

# Advances and Perspectives on the Production of Biochar in Mexico

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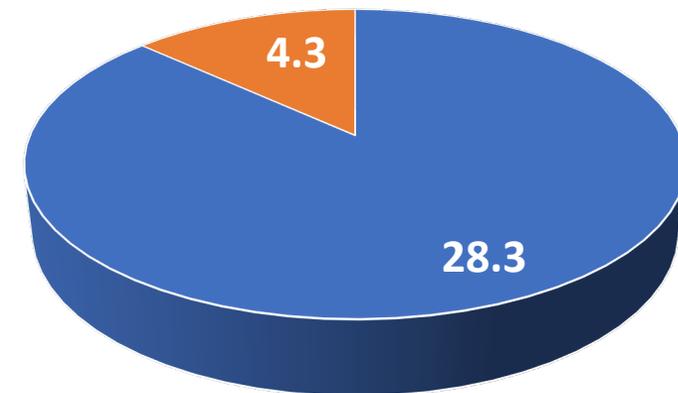
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For 2010, 21.6 Mt dry wood base were allocated to energy, 18.4 and 3.2 for firewood and biochar respectively, representing 28.3 and 4.3 Mm<sup>3</sup> of wood per year for each one (4.4 times more than the average timber production from 1998 to 2007).

Million of m<sup>3</sup> of wood to energy in Mexico



■ Firewood ■ Biochar

Masera, *et al.*, 2010 and SEMARNAT, 2008

*Currently it can be said that Mexico consumes more than 650 thousand tons of biochar each year, a product that is distributed for the preparation of food, mainly. The cities that consume heavily are Monterrey, Mexico City, Guadalajara, mainly.*



*Typical form to make charcoal in Mexico, all of states have makers of this product.*



*The market of biochar does not demand parameters about chemical quality, instead it is necessary big size, high weigh and a product without impurities.*

*To a lesser extent, it is important the moisture content, volatile matter, fixed carbon and ashes (proximate analysis).*



# Traditional methods.

- Earth kiln
- Earth pit
- Metallic kilns
- Brazilian kilns
- Orange middle kiln
- RaboQuente kiln





*500 tons per year. Ejido Viborillas, Huayacocotla,  
Veracruz*



*300 tons per year. Ejido El Peñpon, Tlaxco, Tlaxcala.*



*500 tons per year. Ejido La Selva, Huayacocotla, Veracruz.*



*100 tons per year. Ejido Mazapa, Calpulalpan, Tlaxcala.*



*100 tons per year. Ejido Los Sauces, Tepalcingo, Morelos.*



*250 tons per year. Ejido Olotola, Metztitlán, Hidalgo.*



*50 tons per year. Ejido Pedro Núñez, Manzanillo, Colima.*



*250 tons per year. Ejido Peñuelas, Pueblo Nuevo, Puebla.*



*80 tons per year. Ejido San Felipe, Nanacamilpa, Tlaxcala.*



*60 tons per year. Ejido San Nicolás de los Montes, Tamasopo, San Luís Potosí.*



*240 tons per year. Ejido San Nicolás de Tenantitlán, Hayacocotla, Veracruz.*



*80 tons per year. Ejido Pozo Hidalgo, Mazapil, Zacatecas.*



*360 tons per year. Ejido Zaculatipán, Zacualtipán, Hidalgo.*



*80 tons per year. Ejido Zoquiapam, Atatlauca, Oaxaca.*



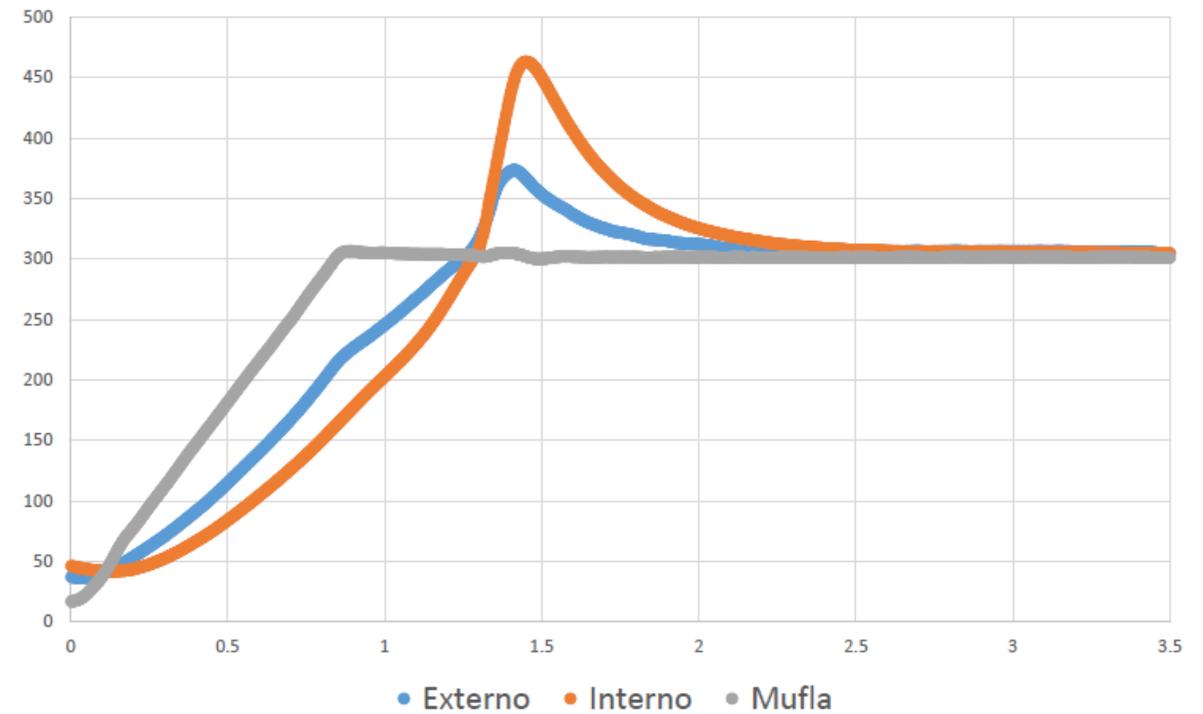
*10,000 tons per year. Private Company, Durango.*

# New technologies.

Oaxaca, south of the country.



Wood to biochar conversion temperatures (°C).



# RECORD OF TEMPERATURES IN BRAZILIAN KILN.

Superior Media Inferior



## CONCLUTIONS

The legal biochar market in Mexico only covers 10% of consumption.

With the volumes of authorized wood the current demand could be covered.

There is a strong business opportunity for Biochar as energy but also as a product of new applications.

## What is needed?

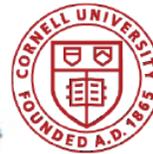
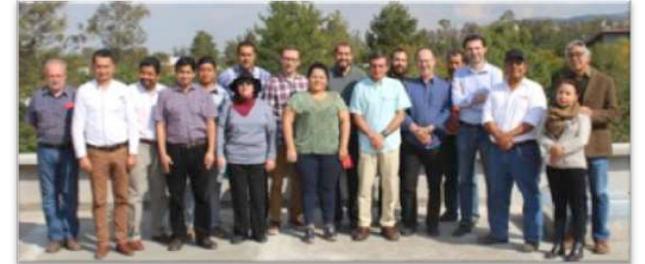
- Technology
- Take advantage of authorized volumes
- Improve quality of Biochar
- New applications
- Investors
- More government impulse
- Biochar business plan for Mexico and for foreign markets

In Mexico, a Cluster of solid biofuels is being formed, where the Biochar will be part of a standardization program. Quality characterizations are being made and a classification based on their results. The objective is to normalize qualities and facilitate its national and international market.



**BCS**

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Thank you very much for your attention.

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