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SUPPLEMENTARY DATA

S1. Detailed descriptions of the results of clustering winegrowers according to their ground cover management practices.

Cluster 1 (*n* = 4): the "sowing" cluster.

All winegrowers sow a cover of legumes every other row (*n* = 4), intended to improve the fertility and structure of the soil (*n* = 4). The covers are destroyed in the spring and the row is then worked during the season with cover crop and actisol (*n* = 4). For the most part (*n* = 3), there is no alternation of the row sown and worked, and sowing practices are not reasoned on the plot (*n* = 3). For the management of the row, most (*n* = 3) have a mixed management with a part in tillage, either well integrated into the practices (*n* = 2) or in test for the moment (*n* = 1). A person is 100 % in chemical weeding of the row. All the winegrowers in this group sow their headland when setting up the plot (*n* = 4), then manage it by mowing two to four times a year (*n* = 4). The non-determining practices for this cluster are the management of the grassy row (no detail for two, rolofaca for one, eco-grazing for one) and the number of tillage passes in the inter-row (one to three times for two, three to five times for the other two) and in the row (one to two for two, three to five for one and five to six for one).

Cluster 2 (*n* = 12): the "conventional" cluster.

Winegrowers have a cover one row out of two (*n* = 12), the other being tilled. Less than half (*n* = 5) have a mainly spontaneous cover, while the others have a sown cover mainly intended to control competition with the vine (*n* = 6). Only one person has a sown cover intended to improve soil fertility and structure (*n* = 1). All winegrowers manage their cover by crushing or mowing it. For the tilled row, one person chemically weeds one out of two rows (*n* = 1) despite the prohibition in the specifications, and another person did not detail the tools used. All the others work the soil with cover crop and actisol (*n* = 6), sometimes with additional tools (*n* = 4). For those who till the inter-row, most pass often (three to five times, *n* = 9, one to three times *n* = 2). The majority of people who sow a cover crop do not reason it out on the plot (*n* = 6). On the other hand, among the people with a spontaneous cover, two of them sow a cover when setting up the plot and for the first years of the vine. The winegrowers of this group do not alternate (*n* = 7) or very little (*n* = 4) the worked row and the grassed row. Only one person alternates every year. As far as the row is concerned, the majority weeds chemically, either with glyphosate alone (*n* = 6), or sometimes with the addition of pre-emergent herbicide (*n* = 5). Only one person is

100 % tillage. Two people started to test tillage, while one person integrated tillage on part of the vineyard. The majority have a spontaneously grassed headland, except for one person whose headland is sown. The passage variable on the headland is not homogeneous in the group.

Cluster 3 (*n* = 4): the "soil working" cluster.

In this group, inter-row management practices are less decisive than row management practices. The winegrowers all have a cover every other row, however the type of cover is not a determinant of the group: one person sows to control competition, two people sow to improve the fertility and structure of the soil and one person spontaneous cover. Similarly, cover management is not a determining variable. With regard to tillage, one person did not detail the tools, while the others use cover crop and actisol, with two of them having additional tools. The number of passages is quite substantial, from three to five for two of them, more than five for the other two. Most do not reason their sowing practices on a plot basis (*n* = 2) or even have no sowing practices at all (*n* = 1). A person reasons the sowing according to the vigor of the vine. They alternate all their rows worked every three to five years. The row management practices are more determining: the majority is in majority tillage (*n* = 3), while the person who is in majority chemical weeding has the particularity of working half of the *cavaillon* on the side of the inter-rank worked. All the winegrowers in this group carry out fairly substantial work (more than simple hoeing, ridging of the row, etc.) with a lot of tools and a lot of passages (three to five, *n* = 4). They all have a headland in spontaneous grass, but the number of passages is not a determinant of the group.

Cluster 4 (*n* = 11): the "herbicide-free" cluster.

In this group, the winegrowers have a cover on one row out of two (*n* = 4) or less (*n* = 7). For the majority, the cover is spontaneous (*n* = 10), a person sows a cover intended to improve soil fertility. The management of the canopy and the detail of tillage are not homogeneous in this group, in particular because for some people these practices are not detailed. Most work the inter-row fairly regularly (three to five times, *n* = 7, one to three times *0* = 4). The majority have no sowing practice (*n* = 6), on the other hand, some (*n* = 2) sow cover crops when setting up the plot or when nitrogen is needed, while others (*n* = 2) are beginning to test cover crops sown on a few plots. All but one alternate the rank worked each year. The majority manage the row by tilling the soil (*n* = 9) except for two people who chemically weed but have nevertheless started to till the soil on part of their farm. Many did not detail how they work the row (*n* = 5), however the vast majority go through the row fairly regularly (three to five times, *n* = 9). All have a headland with spontaneous grass cover and most (*n* = 10) maintain it infrequently (one to three times a year).

Cluster 5 (*n* = 3): the "tillage-free" cluster.

Very little homogeneous group, except that none works the inter-row: all three are in total spontaneous grassing of the inter-rows. For all the other practices, two of them have similar practices while the third clearly stands out from the group and the sample in general. For the management of the cover, two of them manage it in a traditional way by crushing or mowing, while the third practices pastoralism. This same person has started to test sowing on part of the farm, while the other two do not sow any cover crops. Likewise, these two are chemically weeding the row (one has started incorporating tillage practices) while the third has light tillage practices. All three have spontaneous grassy headlands that they maintain little (one to three times, $n = 2$, four to six times, $n = 1$).

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Table S1. Verbatim examples illustrating winegrowers' motivations for using ground covers.

Element	Types of motivations	Details and verbatim examples
Inter-row	Reduction of phytosanitary products and preservation of water quality	Control plant cover and competition with vines: "*Choose a cover with species that you choose and not that you endure.*"
		Diminish herbicides: "*…to occupy the soil, not having to weed.*"
	Preservation and development of biodiversity	"*It restores, I don't know how to say it, a natural environment.*" "*We have microbial life which is underneath, which is quite important.*"
	Preservation of soil quality and structure	Limit soil erosion: "*The cover helps hold the soil in steep areas.*"
		Maintain ground bearing for passage with tractors: "*So that the ground bears. This way, we can still go to the plots, even when it rains.*"
		Preserve or encourage soil fertility: "*It allows you to trap nitrogen because when you have bare land, there is nothing at all, whereas if you have plants, it traps and releases it again in the spring when you destroy them.*"
		Maintain soil quality and structure: "*Sowing is really to improve the structure of the soil.*"
	Adaptation to climate variability	Preserve water resources: "*When you have summer rain, especially in times of drought, you do not lose any, and your perspiration is improved.*"
	Other reasons	Aesthetics: "*It means that when there is grass between the rows, visually it is good.*"
		Obligated by regulations: "*…in relation to the specifications, since in fact we no longer have the right to total weeding.*"
		Lower maintenance costs: "*The goal is to occupy the land, and without it costing us a lot.*"
Headland	Reduction of phytosanitary products and preservation of water quality	Use bio-indicative plants: "*It is also quite interesting to see the plants that grow spontaneously around the plot to realize the water status of the plot and everything.*"
		Create a buffer zone for chemicals: "*It makes a buffer zone when we chemically weed. It is still an area where if there is a little runoff, it absorbs the products a little bit rather than going to the ditch.*"
	Preservation and development of biodiversity	Enhance biodiversity: "*The objective, first of all, is that it brings back a certain life because there are animals, there are insects that live in it, there are flowers, things, so it's really important.*"
	Preservation of soil quality and structure	Limit soil erosion: "*It prevents significant erosion; it allows you to keep the headlands flat.*"
		Maintain ground bearing: "*It is more supportive, so there is less damage to the soil when using a tractor.*"
	Adaptation to climatic variability	Carbon sequestration: "*They are carbon traps, given the headland areas that we can have.*"
		Preserve water resources: "*Since we have the ditch at the bottom, it creates a water reservoir.*"
	Other reasons	Aesthetics: "*I think it's clean, I like it like that.*"
		Obligated by regulations: "*It's no longer authorized to have bare headlands, so they must be covered. It's part of the specifications.*"
		Lower maintenance costs: "*It would be stupid to go and spend time in areas where we turn regularly.*"