

Biochar

Black carbon produced from wood chips, plant residues, manure or other agricultural waste products is known as biochar. When utilized correctly, biochar can help increase soil carbon, revitalize nutrient impoverished soils, and boost plant productivity. NCR-SARE has funded several research projects that have examined at how biochar interacts with soil and crops in order to maximize its potential benefits.

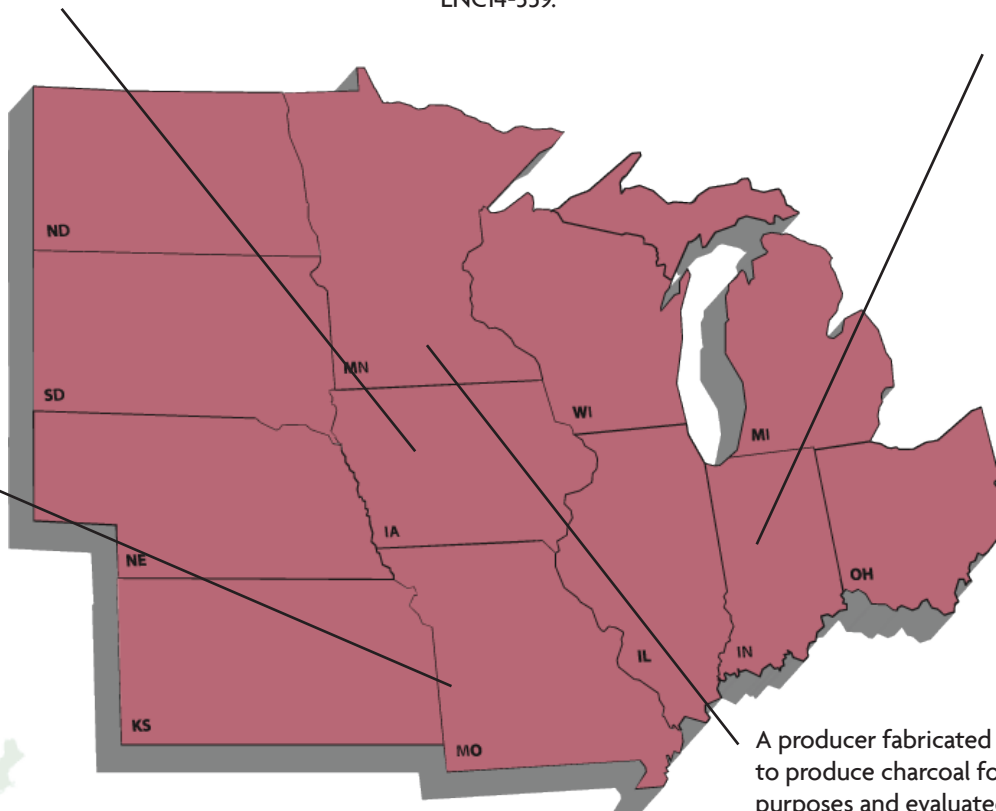
NCR-SARE Project Sampler

To view SARE's entire biochar portfolio, or just the North Central region's, visit <https://projects.sare.org>. For selected NCR biochar grants, see the reverse side.

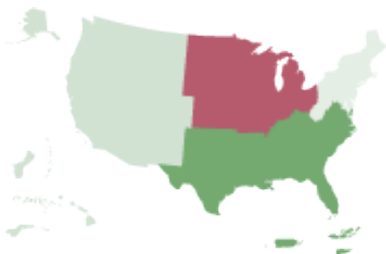
Fruit and vegetable growers and grower organizations have called for more research into biochar and its potential use in vegetable cropping systems. iowa grantees collected data on nutrient leaching, soil microbial population dynamics, crop growth characteristics, and yield. See <https://projects.sare.org> and search for project number GNC13-166.

Researchers at Purdue University conducted field experiments to assess the effect of biochar produced from different feedstocks on crop growth and pests in a three-year vegetable rotation on six Indiana vegetable farms. See <https://projects.sare.org> and search for project number LNC14-359.

One problem with using biochar in blueberry production is that biochar has a naturally high pH. A blueberry grower experimented with washing the biochar in a compost stew to reduce the pH, and then added that to the top 6 inches of native soil creating 12 inches of loamy topsoil. See <https://projects.sare.org> and search for project number FNC17-1087.



A producer fabricated three kilns to produce charcoal for agricultural purposes and evaluated their performance. He found that soil treated with a mixture of composted animal manure and bio-char had remarkable tilth and water mitigation effects that were evident after the first application. See <https://projects.sare.org> and search for project number FNC10-807.



NCR SARE's Biochar Portfolio

Selected Grants

RESEARCH AND EDUCATION GRANTS

Evaluating the Impact of Biochar on Soil Fertility and Crop Productivity through Farmer Participatory Research and a Student Internship Program

Kevin Gibson, Purdue University, Indiana, LNC14-359, \$194,732

FARMER AND RANCHER GRANTS

Growing Organic Blueberries Using Biochar

Richard Mareske, Sacred Earth Arts, Michigan, FNC17-1087, \$7,500

Biochar Kiln Fabrication and Operation

John Topic, Minnesota, FNC10-807, \$3,893

Linking Local Food and Forests: Making the Connection with Biochar

Jonathan Sowash, Ohio, FNC09-792, \$17,983

GRADUATE STUDENT GRANTS

Effects of Biochar on Soil Nutrient Retention and Microbial Communities in Vegetable Cropping Systems

Brandon Carpenter, Iowa State University, Iowa, GNC13-166, \$9,367

Updated 2018

For information on more SARE-funded biochar projects search the SARE projects database: <https://projects.sare.org>.



This product was developed with support from the Sustainable Agriculture Research and Education (SARE) program, which is funded by the U.S. Department of Agriculture — National Institute of Food and Agriculture (USDA-NIFA). Any opinions, findings, conclusions or recommendations expressed within do not necessarily reflect the view of the SARE program or the U.S. Department of Agriculture. USDA is an equal opportunity provider and employer.