Organic Farming restores Biodiversity

A Finnish researcher has investigated to what extent organic farming can restore biodiversity losses caused by intensive land uses in the past. The results of his study of 131 fields in Finland show that, even for short periods, organic cropping allows some restoration of weed populations, which are found in some cases at a higher frequency and density than before the intensive use of these lands. Overall, this practice could be useful for sustainable agriculture.

Land use patterns and practices have a major influence on biodiversity in Europe and around the world. In some cases, land use patterns and practices support the conservation and sustainable use of biodiversity, while in others they cause serious threats. As reported in the European Community Biodiversity Strategy\(^1\), highly intensive agricultural land uses are responsible for the decline in Europe’s biodiversity in many regions. Intensive cropping practices have been widely shown to be detrimental to arable weed communities. In the framework of the Common Agricultural Policy, the recently increased subsidies allocated to organic farming have led to an increase in organically cultivated areas, which is expected to restore the species composition that existed before the lands were used so intensively.

A Finnish researcher has recently investigated to what extent this conversion to organic cropping can restore the species composition of arable weed communities to the state they were in before intensive cropping measures were applied. To this end, he compared data from two extensive field surveys performed in Finland in the 60s (before the application of herbicides) and in the 90s (on average 4.5 years after conversion to organic cropping). He focussed on the density and frequency of occurrence of 41 weed species on 67 dairy farms and 6 crop husbandries.

This study shows that, compared to the 60s:

- 3 species are not found anymore; 8 species are found less frequently; 19 species are found at a higher frequency and 11 at the same frequency.
- The population density is lower for 18 weed species and higher for 13 weed species.

The author concludes that many of the species that were abundant before farming was intensified are still abundant after suspension of this practice. He suggests that these species might be more resistant to intensive farming practices. He further notes that species that were not restored after conversion to organic cropping are not adapted to high nitrogen levels, which occur under intensive farming. In addition, he suggests that the cereal monocultures popular between the 60s and 90s and the short period of organic cropping might explain why these species have still not been restored. Compared to the 60s, the increased frequency and/or density of weed species observed in the 90s show that current organic cropping is beneficial for biodiversity in general.

Overall, the results of this study demonstrate that organic cropping, even for relatively short periods, can restore some of the weed populations to states comparable to those before intensive cropping measures were implemented. For this reason in particular, promoting organic agricultural practices could help achieve more sustainable development.


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