

## Nu-Science Lube test results comparing Bad Ass Bar Oil to Stihl Platinum Bar and Chain Oil

We conducted a comparison test on chain performance on June 15, 2019 using a 14" Homelite Chainsaw cutting dimensionally accurate 2 x 6 planks of aged white oak. We used an electric chainsaw to prevent any variation in cutting speed from throttle control on a gas-powered saw. We used White Oak because it is known for being tough wood and relatively rough on chainsaw chains, and because it was available in consistent size, age and relative hardness. The boards are known to be more than 40 years old.

The bar on the Homelite saw had already been used with Bad Ass Bar Oil, which substantially reduces friction, as determined in earlier tests. This gave an added advantage to the Stihl Platinum's performance over a pure comparison. However, this test was conducted strictly to study the chain's cutting performance and sharpness longevity. Mechanical chain life was not a consideration in this test since it has already been demonstrated in prior testing that BABO consistently and dramatically increases chain life.

We settled on Stihl Platinum Bar and Chain Oil for this comparison test because it is widely considered either the best or among the best, and everyone we have consulted agrees it is exceptionally good bar and chain oil.

We took planks of aged white oak, of the exact same size, used the same saw with a brand-new chain from the same manufacturer on each test, flushed and ran the saw between tests to be sure there was no residual oil from previous tests present. We maintained as close as possible to the exact down angle and with only the weight of the saw for the cutting, and we timed every single cut.

We started with BABO. The first cuts took 9 or 10 seconds per cut. We estimate roughly 3/4 of a second variance to be realistic. We cut up 2/3 of a board at a time, leaving the remaining piece to be cut on the test using Stihl Platinum bar oil. This was done to make sure we used the same wood for both tests to eliminate as much inconsistency that Mother Nature may have placed upon us between different planks. We were also convinced that if we used half boards instead of 2/3 boards that we would not get through all the same wood when we tested the Stihl Platinum. That proved to be the wise plan.

### Resulting performance data:

	<b>BABO</b>	<b>Stihl Platinum</b>
Starting cut time per board	10 seconds	19 seconds
Number of total cuts made	400	126
Number of chain tightening	2	1
Number of cuts to 1 <sup>st</sup> chain tightening	204	50
Number of cuts to 2 <sup>nd</sup> chain tightening	314	-
Average time per cut on last 5	20 seconds	31 seconds
After 126 cuts, average of last 5 cuts	15 seconds	31 seconds

Conclusion: Using Bad Ass Bar Oil on the same type of chain, same chainsaw, cutting the same material the same way, cut more than 3 times as much material, twice as fast, and the chain had vastly less stretch.

*\*See extension of test and further conclusions after notes below*

## **Notes:**

We intended to run the Stihl Platinum test until the last 5 cuts averaged 20 seconds just like the BABO, except the Stihl Platinum never yielded a single cut below 20 seconds after the first 8 cuts. We saved back 1/3 of each of the 3 boards we had cut on the BABO test so we could use the same boards with the Platinum. The Platinum lubricated chains were already averaging 31 seconds per cut before we ever got all the way through with second 1/3 of a board.

We were concerned that the BABO, which is thinner than petroleum bar oils, would have more oil used per amount of cutting than the Stihl Platinum. It stands to reason that a saw would pump the thicker material slower and therefore use less. We did not find that to be the case with our testing. We did not actually measure it, but the usage was clearly remarkably close to the same on both bar oils. The pumps in most chainsaws are just small progressive cavity positive displacement pumps, which will have minimum internal slippage, and in fact, the difference between viscosities does not seem to be enough to significantly affect the volume of bar oil used, if any at all. This may be worthy of further testing to confirm.

While we did not measure the bar temperature on this comparison as was done on earlier tests, the chain was too hot to touch when we tightened it up using Stihl Platinum. It was hot, but not too hot to touch either time we tightened the chain using BABO. The bar was not too hot to touch using either one, but it was clearly much warmer on the Stihl Platinum test.

This test compared performance of a petroleum-based product against Bad Ass Bar Oil as a fully safe and environmentally safe product where the comparable petroleum-based materials have environmental and health risks.

## **Extended Test:**

It was decided to flush out the remaining Stihl Platinum bar oil and see if the BABJO could produce any positive performance on the already dulled chain at the end of the test. We cut only the remaining pieces of the aged White Oak that were left over from the first test since there was still plenty left. The chain was a little loose, but we decided to just run it as it was. We made 10 cuts before the cutting time exceeded 20 seconds per cut. We made 46 cuts before the saw averaged the same 31 seconds per cut on the last 5 cuts that were exhibited using the Platinum.

## **Additional Conclusions:**

The saw made 36% more cuts to reach the same time per cut by just changing the bar oil from Stihl Platinum to Bad Ass Bar Oil. Adding BABO to a saw with an already dull chain immediately and substantially increased the cutting performance.

For further information on this test and others, contact Scott Aldrich of MLB Enterprises, Inc. at [nusciencelube@gmail.com](mailto:nusciencelube@gmail.com), 706-825-8548.