

LIFE + BIODIVINE – Plant protocol 2014

This protocol has been designed differently from the 2012 and 2013 protocols in order to evaluate actions C1 success.

1. Experimental plots

The measures described in this protocol have to be applied on at least 4 plots that have been sown/self-sown thanks to the action C1 of the project.

For sites on which less than 4 plots have been sown/self-sown thanks to the action C1 of the project, the protocol has to be applied on all C1 plots.

For sites on which sown and self-sown cover have been implemented, apply the protocol on the same number of sown and self-sown plots.

Example: for a site on which 10 plots have been sown and self-sown, select 2 plots with sown cover and 2 plots with self-sown cover.

2. Cover categories

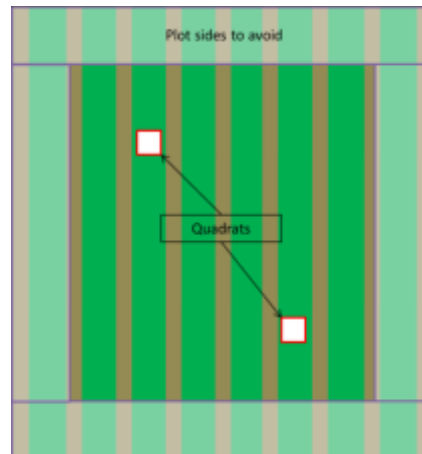
4 cover categories have to be considered in this study:

- **Sown species:** all species that have been sown. If the sowing contains a mixture including a high number of species, the mixture itself can be considered as one species. For plots that have been self-sown, the sown species category is logically not considered in this survey, only weed species, other species and bare soil categories are considered.
- **Weed species (=unwanted plants):** all species that represent possible problems for the wine grower. The range of species that can be considered as “weeds” may be changing according to pedodimatic conditions, plot history regarding the use of herbicides and the wine growers requirements. Considering this, no definitive list can be done yet for all sites of the project. Then, the table 1 presents a pre-list of species that each of the BioDiVine partners can modify (by adding or taking out species) according to the local conditions. The definitive list of species that will be considered on each site of the project has to be clearly presented in the reporting word file called “Action E3 – plants – name of your site – 2014”.
- **Other species:** all species that are neither sown nor unwanted by the wine grower. All species that are not included in the two previous categories.
- **Bare soil:** the percentage of soil surface that is non grassy.

3. Estimation of the cover percentage per species category

The value measured in this survey is the percentage of soil surface covered per each category. It will be evaluated using the quadrats technique. On each plot, the percentage of soil surface covered per each category will be evaluated within 2 quadrats of 1m². These quadrats will be located on two inter-rows on which the ground cover is representative of the whole ground cover at the plot scale. The inter rows located on the plot sides will not be selected for this survey in order to avoid the plot side effect and to obtain representative data at the plot scale.

Example of experimental design for the 2014 plant survey:



The estimation of the cover percentage per category will be realized once, at mid-spring (once the cover is correctly developed, has fully recovered from the possible frost and isn't affected yet by high temperatures).

4. Data entering

All data of cover percentage will have to be written in the excel file called "Action E3 – plants – name of your site – 2014".

Please, fill in only the first sheet table of this file as the second one will be completed automatically according to the values you've entered in the first sheet table.

Note that on both sheets, two tables are presented. One is for self-sown covers, the other one for sown covers. Please, in the first sheet, fill in the table that corresponds to the covers that have been implemented on your site and erase the other one (on both sheets).

If the two kinds of sowings have been done on your site, please, fill in the two tables.

Table 1: Pre-list of weed species that can be modified according to local specificities

N°	Common name	Latin name
1	Pampa grass	<i>Cortaderia selloana</i>
2	Narrow-leaved ragwort	<i>Senecio inaequidens</i>
3	Common hogweed	<i>Ambrosia artemisiifolia</i>
4	Sumatra fleabane	<i>Conyza sumatrensis</i>
5	Argentina fleabane - Asthma weed	<i>Conyza bonariensis</i>
6	Canada fleabane	<i>Conyza canadensis</i>
7	Black nightshade	<i>Solanum nigrum</i>
8	Hogbite - Skeletonweed	<i>Chondrilla juncea</i>
9	Rye-grass	<i>Lolium rigidum</i>
10	Johnsongrass	<i>Sorghum halepense</i>
11	Star grass - Bermudagrass	<i>Cynodon dactylon</i>
12	Mallow	<i>Malva sylvestris</i>
13	Horstaile	<i>Equisetum ramosissimum</i>
14	Madder	<i>Rubia peregina</i>
15	Thistles	<i>Carduus sp., Cirsium sp., Cynara sp.</i>
16	Bindweed	<i>Convolvulus arvensis</i>
17	Thorn-apple	<i>Datura sp.</i>
18	Lamb's quarters	<i>Chenopodium sp.</i>
19	False yellowhead - Sticky fleabane	<i>Dittrichia viscosa</i>
20	Dropseed	<i>Sporobolus indicus</i>
21	Annual Saltmarsh aster	<i>Symphyotrichum subulatum - Aster squamatus</i>
22	Pokeweed	<i>Phytolacca americana</i>
23	Milkweed	<i>Asclepias syriaca</i>
24	Bramble	<i>Rubus sp.</i>

NB: For each site, the species selected in each category will be listed and presented with the results.