BIODIVERSITY FRIENDLY AGRICULTURAL (ARABLE LANDS) PRACTICES TAXONOMY

Puzzling Biodiversity

Does a consensus on biodiversity-friendly practices efficiency exist ?

Biodiversity friendly agricultural (arable lands) practices taxonomy

Contributions

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Contributions and acknowledgements

organization for biodiversity certificates

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Does a consensus on biodiversity-friendly practices efficiency exist ?

Practice 1. Managing outstanding ecological features

Practice 2. Ponds and water bodies

Practice 3. Buffer strips (watercourses)

Practice 4. Permanent grassland (more than 5 years)

Practice 5. Temporary grassland

Practice 6. Field margins

Practice 7. Hedgerows

Practice 8. Intra-plot agroforestry

Practice 9. Tillage

Practice 10. Protecting fauna during work and harvesting

Practice 11. Spatial diversification of crops

Practice 12. Reducing the surface area of plots

Practice 13. Drainage

Practice 14. Reducing herbicides

Practice 15. Reducing insecticides

Practice 16. Reducing fungicides

Practice 17. Fertilisation

Taxonomie des Practices agricoles favorables à la biodiversité

Agricultural (arable lands) management practices list

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Level 0. No ecological elements identified as such or < 5/km².

Level 1. At least 5 outstanding ecological features per km² mapped. Identification, description and preservation plan for significant biodiversity features (cavities, micro-habitats, stones, stumps, etc.) in isolated trees, woodland patches and traditional structures (including low walls). No destruction of outstanding features in the last 5 years

Level 2. All the outstanding ecological features identified are surrounded by a 5 m wide vegetated buffer strip, maintained every two years except April-September, no plant protection products, diversified sowing with staggered flowering. No outstanding features destroyed or uprooted in the last 10 years

Level 3. At least 10 ecological elements per km². Conservation and integration of new cavities and openings (low walls, walls, etc.), and/or installation of nesting boxes near or on farm buildings. 10 cavities and/or nest boxes per km².

Level 4. At least 20 ecological features per km². 20 cavities and/or nesting boxes per km².

Level 5. At least 50 ecological features per km². 50 cavities and/or nesting boxes per km².

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Practice 1.
Management of remarkable ecological features in the UAA: isolated trees, woodland patches, structures maintained for wildlife, low walls, etc.

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Level 0. No pond or water bodies

Level 1. Maintain existing watercourses in good ecological condition. Illumination, partial cleaning spaced out over time. If there is no pond: create a pond and/or a water body (gently sloping or stepped banks, meandering banks). The pond or water body must be at least 5m2 in size and at least 80cm deep. Maintenance not carried out from February to August.

Level 2. Preserve wetlands in the spring: do not plough them, work around them during the various tillage operations. No planting around the pond or water body: encourage natural vegetation. No use of fertilisers, pesticides or herbicides.

Level 3. Presence of helophytes, regular mowing around the edges. Establishment of a vegetated buffer strip of at least 10m around the waterhole. If there are drinking troughs: restricted access and fencing around part of the pond or water body

Level 4. Create a network of ponds (minimum 2 per km2): the distance between ponds must not exceed 500 m. Encourage their proximity to agro-ecological infrastructure (Woodland patches, hedges, etc.).

Level 5. Diversification of water bodies profile: management in shifts to encourage a diversity of ages, sizes, etc. Minimum of 4 water bodies per km². Maintenance of water bodies every 10 years maximum, if necessary: clearing of undergrowth, reshaping of gently sloping banks. Dredging every 15 years maximum.

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Practice 2. Ponds and water bodies

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Level 0. 5m buffer strip along watercourses.

Level 1. Buffer strip of 5 to 10m with no riparian vegetation. Identification and preservation of significant biodiversity features (cavities, micro-habitats, stones, stumps, etc.). No fertilisation or use of plant protection products on the strip, no ploughing.

Level 2. Buffer strip longer than 10m with no riparian vegetation. Presence of permanent herbaceous, shrub or tree cover. Presence of heterogeneity in the strips: scree, woodpiles, mounds, copses, bushes, brambles, etc.

Level 3. Buffer strip of 5 to 10m with riparian vegetation. Sustainable maintenance and management of the riparian zone, no systematic pruning. Encourage herbaceous and flowering cover along watercourses, maintain melliferous plants during the summer.

Level 4. Buffer strip of more than 10m with riparian vegetation, presence of a grassy and flowery hem around the riparian vegetation. Differentiated mowing management (areas mowed in early spring, areas mowed late, areas mowed every 2 years, areas never mowed). Multi-strata and multi-species riparian forest (at least 4 species).

Level 5. Buffer strip of over 15m with riparian vegetation. Removal of mawn biomass. If riparian grassland: extensive grazing and differentiated grassland management.

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Practice 3. Buffer strips along watercourses

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Level 0. Use of plant protection products. Uncontrolled nitrogen fertilisation.

Level 1. No use of plant protection products (including fencing), rational nitrogen fertilisation

Level 2. No grazing when the soil is not healthy. Maintenance of a diverse natural flora: no reseeding or over-seeding. In the last 3 years at farm level: no destruction of permanent grassland for cultivation.

Level 3. In the case of grazing, no treatment of the animals in the 15 days preceding their access to the pasture (ban on medicated anti-parasite treatment products on the plot).

Level 4. At least 50% of the permanent grassland managed extensively (no early mowing, maximum 1 LU/ha, consumption rate not exceeding 80%). At least 5% of the permanent grassland is maintained as natural grassland (minimum 20 years).

Level 5. At least 80% of permanent grassland managed extensively (no early mowing, maximum 1 LU/ha, consumption rate not exceeding 80%). At least 10% of permanent grassland maintained as natural grassland (minimum 20 years) and connectivity with other agro-ecological infrastructure (<80m).

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Practice 4. Permanent grassland (more than 5 years)

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Level 0. Use of plant protection products

Level 1. Temporary grassland maintained for at least 3 years. No use of plant protection products

Level 2. Reasoned fertilisation. For sown grassland: broadcast sow (not row sow), diversify species with at least two grasses and two legumes. In the event of grazing or animal access: no parasitic treatment for 15 days prior to access, limit grazing and the use of machinery during rainy periods.

Level 3. Maintain temporary grassland for at least 4 years. For sown grassland: favour farm-saved seeds, melliferous species and broadleaved species. A total of at least 10 grassland species.

Level 4. Temporary grassland maintained for 5 years. If temporary grassland is destroyed: no herbicides used, turned over in autumn using shallow tillage (<10cm), mowing and export of mown material before turning over, establishment of a crop with a high nitrogen uptake capacity, or of a nitrate-trapping catch crop.

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Practice 5. Temporary grassland

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Level 0. No external field margins and/or intensive management of field margins.

Level 1. Minimum 1m wide strip, no use of herbicides, pesticides or fertilisers, no maintenance from April to September. No turning or ploughing of the margin Specific composition: promote spontaneous flora and local species.

Level 2. Strip at least 2 m wide, maintained no more than once a year, mown more than 15 cm from the ground. Mowing residues are exported. In the case of ""'weed"" borders, a separating strip of at least 80cm must be created between the edge of the field and the cultivated area (mechanical maintenance only, with removal of mowing residues

Level 3. Diversification of planting (along agro-ecological infrastructures, within the crop area), structure and maintenance of field margins, differentiated spatial management. When sowing or re-sowing: mix grasses/leafs/legumes. Encourage spread flowering

Level 4. Minimum 5m wide border, maintained every two years.

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Practice 6. Field margins

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Level 0. No tree infrastructure at the edge of the plot or monospecific hedges. No use of fertilisers, herbicides or pesticides.

Level 1. Multi-species monostrate hedgerows (including isolated tree rows) (minimum of 3, local and non-invasive species), no maintenance between March and September. Minimum ground clearance of 1.5m. Priority should be given to planting perpendicular to the slope. Do not use hedge trimmers. Hedge density > 1 linear metre/ha.

Level 2. Hedgerows with at least two layers (including trees, shrubs, bushes, herbaceous plants and horizontal plants) and a minimum of 3 species. Favour fruit and melliferous species (flowering and fruiting spaced throughout the year). Minimum length of 70m. Identify and preserve significant biodiversity features (cavities, micro-habitats, stones, stumps, etc.). Maintain dead wood on the ground.

Level 3. Hedgerows with at least three strata (tree, shrub, bush, herb and horizontal), multi-species (minimum 5), at least 3m wide. Presence of a grassy hem on either side of the hedge (minimum 1m), managed by late mowing (after mid-September). Hedge density > 10 linear metres/ha.

Level 4. Hedgerows with at least four strata (tree, shrub, bush, herb and horizontal), multi-species (minimum 6), at least 5m wide (including the hem). Chainsaw maintenance, spaced out over time (5/10 years, pruning every 15 years maximum). On a plot scale: diversified hedgerows (size, structure, age, etc.). Hedge density > 25 linear metres/ha.

Level 5. Hedgerows with five layers (trees, shrubs, bushes, herbaceous plants and horizontal), multi-species (minimum 8), minimum double hedgerow. Hedge density > 50 linear metres/ha.

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Practice 7. Hedgerows

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Level 0. Absence

Level 1. Alignment of trees: monospecific and/or density of less than 30 trees/ha, grassed strip of 2m around the trees

Level 2. Alignment of trees: multi-species (minimum of 3 species), density greater than 30 trees/ha, management with late mowing of the canopy.

Level 3. Alignment of trees: density greater than 25 trees/ha (mature tree height > 15 m), 50 trees/ha (mature tree height between 10 and 15 m) or 75 trees/ha (mature tree height < 10 m).

Level 4. Alignment of trees: multi-storey, minimum of 5 species between trees and shrubs, density greater than 50 trees/ha (adult tree height > 15 m), 75 trees/ha (adult tree height between 10 and 15 m) or 100 trees/ha (adult tree height < 10 m).

Level 5. Alignment of trees: minimum of 8 species between trees and shrubs, including 3 high-profile trees, density greater than 75 trees/ha (adult tree height > 15 m), 100 trees/ha (adult tree height between 10 and 15 m) or 100 trees/ha (adult tree height < 10 m).

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Practice 8. Intra-plot agroforestry

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Level 0. Systematic conventional tillage: between 20 and 40 cm, every year, mouldboard plough, or, systematic pseudo-tillage: between 20 and 40cm, every year: spading machine, disc plough, rotovator.

Level 1. Simplified cultivation techniques: deep cultivation without turning over (heavy cultivator). No use of farm machinery on non-stable soils

Level 2. Simplified cultivation techniques: shallow cultivation only (10/15cm) Trailed or animated machinery

Level 3. Intercropping cover, no tillage between the main crop and the cover crop, occasional tillage (once every two years maximum).

Level 4. For wide-spaced crops: occasional strip-till. Permanent cover crops.

Level 5. Strict direct seeding under permanent live cover or dead plant cover, with a maximum of one tillage every 5 years. If cover crops are destroyed: do not use herbicides.

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Practice 9. Reducing the pressure exerted by tillage

Level 0. Use a reasonable forward speed for machinery during work and harvesting (< 8km/h), stop if fauna is spotted (particularly flying fauna).

Level 1. Do not use several machines at the same time on the same plot. Create exclosures and set up refuge areas at the edge of the plot.

Level 2. Set up a harvesting route that allows the animals to escape (centrifugal or strip work). If the plot is cut before centrifugal work, start on the opposite side to the refuge areas.

Level 3. Use scarebars, adapting them to harvesting periods When mowing: avoid rotary mowers, prefer mowers with cutting bars

Level 4. Cutterbar height greater than 15cm.

Level 5. No night harvesting (except in weather conditions requiring night harvesting in the event of an impact on crop quality and quantity).

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Practice 10. Reducing the impact of work and harvesting on fauna (excluding tillage)

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Does a consensus on biodiversity-friendly practices efficiency exist ?

Level 0. Index <2 Crop functional diversity: 1 botanical family

Level 1. Index between 2 and 3. Crop functional diversity: 2 botanical families

Level 2. Index between 3 and 4. Functional diversity of crops: 3 botanical families

Level 3. Index between 4 and 6. Functional diversity of crops: 4 botanical families

Level 4. Index between 6 and 7. Crop functional diversity: >4 botanical families

Level 5. Index >7. Crop functional diversity: >4 botanical families

Note : Use of the reciprocal Simpson index 1/sum(pi2) with pi proportion of each crop (between 0 and 1). Associated crops are counted as a functional group.

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Practice 11. Spatial diversification of crops

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Does a consensus on biodiversity-friendly practices efficiency exist ?

Level 0. At farm level, no more than 80% of the UAA is made up of large plots.

Level 1. At farm level, no more than 70% of the UAA is made up of large plots.

Level 2. At farm level, no more than 60% of the UAA is made up of large plots.

Level 3. At farm level, no more than 40% of the UAA is made up of large plots.

Level 4. At farm level, no more than 30% of the UAA is made up of large plots.

Level 5. At farm level, no more than 20% of the UAA is made up of large plots.

Note : Large plot: > 6 hectares

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Practice 12. Reduction in plot size (excluding grassland)

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Level 0. More than 50% of the farm's UAA is drained

Level 1. 30 to 50% of the UAA is drained (including grassland). No drainage in wet areas/meadows.

Level 2. Less than 30% of the UAA is drained (including grassland). No drainage of permanent grassland

Level 3. At least 50% of drained areas equipped with devices to interrupt drainage during periods when it is not essential. 100% of drained areas under annual crops are covered during the long intercropping period with a nitrogen catch crop until the end of February

Level 4. Drainage water from at least 50% of the farm's drained surfaces is directed towards purification and decantation systems before being discharged into watercourses.

Level 5. No drainage.

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Practice 13. Reduced drainage

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Does a consensus on biodiversity-friendly practices efficiency exist ?

Level 0. Herbicide IFT higher than the reference level

Level 1. Herbicide IFT is more than 80% of the reference level. Alternation of chemical families No treatments from the black list

Level 2. Herbicide IFT is more than 60% of the reference level

Level 3. Herbicide IFT is more than 40% of the reference level

Level 4. Herbicide IFT is less than 40% of the reference level

Level 5. Follows organic farming specifications for herbicides

Note : The reference IFT is established by crop and by region. The black list was developed by Greenpeace (2016). Synthetic herbicides = not authorised for organic farming.

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Practice 14. Reducing the use of synthetic herbicides

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Does a consensus on biodiversity-friendly practices efficiency exist ?

Level 0. Total insecticide IFT above the reference level

Level 1. Insecticide IFT is over 80% of the reference level Alternation of chemical families. No treatments from the black list

Level 2. Insecticide IFT is greater than 60% of the reference level. No preventive treatments

Level 3. Insecticide IFT is greater than 60% of the reference level. No preventive treatments

Level 4. Insecticide IFT is less than 40% of the reference level

Level 5. Follows organic farming specifications for insecticides

Note : The reference IFT is established by crop and by region. Insecticide" here covers all chemical treatments designed to eliminate pests. The black list was developed by Greenpeace (2016). Synthetic insecticide = not authorised for organic farming.

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Practice 15. Reducing the use of synthetic insecticides

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Does a consensus on biodiversity-friendly practices efficiency exist ?

Level 0. Fungicide IFT above the reference level

Level 1. Fungicide IFT is over 80% of the reference level. Alternation of chemical families No treatments from the black list

Level 2. Fungicide IFT is over 60% of the reference level. No preventive treatments (except for seeds)

Level 3. Fungicide IFT is more than 40% of the reference level

Level 4. Fungicide IFT is less than 40% of the reference level

Level 5. Follows organic farming specifications for fungicides.

Note : The reference IFT is established by crop and by region. The black list was developed by Greenpeace (2016). Synthetic fungicide = not authorised for organic farming

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Practice 16. Reducing the use of synthetic fungicides

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Niveau 0. Biodiversity issues are not taken into account in fertilisation management.

Niveau 1. No nitrogen fertilisation within 10m of agro-ecological infrastructure (hedges, watercourses, ponds, old trees, etc.). Draw up a provisional fertilisation plan

Niveau 2. Establish a dense and homogeneous intercropping cover (leguminous or non-leguminous) maintained for at least 8 weeks after sowing. Nitrogen surpluses must not exceed 30kg/N/ha

Niveau 3. Establish a long-duration nitrogen catch crop without destruction or incorporation before the end of winter. No nitrogen surplus per plot.

Niveau 4. 100% of nitrogen fertilisation is of diversified organic origin, certified AB or equivalent, ideally with slow decomposition.

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Practice 17. Fertilisation

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