

SOFI OCN 3428 - OC&C: Unit 2
Theory of Organic Cultivation Element 11
Biodiversity Benefits of Organic Farming

23 studies throughout Europe over 13 years; mainly lowland farms
Plants; x5 more wild plants incl. Rare spp
. 57% more wild spp. overall

Invertebrates; x3 more non pest butterflies. x2 more spiders. x1.6 arthropods (= bird food)

Birds; 25% more at field edge. 44% more in field aut/winter. x22 more breeding skylarks and yellowhammers.

Aphids; levels significantly lower. Pest butterfly numbers same as on conventional farms.

Practises; set aside/crop rotation with clover and grass leys/spring sowing/permanent pasture/no chemicals/green manuring/mixed farming/maintenance of trees, hedges, field margins, ponds and other wildlife habitats.

Role of agriculture in biodiversity

76% UK is agricultural land and also focus of greatest decline in biodiversity. Is provision of SSSIs and conservation areas sufficient. Conservation vs Preservation? Healthy Environment?

Soil biodiversity

> earthworm species, microbial activity, mycorrhizae = increased nutrient availability to crops. (Conventional agri. still intensifying/problems with GMOs)

Agricultural Genetic Diversity Wide gene pool for development of new varieties/local adaptation/choice of varieties prevents regional or national failures through disease in monocultures.

Cost of delivering biodiversity benefits

Govt. organic farming scheme: £1m yields at least 15 000 ha after 5 yrs.

Countryside Stewardship costs: £1m annually funds 4300 ha (and requires further funding)

Compare: Conversion of all UK agriculture (18 600 000 ha) = £1.2 billion a year over 5 yrs followed by lowered CAP subsidies. Or, £3 billion/year supporting/subsidising conventional agriculture + £2.3 billion/year indirect costs (environmental damage etc)