

**Supervisor :**

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**Project title :**

Genetic diversity of cornflower at different scales (France, Locality, a few meters)

**Keywords :**

Genetic diversity, gene flow, services to biodiversity, *Cyanus segetum*

**Summary (150 words at the maximum):**

In the framework of a program on the evaluation of the iconic *Cyanus segetum* as a plant providing agronomic and ecosystemic services, our team focuses on the available genetic diversity at different scales. Seed sampling has been carried out over France, in an agricultural landscape in Poitou, and in a linear experimental design set up to study gene flow between wild and horticultural varieties over short distances. Molecular markers (microsatellites) will be used. Genotyping data will be obtained from a genotyping platform, then analyzed using diverse population genetics softwares to describe how the genetic variability is structured at different spatial scales, as well as the role of pollinators for gene flow via pollen. Association with traits putatively involved in service to biodiversity will be made using data of a phenotyping experiment conducted in 2016. Estimating local gene flow and evaluation of the potential impact of horticultural plants sown in flower beds and apicultural set aside on wild populations is also an output.

**Relevant literature (up to two references):**

Le Corre, V., Bellanger, S., Guillemin, J.-P., Darmency, H., 2014. Genetic diversity of the declining arable plant *Centaurea cyanus*: population fragmentation within an agricultural landscape is not associated with enhanced spatial genetic structure. *Weed Research*. 54, 536-544.

**Techniques involved in the project:**

DNA extractions - chromatograms reads - file management – use of population genetic softwares

**Desired skills and abilities:**

Taste for data analysis and the use of various computer softwares