



IATP Sustainable Biomass Production Principles and Practices

These principles were developed through a broad stakeholder dialogue conducted by the Institute for Agriculture and Trade Policy in 2003. The associated practices listed are examples of how farmers can meet the respective principles in their crop production in accordance with IATP's Sustainable Biomass Standards.

1. Strengthening the soil

Over time the soil will become richer in organic matter, the topsoil deeper, and wind/water erosion reduced or eliminated. Conservation tillage and crop rotations will help optimize water retention, maximize carbon sequestration, and improve wildlife habitat. Perennial, deep rooted crops and grasses will be used whenever possible to protect the soil.

2. Protecting the air and water

Water use will become more efficient. Any water leaving the farm (streams, irrigation canals, etc.) will be clean and able to support healthy aquatic ecosystems. Farming practices will reduce or eliminate wind erosion, chemical or biological drift, odors, and other impacts on air quality. Chemicals used will be non-persistent. Chemicals that are endocrine disrupting, carcinogenic or mutagenic in humans will not be used.

Associated practices

- ▶ Crop rotations and cover cropping
- ▶ Minimized tillage and tillage timing to protect soil quality/ reduce compaction
- ▶ Erosion control structures (terraces, grassed waterways, etc.)
- ▶ Continuous living cover wherever possible on farm fields to prevent erosion
- ▶ Buffer strips for water/soil retention and wildlife habitat
- ▶ Incorporation of organic materials, "green manure" crops and other natural soil
- ▶ Eliminating and minimizing herbicide/pesticide use through Integrated Pest Management (IPM), biological and management practices, and other non-chemical approaches
- ▶ Prohibition of the most toxic (carcinogenic, endocrine disrupting, mutagenic)

3. Sound nutrient management

Use of on-farm sources of nutrients (manure, crop rotations, cover crops, and related practices) will be maximized. The efficiency of fertilizer use will be optimized through regular soil testing, timing applications to crop growth/needs, and other measures to ensure the risk of leaking nutrients to the environment are minimized. All nutrients will be used with care to reduce runoff, odors, and the loss of nutrients into the air. Industrial and other toxic wastes will not be used.

Associated practices

- ▶ Applying nutrients based upon regular soil testing, legume crediting and recommended agronomic rates
- ▶ Maximize use of green manure crops, compost, manure and other non-commercial nutrients
- ▶ Utilize practices to reduce runoff and leaching of nutrients
- ▶ Prohibit use of industrial sludge and other waste products

4. Energy efficiency and increased use of renewable sources

Conservation, use of renewables, and on-farm energy production will be maximized to reduce costs, dependence on fossil-fuel inputs, and greenhouse gas (GHG) emissions.

Associated practices

- ▶ Identify and optimize on-farm energy consumption
- ▶ Wherever possible, utilize renewable energy resources (wind, solar, biofuels, biomass)
- ▶ Reducing tillage and unnecessary trips across field
- ▶ Efficient irrigation management
- ▶ Keeping machinery in good working order
- ▶ Reducing dependence on commercial (i.e. manufactured) fertilizers/inputs

5. Promoting biological diversity and nature

Farming practices will sustain natural systems, wildlife and biodiversity by protecting habitat and corridors, carefully selecting crop varieties, maximizing the use of polycultures and perennials where appropriate, and by developing conservation plans to protect endangered or imperiled plants, animals and genetic resources.

Associated practices

- ▶ Prohibit use of GMO varieties
- ▶ Maximizing use of perennials and crop rotations
- ▶ Where possible, using native varieties/species
- ▶ Protecting endangered or imperiled plants/animals by providing habitat, corridors or altering farming practices
- ▶ Creating and implementing conservation plans to promote wildlife habitat and biological diversity on farm

6. Respecting social and cultural heritage

Special places, including burial mounds, sacred grounds, and other places of important social and cultural value will be respected.

Associated practices

- ▶ Actively work to protect social and cultural heritage sites (burial sites, historical monuments and locations, etc.)

7. Economic sustainability

Farmers and workers will receive fair compensation. Crop prices, wages for employees, and returns on investment will be adequate to ensure the long-term social and economic sustainability of farming and rural communities.

Associated practices

- ▶ Assuring a fair price is received for farm products and services
- ▶ Paying fair prices for hired labor, services and off-farm assistance

8. Safe and healthy working conditions

The farming methods will ensure the safety and well-being of the farming families, their employees, neighbors and communities.

Associated practices

- ▶ Machinery is maintained in safe working condition with appropriate safety guards/equipment in place
- ▶ Potentially hazardous chemicals (pesticides, fuels, etc.) stored in safe and secure location
- ▶ Emergency and contingency plans prepared for farm
- ▶ Proper ventilation and safety equipment in on-farm buildings

9. Safe packaging, transportation and storage

Farmers will minimize environmental impacts from handling and shipment of crops, including the use of bio-based packaging and the avoidance of prohibited and other potentially damaging chemicals/toxics. Transport will be minimized to reduce costs, energy use and GHG emissions.

Associated practices

- ▶ Potentially hazardous chemicals/products are not used as additives in packaging, transport or storage
- ▶ Energy use in storage (drying/etc.) is reduced as much as possible
- ▶ Transportation distance of farm products is reduced whenever possible to eliminate excessive energy use, costs and GHG emissions

10. Stakeholder participation, transparency and simplicity

Producers, processors and consumers of the products made from these crops will be involved in the evolution of these goals and standards. Careful documentation of plans and actual practices will be an important aspect of this process. In all aspects, it should be clear and simple to enhance understanding and performance.

Associated practices

- ▶ Open and simple record-keeping for farm practices and operations
- ▶ Willingness to share (non-confidential) information with other stakeholders

For more information about IATP's Sustainable Biomass Standards, please contact

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