

Technology Fact Sheet

Biochar technologyⁱ

1) Technology description

Biochar has a porous structure and highly stable carbon form, which prevents it from releasing GHGs (carbon dioxide or methane). In addition, it can retain soil moisture, nutritious matters and useful bacteria, raise soil fertility and agricultural productivity while functioning as a natural carbon sink.

2) Socio-economic benefits

- Producing biochar from agricultural residues can be beneficial for addressing environmental problems because the end products are friendly to the environment.
- Incorporating biochar into the soils will increase germination and growth rates and boost productivity. For example, annual crop productivity can increase by 200% by using high-quality biochar.
- Biochar can also increase the pH and reduce the content of Al_{+3} in acid soils, or tropical farmlands where soil is severely mineralized due to intensive farming. Using biochar will raise the pH of different soil texture, with a maximum increase of up to 1.2 pH unit.

3) Environmental benefits

By transforming carbon in plant biomass to carbon sequestered under the ground, biochar-applied soils will act as a long-term carbon sink.

4) Status of technology

The soybean technologies and no-till potato are being applied and extended to many areas.

5) Application potential

Vietnam has a considerable biomass potential with 38 million tonnes of straw, 6-7 million tonnes of rice husk, 1.4 million tonnes of sugarcane leaves and stalks, and a significant amount of other agricultural by-products such as grass, leaves, sawdust, or bagasse, etc. This makes a diverse source of materials for biochar production.

6) Barriers

Hard to change from traditional practices, difficult to collect materials and lack of experience or technical support.

7) Costs

Implementation and technology application costs

- The technology development costs are low because local natural material resources can be used.
- Compared to conventional technology, this technology has higher costs.

- For design of the application and the application of different technologies, development of documentation, training sessions and demonstration program for farmers learning.

ⁱ **This fact sheet has been extracted from TNA Report - Adaptation for Vietnam. You can access the complete report from the TNA project website <http://tech-action.org/>**