



DOUG BOYKIN
Chairman,
NM Tree Farm Committee

1118 Hope Farms Road
Socorro, NM 87801
575-838-3027

Diboykin61@gmail.com
www.treefarmssystem.org/new-mexico

July 2021



TREE FARM BULLETIN

BIOCHAR...A WIN/WIN/WIN OPPORTUNITY?

by Carl Struck, Tree Farmer, Penasco, NM forestreefrog@gmail.com

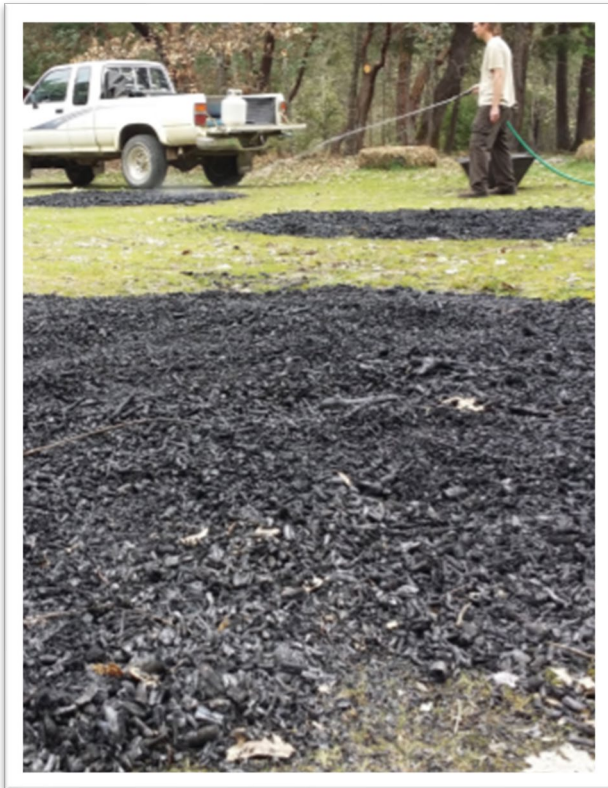
Most of us seasoned Tree Farmers have long settled into our preferred method for dealing with the slash left after we complete a thinning treatment. The lop and scatter method or the slash pile method both return the carbon stored above ground in our growing trees to the soil in the form of rotted wood which, after 10 years or so in the case of Ponderosa Pine, is no longer a fuel wood consideration for those of us worried about wildfire. A third method, chipping, is more time consuming, not to mention the initial expense of buying a chipper, but leaves us with a product that can be very useful in numerous ways...garden mulch, foot path construction, covering bare mineral soil to improve soil health, etc. Chipping however, like the previous two methods, leaves a potential fuel for wildfires until the chips are well integrated into the soil...also around 10 years for Ponderosa. The fourth method, pile burning, completely eliminates the risk of slash fuel wood contributing to wildfire, provided it can be done safely. However, this method, like chipping, also involves more work than the first two methods plus the added negatives of directly contributing carbon to the atmosphere (where we definitely **don't** need it), depriving our soil of organic matter or SOM (where we definitely **do** need it) and possibly leaving a very slow healing burn scar on the forest floor, in addition to producing excessive smoke. There is another method however, depending on how deeply you'd like to get into it, that varies from only a slight alteration of the pile burning method to expensive pyrolysis kilns, which minimizes or even eliminates many of the negatives associated with pile burning while providing a potentially useful product: biochar. Pyrolysis, for those of us who are new to biochar, is a way of converting biomass (in this case our slash) to biochar by starving the burning material of oxygen...to varying degrees.

Here I should divulge that up until fairly recently biochar was just something I knew was supposed to be good for the soil so it wasn't until I attended a 3-day conference on "Biochar: Opportunities in the Southwest" on Zoom put on by the University of Arizona Cooperative Extension that I learned how us tree farmers might get involved. If you are like me and are unfamiliar with biochar and its usefulness to farmers, ranchers, and gardeners perhaps a brief primer is in order. Biochar is essentially crumbled charcoal that has been "activated" with microorganisms beneficial to garden soil. This "activation" is usually accomplished by incorporating the charcoal into livestock manure or compost (other methods involve adding various substances to the charcoal) for a time before adding the "activated" biochar to

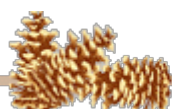
soil as an amendment. Of course, one could just add this crumbled charcoal to our soil and in time the microbes in the soil itself will “activate” it. The benefits of this biochar amendment range from increased water absorption and retention to higher yields from a stimulated soil biology. How this happens is beyond the scope of this article, but more information is available on the WEB...a good place to start is <https://biochar-us.org/soil-water-benefits-biochar> but search around...there is plenty of information out there!

The real question for us Tree Farmers is how do you make it? Like I said, it could be just a minor tweak to how we normally burn a pile. With only slight alterations to pile construction and top lighting instead of lighting at the bottom of the pile (this produces a “flame cap” that reduces smoke and helps the pile burn more evenly) plus squelching the coals at the proper time, you’re on your way to producing biochar! I know, squelching requires water which is something we don’t find easily in many of our forests...except in the winter...so a work-around for that might be to burn after the first good snowstorm and just shovel some snow on those coals at the proper time and deal with the charcoal in Spring. A more thorough and visual explanation of this method can be found at this link: <https://biochar-us.org/sites/default/files/learning/files/Smoke-Into-Biochar-flyerfinal.pdf>

The photos on the right and below are from this link, explaining the easiest method for producing biochar...look familiar? Except the results of a slight shift in slash pile burning is biochar not ash and less carbon (smoke) in the atmosphere!



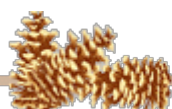
For those of us who would like to have a piece of equipment that would burn our slash piles safely and efficiently converting biomass to biochar, with much less release of carbon into



the atmosphere, there is the Wilson “Ring-of-Fire” kiln pictured below (for about \$1300) that can be transported by pick-up to a site in our forest, bolted together and fed by multiple slash piles in the vicinity. This is a double walled unit about 6 feet across and 4 feet tall that looks like it is not only well thought out and engineered but a fun outing for a group of biochar enthusiasts to “party” around...yahoo! One might be able to even apply for some grant money to help defray the initial purchase if one was cleverer than me at grant writing...just a thought! Find more information on this beauty at this link <https://wilsonbiochar.com/shop/ols/products/ring-of-fire-biochar-kiln>



Then there are folks like me who would like to experiment with biochar for their own gardens and only want to make a relatively small amount easily. Check out this entertaining YouTube video on how to convert a steel 55 gal. drum into a small batch biochar kiln...it's a hoot!
<https://www.youtube.com/watch?v=c5jvFbQYybg> With this method you could bring the wood to the kiln and squelch with your garden hose any time of year. Since I chip my slash and only want a relatively small amount of biochar to mix with chips on the floor of our hen house, which will eventually end up in our compost pile en-route to our gardens, this seemed like the perfect entry level biochar method. After contracting a friend, I thought might have an old steel drum lying around and strategically investing a couple of very esoteric beers, I brought our new/old steel drum home and,



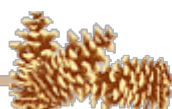
after 10 minutes well spent with my angle grinder, was the proud owner of a “down & dirty” biochar kiln looking a lot like this one! What could be easier?



Now there are WAY more expensive and complicated contraptions to make larger batches with way less carbon escaping into the air for those who are truly inspired and want to go into the business of selling biochar to the public...if I was 40 years younger, I might be tempted! These days, however, I tend to belong to the KISS school of thought...Keep-It-Simple-Stupid!

Of course, the most compelling reason to burn our slash piles to make biochar is just for the soil health of our own forest. An inspiring case for this was made during this Spring’s biochar conference, referred to earlier, by Dr. Debbie Page-Dumroese, a research soil scientist with the U.S. Forest Service to be found at the following link: <https://www.youtube.com/watch?v=TXEhsonPKdE&t=1179s> This link should be recommended to all Tree Farmers nation-wide in my opinion! Why are we still burning slash to ash when we could be burning slash to charcoal almost as easily and sequestering carbon in our soil instead of contributing to carbon in the atmosphere...one could ask?

Last, but definitely not least, we might consider letting our neighboring ranchers, farmers, and gardeners in on the fun and invite them to participate in our biochar production (formerly called pile burning!) and in return for their labor helping us construct, top-light and baby sit our burning slash piles, er, I mean biochar production piles...we could gift them the biochar, or at least part of it, and keep the carbon sequestered in our own watershed! True, our biochar hasn’t been activated yet (that’s their job!) and it hasn’t been produced in a high-tech way, but it also doesn’t cost \$350 for 2 cubic yards as per this link! <https://www.wakefieldbiochar.com/shop/super-sack-bulk-biochar/> Don’t know any folks who might be interested in helping you produce your/their future biochar? Just email Isabelle Jenniches at imjenniches@gmail.com She’s one of the co-founders of the NM Healthy Soil Working Group. Alternatively, you could call her at (505)231-8471. She might be able to connect you



with someone nearby who would be interested in some sort of trade. Maybe it's time for some of us seasoned Tree Farmers to learn a new trick? **Biochar...a win/win/win opportunity!**

1) NMTFC 2021 RAFFLE

NEW MEXICO TREE FARM COMMITTEE 2021 RAFFLE
FIRST PRIZE: Guided Private Ranch Cow Elk Hunt Landowner Tag
SECOND PRIZE: Large Custom-Made Metal Art Piece
THIRD PRIZE: \$100 Cabela's Gift Card

Drawing to be held at the August 2021 NMTFC Meeting
Cow Elk Landowner Tag donated by private ranch north of Las Vegas, NM (Unit 45)
Winner may hunt during any five legal hunt days between 09/01 and 12/31/2021
(Winner will be responsible for NMDGF license and tag and scheduling the hunt with the ranch)

\$10.00 Each

To purchase your 2021 Raffle ticket(s) send a letter and check (payable to NMTFC) to:
Doug Boykin
1118 Hope Farms Road
Socorro, NM 87801

Doug will in turn send you your numbered 2021 Raffle ticket stub(s).

2) COMMITTEE MEETING

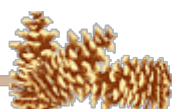
All Tree Farmers are invited and encouraged to take part in our 2nd New Mexico Tree Farm Committee Meeting of the year (three held annually). Please join us on Wednesday, August 11th, 2021. Join us and hear what other tree farmers have been up to and share your tree farm accomplishments with the group. We look forward to visiting with you. If you have any questions, please contact Arnie Friedt at arnie.friedt@state.nm.us

3) FARM EQUIPMENT FOR SALE

The Carey/Franklin Tree Farm is selling a Bearcat Chipper/Shredder, originally bought for forest management, and only used one season. The plow, discs, and shank subsoiler were a farming aspiration and maybe have been used once or twice until we moved them undercover. All the equipment is in excellent condition (see attached photos).

Bear Cat 5" Chipper/Shredder	SC5540 450 PTO	\$2,200.00
Land Pride Disc Harrows	DH2572-70-82	\$2,000.00
Cimarron Bottom 14" Plow (2 blades)	MPH 214 0818092953	\$1,000.00
Bison Heavy Duty Shank Subsoiler (3 blades)	SVH-1	\$ 500.00

Interested parties can reach Donna Carey at donna@acutronics.com or by phone at 575-587-2689 or cell 575-770-0735. Equipment lives in Ilano, NM, Taos County





← Bear Cat 5" Chipper/Shredder

Land Pride Disc Harrows →



← Cimarron Bottom 14" Plow
(2 blades)



← Bison Heavy Duty Shank Subsoiler
(3 blades)

