



**SAFEGUARD**

Safeguarding European  
wild pollinators



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Safeguard Project

**PRACTICE  
ABSTRACT**

# Inadequate animal pollination leads to reduced quality of food crops

Pollinating animals are essential for the reproduction of many cultivated plants, including fruits, vegetables, and nuts. However, despite a large amount of research on pollinators' contribution to agricultural production and the consequences of their decline on human welfare, many aspects are still unclear or under-researched, and results are sometimes conflicting.

Against this background, our study aimed to provide a global quantitative review of the effects of animal pollination on several aspects of food quality, including organoleptic characteristics and nutritional value.

## The main results reveal that:

- 1 Food crops pollinated by animals had on average 23% better quality than those not pollinated by animals, indicating that almost one-fourth of the total quality of the fruit depends solely on the pollination services provided naturally by animals;
- 2 Pollinators critically improve the shape, size and shelf-life of fruits and vegetables, but contribute also to increasing their nutrients.

## The production of commercially suboptimal fruits and vegetables derived from inadequate animal pollination has important consequences:

- 1 It affects farmers' decision to harvest and consequently their access to fresh produce markets or alternative processing;
- 2 Growing fruit that is short-lived and looks imperfect is likely to increase food waste, impacting on a larger scale the whole food production chain, the global consumption of healthy food, and the management of agricultural land;
- 3 It is necessary to maintain effective and efficient animal pollination of food crops throughout agricultural production landscapes.

## Source

Gazzea, E., Batáry, P., Marini, L. (2023). Global meta-analysis shows reduced quality of food crops under inadequate animal pollination. *Nature Communications*, 14: 4463.  
<https://doi.org/10.1038/s41467-023-40231-y>



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