

Green manures as winter cover crops in the tree row of an organic peach orchard since planting

17th July 2019
Saint-Marcel-lès-Valence

Maxime Jacquot
Claude-Eric Parveaud
Johanna Brenner



Armand Guillermin
Claude Bussi
Franck Merlin





Tillage

Pros :

- Weed control

Cons :

- Soil fertility and biodiversity



Green manure

Expected benefits :

- Soil fertility and biodiversity
- Weed control

Potential disadvantages :

- Competition with trees
- Development of pests (vole)

Orchard

Peach tree cv. *Bénédicté*

(tolerant to peach leaf curl)

Distances : 6 x 4 m



Experiment

Tillage (control)

Green manure 1 :

- Black oat (*Avena strigosa*)
- Crimson clover (*Trifolium incarnatum*)
- Egyptian clover (*Trifolium alexandrinum*)

Green manure 2 :

- Black oat (*Avena strigosa*)
- hairy vetch (*Vicia villosa*)
- common vetch (*Vicia sativa*)

Green manure 3 :

- Pea (*Pisum sativum*)
- crimson clover (*Trifolium incarnatum*)
- hairy vetch (*Vicia villosa*)

Seedlings or green manures before tree planting

26th september 2017



Green manure 1
development in
november 2017

Direct planting in green manures

19th february 2018



Green manure development from january to april 2018



**Green manure 1
(oat + clovers)**



**Green manure 2
(oat + vetches)**



**Green manure 3
(pea + vetch + clover)**





**Control
Tillage**

**Green manure 3
(Legumes)**

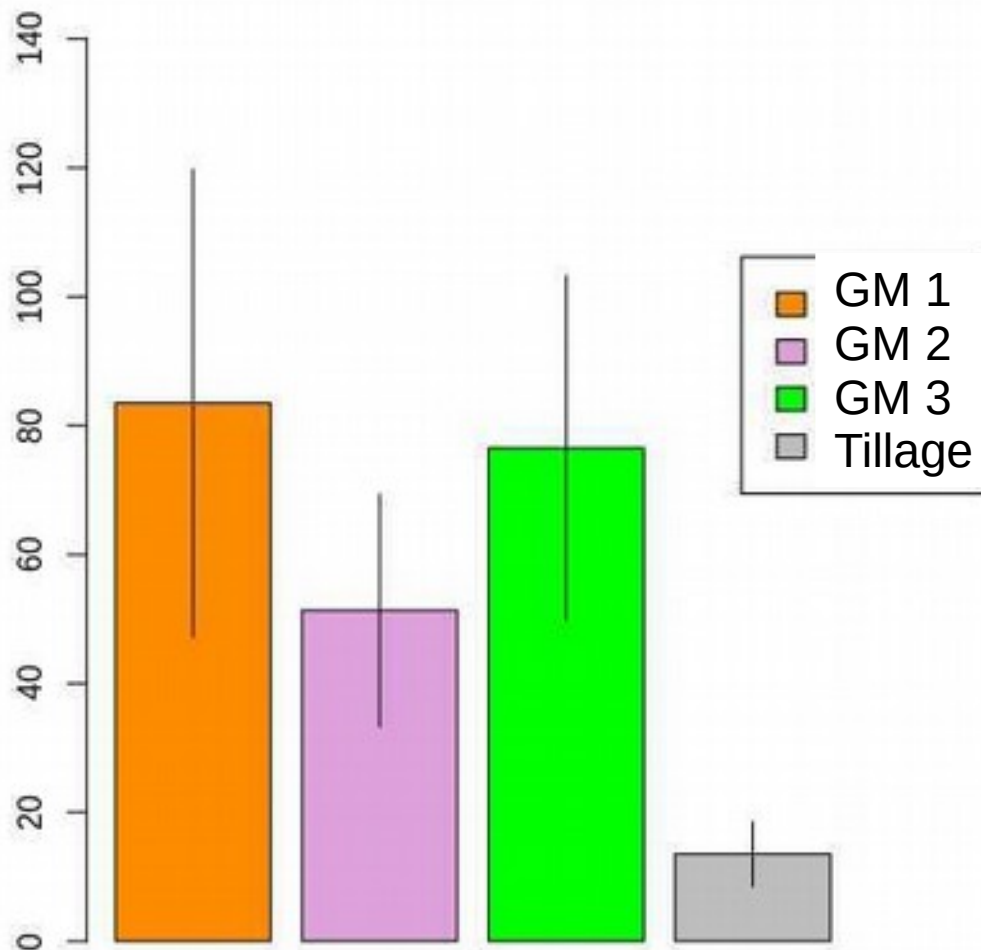
April 2018



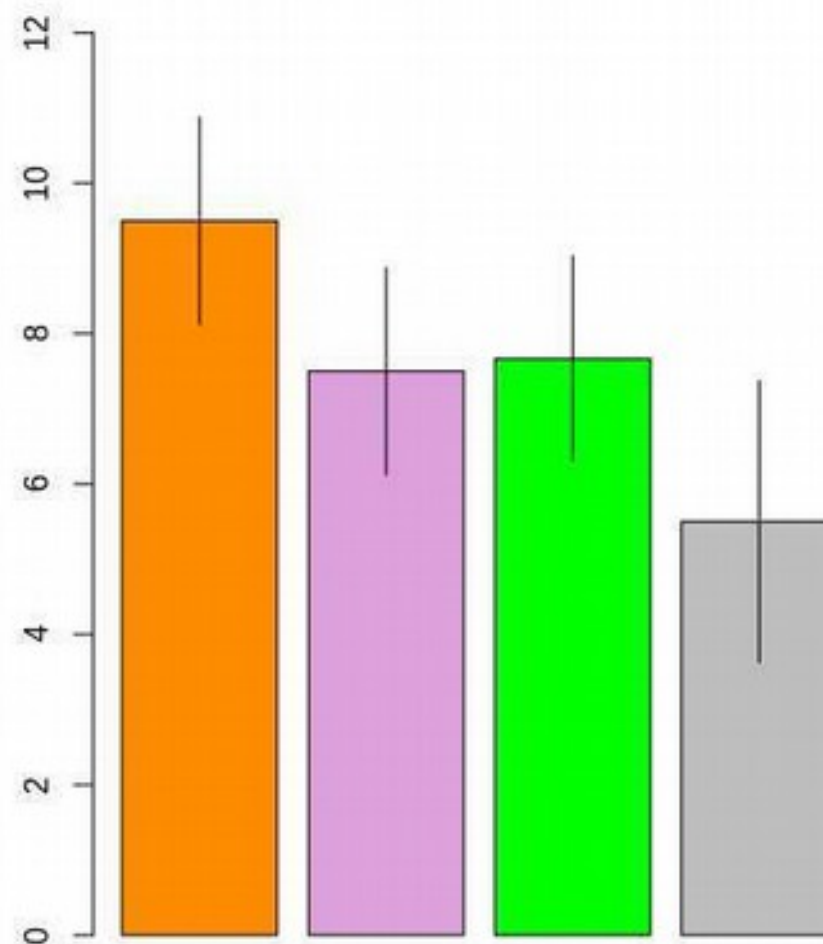
Arthropods biodiversity

April 2018 (before mowing)

Abundance



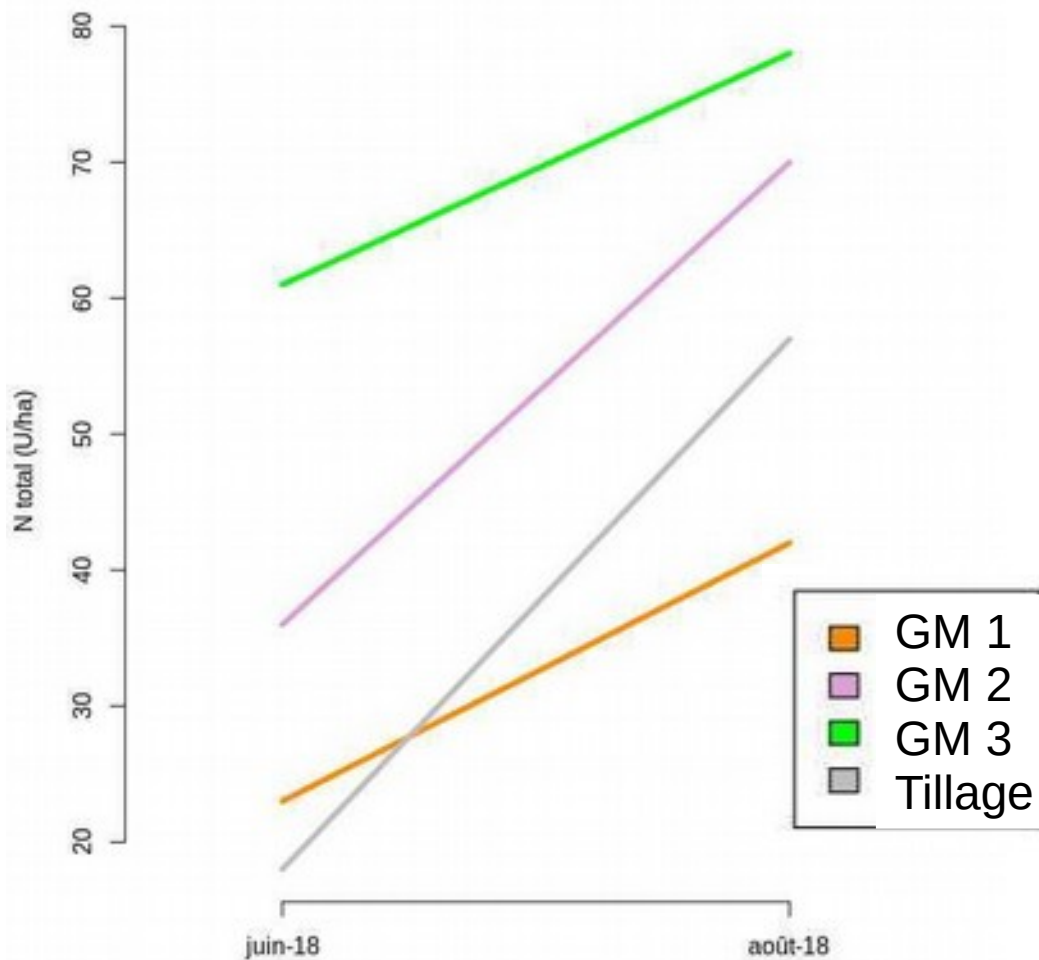
Richness



Green manures enhanced biodiversity

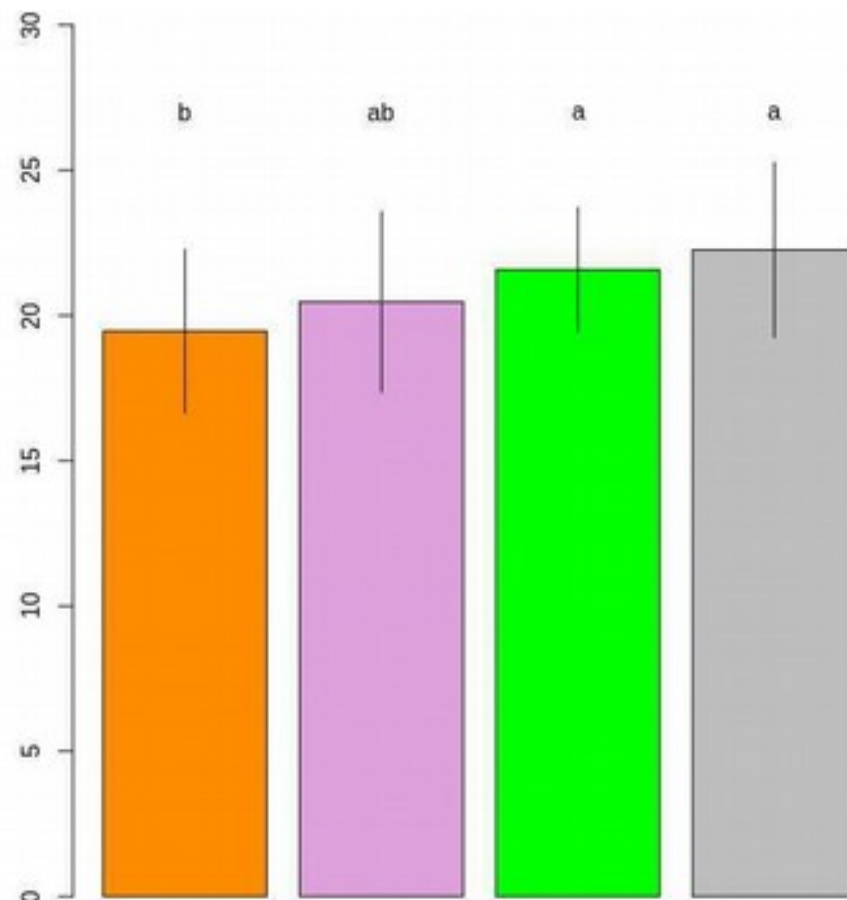
Total nitrogen (kg/ha)

From June to August 2018



Peach tree growth

Trunk diameter (mm) - Sept. 2018



Seedbed preparation for winter 2018-2019

August-september 2018



Seedling for winter 2018-2019

