

Catch Crops for Soil Fertility, Biodiversity and Profitable Resilient Farming



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Arable and vegetable farms face nitrogen losses, soil erosion, compaction, declining fertility, weed pressure and biodiversity loss. Nitrate leaching reduces fertiliser efficiency, while soil biological activity and populations of beneficial insects decline, affecting yield stability and crop health.

Systematic use of catch crops between main crops extends soil cover and strengthens soil functions and biodiversity. Legumes (vetch, pea, clover) fix 20–200 kg N/ha and supply nitrogen to the following crop. Grasses (oats, rye) conserve nitrogen and promote humus formation. Cruciferous species (mustard, oil radish) take up residual nitrogen and loosen compacted soils. Flowering species support pollinators and beneficial insects. Species mixtures increase plant diversity, soil life, and system stability.

Catch crops reduce nitrate leaching, improve water infiltration, suppress weeds and increase functional biodiversity. Diverse root systems stimulate soil organisms and support long-term humus build-up, improving nutrient efficiency, yield stability, pest control and erosion resilience.

Practical recommendations

- Sow immediately after harvest to maximise biomass and flowering time.
- Choose site-adapted mixtures combining legumes and flowering components.
- Mulch or cut 3–4 weeks before incorporation; incorporate shallowly into dry soil about 3-weeks before the next crop.
- Avoid seed set.
- Use species diversity strategically to improve yield stability and ecological performance.



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Further Information on farmbionet.eu

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