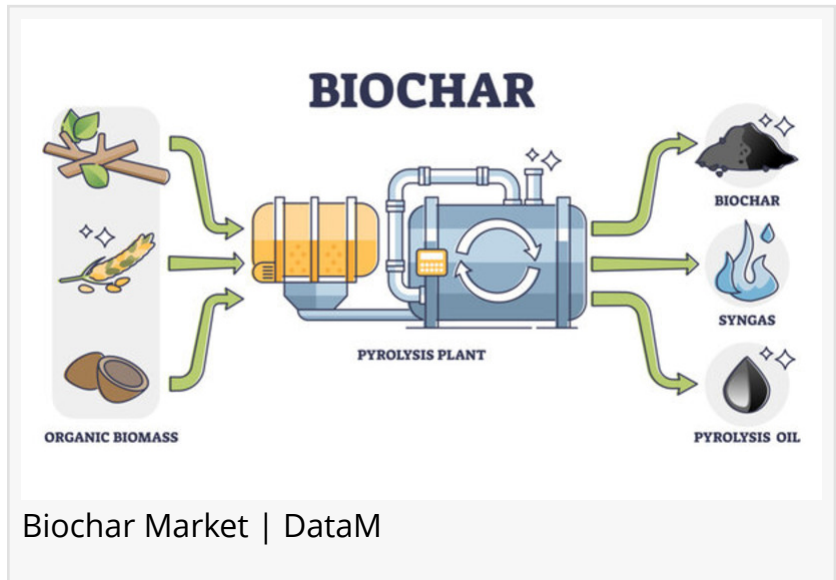


# Biochar Market is Projected to Grow at a CAGR of 6.6% From 2024-2031 | DataM Intelligence

*Biochar Market is projected to grow steadily, fueled by rising demand for soil health improvement, carbon sequestration, and sustainable agriculture.*

TEXAS, TX, UNITED STATES, September 3, 2025 /EINPresswire.com/ -- The global [biochar market](#) is set for significant growth, projected to expand at a CAGR of 6.6% from 2024 to 2031.

Biochar a porous, carbon-rich solid produced from the carbonization of organic waste is widely used for soil amendment, carbon sequestration, and environmental remediation, with additional applications emerging across energy and agriculture.



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Biochar is derived from waste materials such as forestry residue, agricultural waste, and animal manure via pyrolysis, gasification, or related thermal processes. Its ability to sequester carbon for long periods, improve soil fertility, and reduce the need for chemical fertilizers makes it a favored solution for sustainable agriculture and climate change mitigation. Additionally, biochar production provides an energy source through syngas and bio-oil, enhancing its appeal in waste-to-energy initiatives.

## United States: Recent Industry Developments

□ In July 2025, Charm Industrial announced the expansion of its biochar production facilities in Colorado. The project aims to sequester more than 50,000 tons of CO<sub>2</sub> annually. It supports regenerative agriculture and carbon removal markets.

□ In June 2025, Microsoft partnered with CarbonCure and biochar startups to purchase long-term carbon removal credits. The agreement accelerates biochar deployment across U.S.

farming communities. It reflects growing demand for negative emissions solutions.

□ In May 2025, Pacific Biochar received \$100 million in funding to scale biochar projects in California. The initiative focuses on wildfire prevention, soil enhancement, and carbon credit generation.

## Japan: Recent Industry Developments

□ In July 2025, Sumitomo Forestry launched a pilot biochar plant using forestry residues in Hokkaido. The facility integrates circular economy practices. It provides biochar to local farmers for soil health improvement.

□ In June 2025, Mitsubishi Corporation invested in a joint venture to develop biochar for carbon credits. The project leverages agricultural waste from rice production. It aligns with Japan's carbon neutrality roadmap.

□ In May 2025, Kyoto University initiated R&D on high-performance biochar for water purification. Early results show strong potential in reducing pollutants. Field trials are being conducted in collaboration with local municipalities.

## Market Dynamics

### Drivers

- Carbon Sequestration and Greenhouse Gas Reduction: Biochar locks carbon in soil, helping mitigate climate change by preventing atmospheric CO<sub>2</sub> emissions. Its use reduces ammonia volatilization and nitrous oxide emissions when compared to traditional soil management.
- Soil Health and Crop Productivity: Amending soils with biochar improves nutrient retention, water holding capacity, and overall soil structure, boosting plant growth and yields.
- Waste Valorization: Biochar production offers a productive outlet for forestry and agricultural waste, transforming low-value residues into a valuable soil and climate solution.
- Energy Co-products: The generation of green energy (biofuels and syngas) during biochar manufacturing lessens reliance on fossil fuels.

### Restraints

- Limited Demonstration Projects: Slow large-scale demonstration, limited awareness, and unclear yield benefits hinder faster adoption.
- Feedstock Contamination Risks: Biochar quality can be compromised by contaminants in the feedstock, necessitating quality control protocols.
- Regulatory Complexity: Lack of global standardization for biochar properties and application practices presents adoption barriers.

## Market Segmentation

Segments by feedstock include:

- Forestry Waste: Such as straw, nutshells, wood chips, bark, and sawdust—favored for its low moisture, homogeneity, and conversion efficiency.

- Agricultural Waste: Crop residue, husks, stalks.
- Animal Manure: Used in specific regional applications.

Forestry waste dominates due to its centralized supply, easy transport, and compatibility with leading production technologies like pyrolysis and gasification. Standardized, high-quality biochar can be more easily produced from homogeneous forestry residues, supporting scalability.

## Regional Insights

- North America accounts for the largest market share, underpinned by advanced R&D, heightened awareness of soil and carbon benefits, strong demand for clean energy byproducts, and government-supported waste-to-energy programs.
- Asia-Pacific is the fastest-growing region, driven by smallholder farmer adoption for soil enhancement and carbon capture. Countries such as Australia, China, and Japan are investing in biochar to boost agricultural resilience and environmental outcomes.
- Europe and other developed markets follow closely, with an emphasis on sustainable agriculture, circular economy, and emissions reduction.

## Competitive Landscape

The market is moderately consolidated; major players include:

- Agri-Tech Producers LLC
- Biochar Products
- Diacarbon Energy Inc.
- Cool Planet
- Others, with continual investment in innovation and commercialization of novel biochar products.

Leading companies are launching new products and expanding retail footprints. For example, Aries Clean Energy introduced a USDA-certified biobased retail biochar, capitalizing on patented gasification processes and rising sustainability demand.

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## Conclusion

Biochar is poised to play a pivotal role in addressing global soil degradation, waste management, and climate challenges, combining carbon sequestration, soil improvement, and green energy in a single solution. Continued innovation, quality assurance, and demonstration will be crucial to unlock the market's full potential, especially in emerging agricultural regions and sustainability-focused industries.

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