

# THE SPORTIER

## Trevor Bauer vs. MLB: Foreign Substances

Over this past offseason, one starting pitcher launched himself into the the spotlight through his highly-public free agency process. From YouTube videos to constant tweets, the baseball world was fixated on where Trevor Bauer would take his talents. In the end, he chose to return to his home state of California to play for the Los Angeles Dodgers instead of playing for the New York Mets. Even though the marketing campaign of Bauer and his brand made him significantly more visible in baseball, he had already created a name for himself by his on-field performance, but more notably, the things that he has said.

In the shortened 2020 MLB season, Bauer was fantastic for the Cincinnati Reds. Over 73.0 innings, Bauer carried a 1.73 ERA (2nd in MLB, behind Shane Bieber's 1.63) with 100 strikeouts (2nd in NL, behind Jacob deGrom's 104). Bauer was able to perform the most efficiently that he had in his career up to that point, and was awarded the NL Cy Young Award for his elite season. One would think that by how Bauer had pitched in the 2020 season, that he was already an established star in MLB. In reality, that was far from the truth, as he was actually more notable off the field than on it up until the 2020 season. While he was also excellent in 2018 with the Cleveland Indians, boasting a 2.21 ERA and being selected to the All-Star Game, Bauer had otherwise never held an ERA below 4.00 in any of his other 7 seasons prior. And now, it may be becoming clear how Bauer discovered the greatness in his craft in such a short time.

In 2018, Bauer created a stir through some of the tweets he had released. Replying to a now-deleted tweet by pitching trainer Kyle Boddy that referenced how Houston Astros pitchers (Gerrit Cole, Justin Verlander, Charlie Morton) all saw spikes in their spin rate when they began pitching for the Astros, Bauer opined why there was such a change occurring. Before diving deeper, it is important to know what spin rate is and how it can be used to a pitcher's advantage. Spin rate, measured in revolutions per minute (RPM), is the number of times that the ball spins per minute. A high spin rate for a pitcher is good, as it adds more movement to the baseball. The most notable of these changes are seen when throwing a fastball. When a pitcher with a high spin rate deals a fastball to the batter, it can seem like the ball is rising because it does not drop as much as it approaches the batter, which makes it very difficult for the hitter to track. While velocity does not necessarily increase as spin rate goes up, a fastball with a higher spin rate compared to another with the same velocity is nonetheless harder to hit, as the baseball seems to continue to move.

Though the possibility of chewing gum and other routes of doctoring baseballs were a possibility thrown out in the Twitter thread related to the Astros pitchers' success, Bauer seemed to know information that he would not share at the time, but he believed that the organization was distributing a foreign substance to its pitchers. Bauer trolled, "If only there was just a really quick way to increase spin rate. Like what if you could trade for a player knowing that you could bump his spin rate a couple hundred rpm overnight...If only that existed..." From Bauer's previous tweets, it can be assumed that he believed the substance in question to be pine tar. In April of 2018, Bauer tweeted out some numerical data showing how hitters fare against different spin rates. The numbers clearly showed that players that were pitted against pitchers with higher spin rates had significantly lower batting averages against compared to when they faced pitchers with lower spin rates. For example, pitchers with 2,600+ RPM on their fastball had .213 opponents' batting average (from when Bauer's calculations were made), compared to pitchers with a spin rate below 1,999 RPM on their fastball, who had a .309 opponents' batting average. Bauer, saying that he had tested the pine tar-spin rate theory on his own outside of games previously, tweeted that he knew that he could increase his fastball by 400 RPM. Bauer appeared to say that people who use the substance do not have morals, as he thought that "pine tar is more of a competitive advantage in a given game than steroids are." What Bauer proceeded to do later in his career, up to current day, is when these statements become relevant again.

Bauer's original 2018 tweet hinting about Astros pitchers using illegal substances specifically referenced three pitchers, all three of whom I mentioned previously. One of those pitchers, Gerrit Cole, a former UCLA teammate of Bauer's who now pitches for the New York Yankees, is widely considered to be one of the best pitchers in the game. Cole began his career with the Pittsburgh Pirates, where he was a decent pitcher who had one great season in 2015. Other than that season, Cole was average at best with the Pirates. In 2018, Cole's first year with the Astros, it was clear that things had changed for him. He dropped his ERA by 1.38 points compared to his 2017 campaign with the Pirates (4.26 to 2.88) and he increased his whiff percentage on his fastball by 10% over the same span (19.6% to 29.6%). It is also important to note that Cole's RPM on his fastball increased by 215 in 2018 from 2017, and it is evident that the increased spin rate made batters much more lost at the plate because of the increased whiff rate with that pitch. Though it was a +215 change in RPM for Cole, which may not seem as significant compared to Bauer's supposed 400 RPM increase that he claimed to be able to reach with pine tar, it is certainly unprecedented for a player to see a spike of any kind like Cole did. From 2015 to 2016, Cole increased his spin rate on his fastball by just 30, and in 2016 to 2017, he actually dropped his spin rate by 21. Looking at both of these previous seasons, it is clear that a +215 change in RPM is certainly unusual for a pitcher like Cole, which may be attributed to Trevor Bauer's original theory of pine tar usage.

**Trevor Bauer 4-Seam Fastball RPM, 2016-2020**

Year	4-Seam Fastball RPM	Change in RPM
2016	2245	-
2017	2277	+32
2018	2322	+45
2019	2410	+88
2020	2779	+369

Trevor Bauer, in 2018, said that he would like for Major League Baseball to enforce its pine tar ban in baseball, since it is technically an illegal substance, even though it may be widely used in pitching. Seeing as though MLB was not taking any action, Bauer went against his beliefs to prove a point, as it is apparent that he began implementing the use of a substance in his 2020 season. In the chart above, one can see that Bauer had a massive spike in the spin rate of his fastball, even larger than that of Gerrit Cole in Houston. Bauer's +369 spike in RPM also carried with it a fantastic season, where he saw an 8% decrease in the percent of batted balls that hit an opposing batter's sweet spot from 2019 to 2020 (33.9% to 25.9%). This can all be led back to the original point that spin rate makes it more difficult for batters to track the ball to their bat. Further, as mentioned before, Bauer won the Cy Young Award in 2020 with a fantastic season.

After signing with the Dodgers this past offseason to a hefty contract, Bauer has seemingly continued to use some sort of sticky substance to further prove his point. On April 7th, in Bauer's start against the Oakland A's, MLB finally took their first steps against Bauer personally. Prior to the season's start, the league claimed that they would be cracking down more heavily on the use of illegal substances. Bauer, who previously said that he believes that around 70% of the league uses pine tar, had some of the baseballs that he had thrown that day taken out of the game and sent in for further testing. It was noted that the baseballs were sticky, which is an obvious sign of some substance. While Bauer was singled out by the media for his apparent use of an illegal substance, he headed to Twitter to mention that all pitchers were having their baseballs taken out of games for testing. This proves that the MLB is truly cracking down, which Bauer has previously encouraged.

Even though Bauer seems to have simply been tempting MLB to take action against him and other pitchers, which would align with his fiery and outspoken attitude, his use of substances may have crossed into further territory. Bauer is an analytically-driven player who is known for being very cerebral, and he has previously stated that his personal team has tested the relationship between the use of sticky substances and spin rate. Trevor Bauer's company, Momentum, currently sells t-shirts that say "Legalize Pine Tar." While this yet again may be a marketing plan, Bauer's clear sticky substance that was found on his baseballs may be a more highly-developed version of a substance.

It is clear that Bauer has been adversarial to MLB on many issues, most notably this one surrounding pine tar usage. It clearly helps pitchers, and Bauer believes that it creates an unfair playing ground for hitters who have to go up against these pitchers using what are supposedly illegal substances. It is now MLB's turn to decide whether or not they will really take initiative and begin their crackdown on pitchers using substances, or if they will simply turn a blind eye and allow the current flow of the game to occur, going against the rules that have been long-standing in the game of baseball.



**April 6, 2021 - Trevor Bauer pitching against the A's, the same game in which his baseballs were removed from the game**

Sources:

[CBS Sports](#), [Twitter](#) (Trevor Bauer), [MLB](#), [Twitter](#) (Trevor Bauer), [Baseball Savant](#), [Baseball Savant](#), [MLB](#), [MLB](#), [MLB](#), [Sporting News](#)