Herbaceous Cover Plants

An alternative to herbicides and mulches in forest and landscape settings-
New techniques, still largely unknown–
Development potential thanks to / for apiculture?

Why use cover crop

In many circumstances, in plantation or natural regeneration, tree seedlings are in competition for resources with other plants, often to their detriment
The vegetation is often controlled by chemical, plastic mulches or mechanical operations

In the other hand, a vegetation can provide tree seedling a protection against climate hazards as early or late frosts, strong winds, water run-off, etc. (facilitation)

In forests, cover plants are mentioned in the literature from 1822 where cereals (mainly rye) were used in direct seeding with oak and pine
Cover plants have been used in different countries and with different species since
But there were not much scientist test.

The main idea of the cover crop (or cover plant or green cover) technique is to sow low-resource-competitive plant(s)

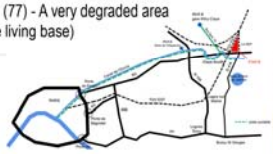
In place of the spontaneous weeds to prevent their establishment, or at least a too big development

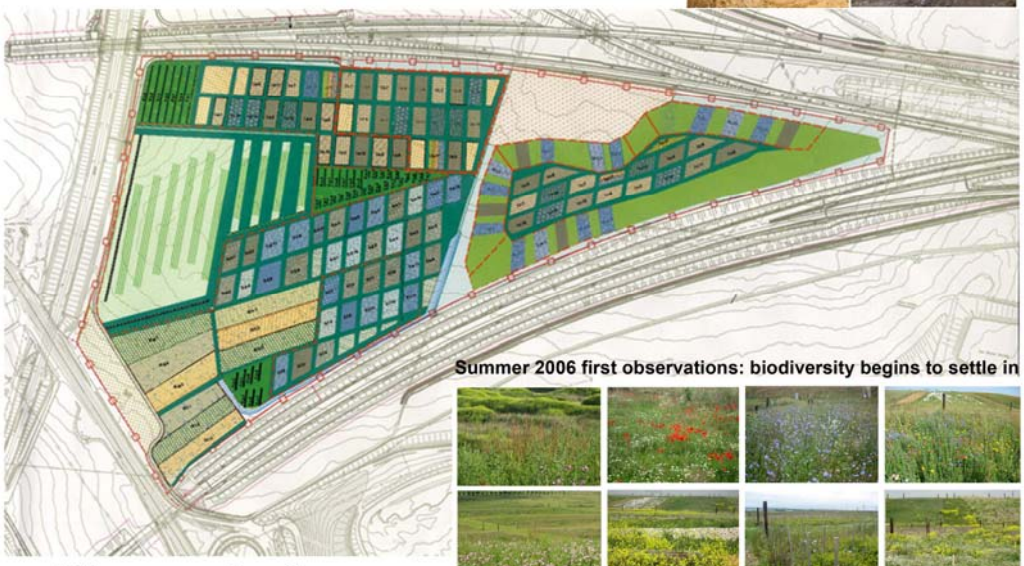
To reduce the competition for resources

2006 Creation of a full-scale experimental site on 35 hectares.

In the context of developments on the TGV east line atClaye-Souilly (77) - A very degraded area
(a former storage area – 120,000 m3 of materials +Former work site living base)

The Cover crop techniques were improved.





Summer 2006 first observations: biodiversity begins to settle in

Monoculture or mixture?

Sowing a mixture of plants is a way of both securing the establishment of some species while avoiding a too large development of other species

- The aim is to rapidly and permanently cover the soil to limit the development of weeds
- Following the niche theory, species using different resources, or collecting resources at different places, or having different phenologies can co-exist

Type of cover plants

Avena sativa
Secale cereale
Lotus corniculatus
Trifolium sp.
Fagopyrum esculentum
Sinapis alba
Phacelia tanacetifolia
Lupinus polyphyllus
Papaver rhoas
Agrostemma githago

Type of seed trees

Acer Campestre
Amelanchier Ovalis
Carpinus Betulus
Cornus Mas
Cornus sanguinea
Corylus Avellana
Fraxinus exelsior
Hippophae Rhamnoides
Malus Sylvestris
Prunus Avium
Prunus Mahaleb
Prunus Spinosa
Pyrus Communis
Quercus Petraea
Rhamnus Cathartica
Rosa Canina
Sambucus Nigra
Sorbus Aria
Viburnum Lantana

melliferous plants

CONCLUSION:

Cover plant is a promising technique . At the present time, we are not able to make a definitive technico-economic assessment of the experimental site, but it opens the possibility of a more extensive approach favouring biodiversity and ecosystems, with a real economical interest, without herbicides and maintenance coût. After two years, we also can observe the favorable effect of this kind of vegetation to the bees colonies on this area. The honey production is around one hundred kg for tow beehives. These colonies are very strong and analysis of collected honey pollen prove the local provenance.

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