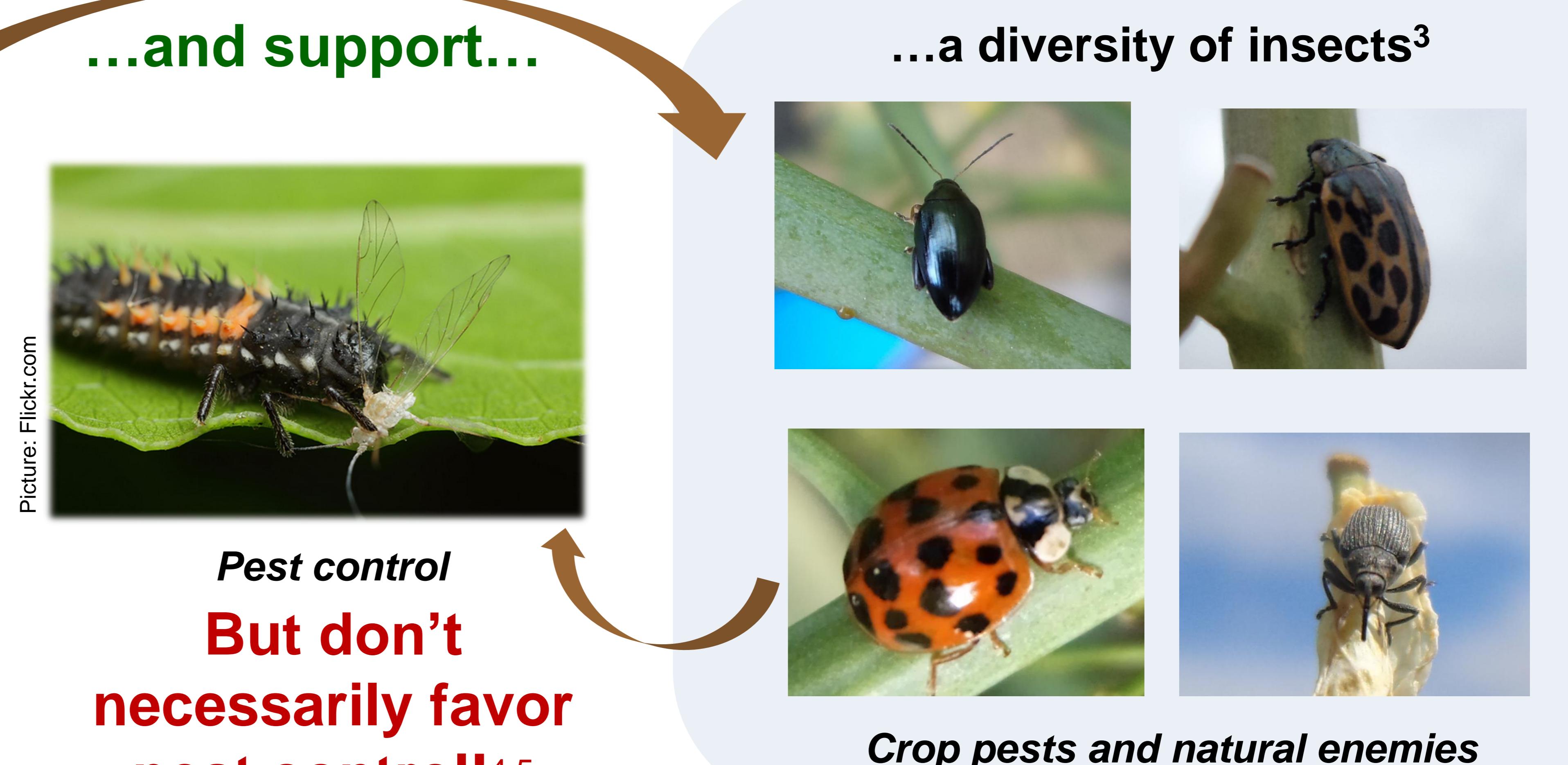
Séverin HATT<sup>1,2\*</sup>, Roel UYTENBROECK<sup>1,3</sup>, Bernard BODSON<sup>4</sup>, Julien PIQUERAY<sup>5</sup>, Arnaud MONTY<sup>3</sup>, Frédéric FRANCIS<sup>2</sup>

<sup>1</sup>AgricultureIsLife.be, <sup>2</sup>Functional and Evolutionary Entomology Unit<sup>2</sup>, <sup>3</sup>Biodiversity and Landscape Unit, <sup>4</sup>Crop Science Unit and Experimental farm, <sup>5</sup>Natagriwal Asbl, University of Liège, Gembloix Agro-BioTech, Passage des déportés 2, 5030 Gembloix, Belgium

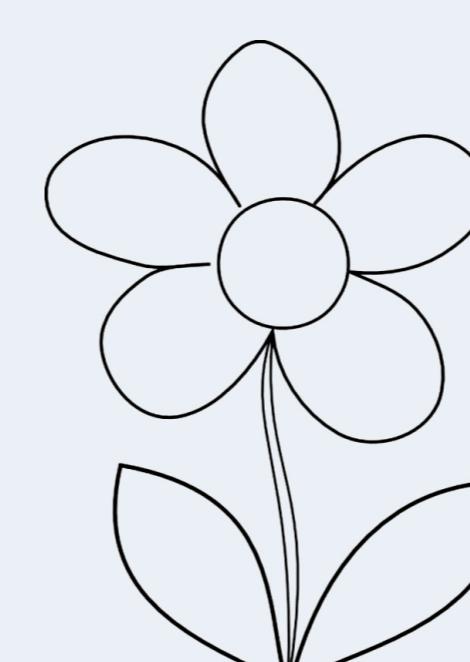
### Landscape infrastructures are said to provide regulative ecosystem services<sup>1</sup>



### Wildflower strips do not necessarily favor pest control



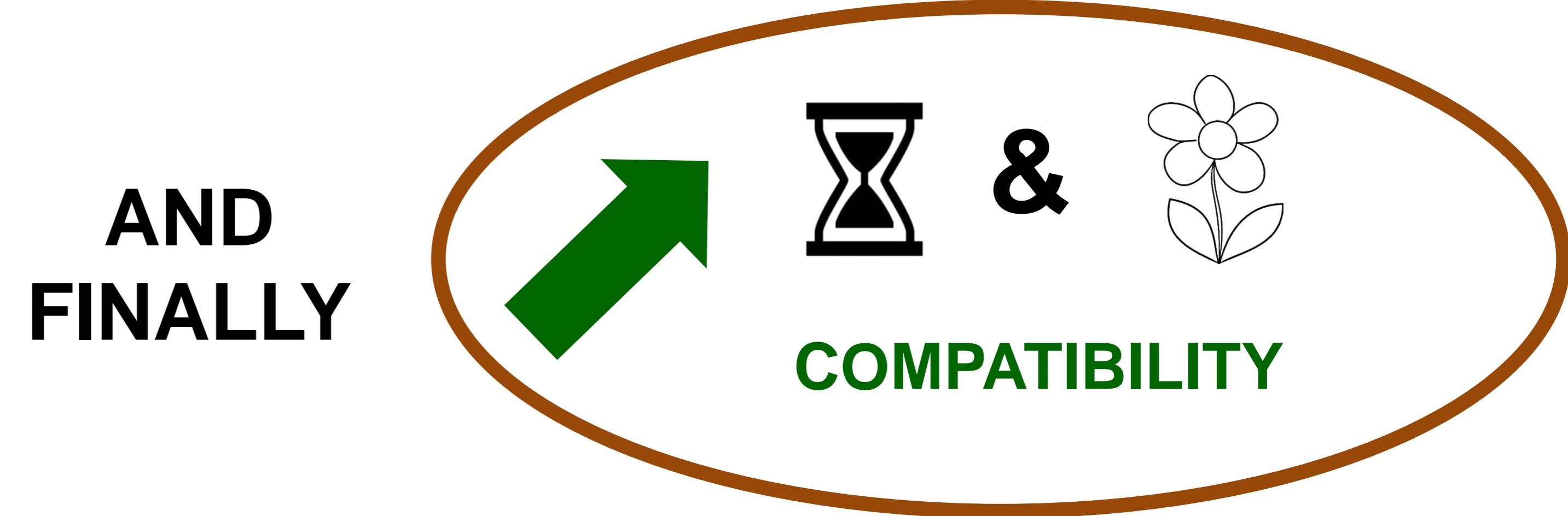
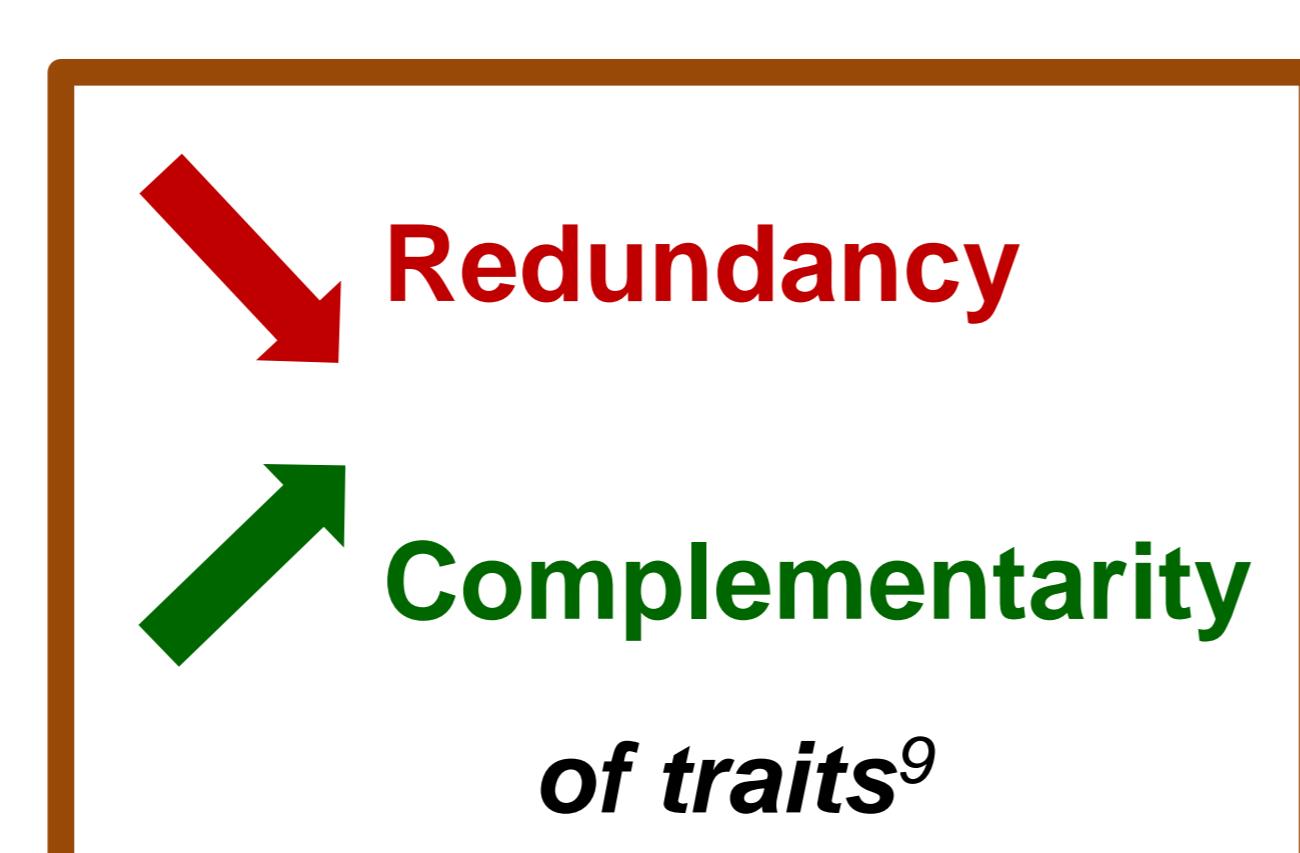
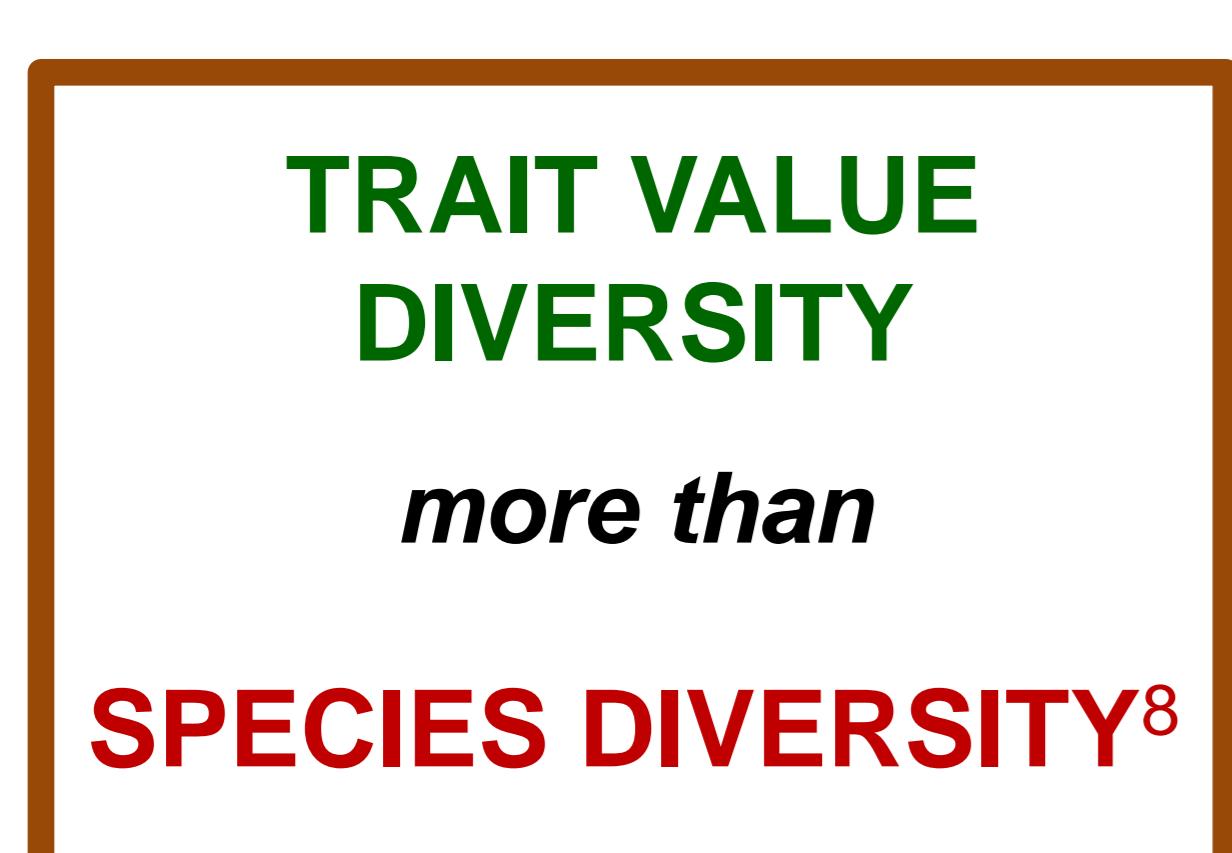
WHY?



### Food ressource type incompatibility<sup>5</sup>

- Insect mouth pieces should be adapted to the flower corolla type

### Why the concept of Functional Diversity may be useful to favor biological pest control?<sup>7</sup>



References

- <sup>1</sup> Zhang, W., Ricketts, T. H., Kremen, C., Carney, K., & Swinton, S. M. (2007). Ecosystem services and dis-services to agriculture. *Ecological economics*, 64(2), 253-260.
- <sup>2</sup> Haaland, C., Naisbit, R. E., Bersier, L. F. (2011). Sown wildflower strips for insect conservation: a review. *Insect Conservation and Diversity*, 4(1), 60-80.
- <sup>3</sup> Pfiffner L., & Wyss E. (2004). Use of sown wildflower strips to enhance natural enemies of agricultural pests. In G. M. Gurr, S. D. Wratten, & M. A. Altieri (Eds.), *Ecological engineering for pest management*. CABI-Publishing, Collingwood, Australia, p. 167-188.
- <sup>4</sup> Alhamedi A., Haubruge E., D'Hoedt S., & Francis F. (2011). Quantitative food webs of herbivore and related beneficial community in non-crop and crop habitats. *Biological Control*, 58 (2), p. 103-112.
- <sup>5</sup> Pfiffner, L., Luka, H., Schlatter, C., Juen, A., Traugott, M. (2009). Impact of wildflower strips on biological control of cabbage lepidopterans. *Agriculture, Ecosystems & Environment*, 129(1), 310-314
- <sup>6</sup> Colley M. R., & Luna J. M. (2000). Relative Attractiveness of Potential Beneficial Insectary Plants to Aphidophagous Hoverflies (Diptera: Syrphidae). *Environmental Entomology*, 29 (5), p. 1054-1059.
- <sup>7</sup> Moonen A.-C., & Bärberi P. (2008). Functional biodiversity: An agroecosystem approach. *Agriculture, Ecosystems & Environment*, 127 (1-2), p. 7-21.
- <sup>8</sup> Altieri M. A. (1999). The ecological role of biodiversity in agroecosystems. *Agriculture, Ecosystems & Environment*, 74 (1-3), p. 19-31.
- <sup>9</sup> Díaz, S., & Cabido, M. (2001). Vive la difference: plant functional diversity matters to ecosystem processes. *Trends in Ecology & Evolution*, 16(11), 646-655.