Edwin Diaz Pitcher Analysis

2025-04-13

Intro

This project will be an analysis into Edwin Diaz across 2022, 2024, and 2025 seasons (so far), looking into his decline in effectiveness and his changing approach. His 2022 season was historical, and while his metrics from 2024 indicate a strong campaign, his 2025 season has gotten off to a troubling start (NOTE: this is being made with data as of 4/16/2025, 6.2 IP / 7 G into the season for Diaz).

Data and Plots

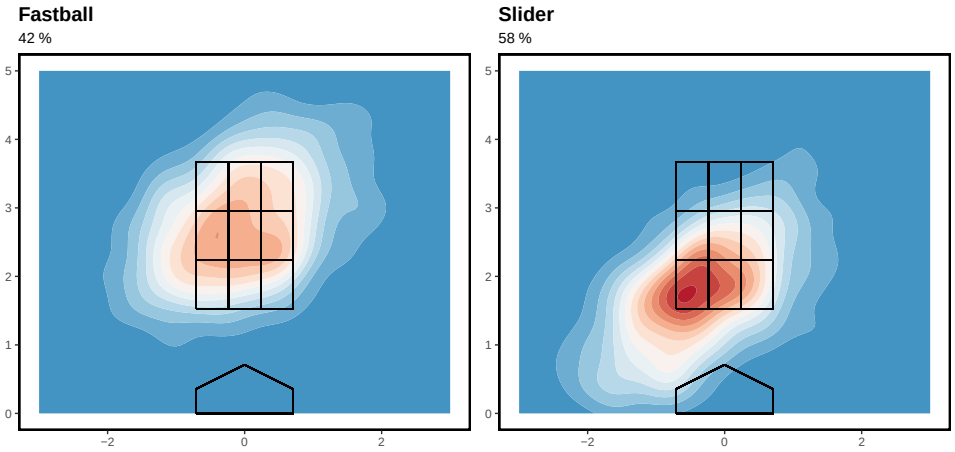
Before discussing, it's important to look into some relevant ready-available metrics to evaluate Diaz's 2022, 2024 and 2025 seasons in comparison and to understand why there are concerns.

- Over the past 3 seasons, Diaz's velocity has declined. Average velocities by year:
  - 2022 - Fastball = 99.1 MPH, Slider = 90.8 MPH
  - 2024 - Fastball = 97.5 MPH, Slider = 89.6 MPH
  - 2025 - Fastball = 96.4 MPH, Slider = 88.3 MPH
- Over the past 3 seasons, Diaz's FirstPitchStrike% has declined. FirstPitchStrike% by year:
  - 2022 - 71.4%
  - 2024 - 63.0%
  - 2025 - 45.2%
- Over the past 3 seasons, Diaz's HardHit% has increased. Defining HardHit% as percent of balls in play hit 95MPH or more, by year:
  - 2022 - 38.1%
  - 2024 - 30.3%
  - 2025 - 53.3%
- Over the past 3 seasons (with the implementation of the Pitch Clock in 2023, the season Diaz missed with injury), Diaz has had to speed up his time between pitches. With Average Pitch Tempo defined as average time between pitches, and Fast% being the percentage of pitches with 15 seconds or less between pitches (data below displays statistics for pitches with no runners on base):
  - 2022 - Average Pitch Tempo = 17.4 seconds, Fast% = 24.4%
  - 2024 - Average Pitch Tempo = 13.8 seconds, Fast% = 71.6%
  - 2025 - Average Pitch Tempo = 13.5 seconds, Fast% = 63.6%

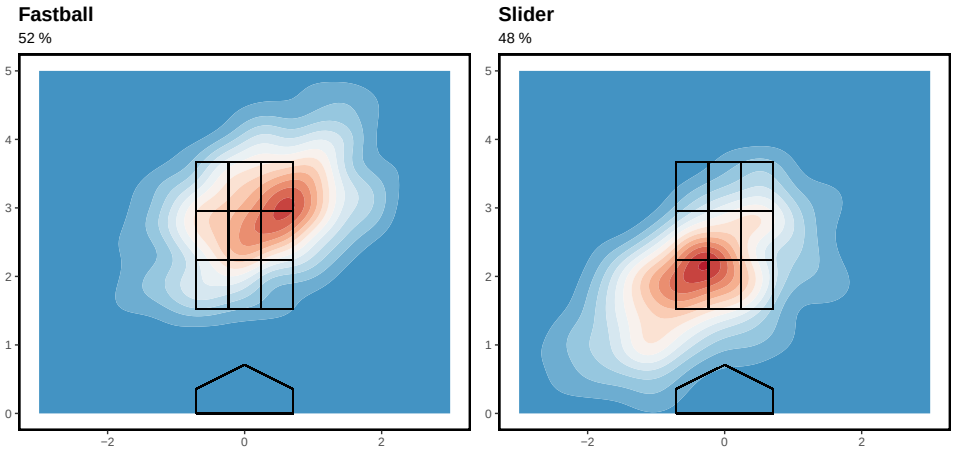
These figures are significant and will be paired with the further data and visualizations through analysis below.

First, I want to visualize Diaz's different pitches. We can see that he only has thrown a fastball and slider over these three years (can see this by doing `unique(diaz$pitch_type)`).

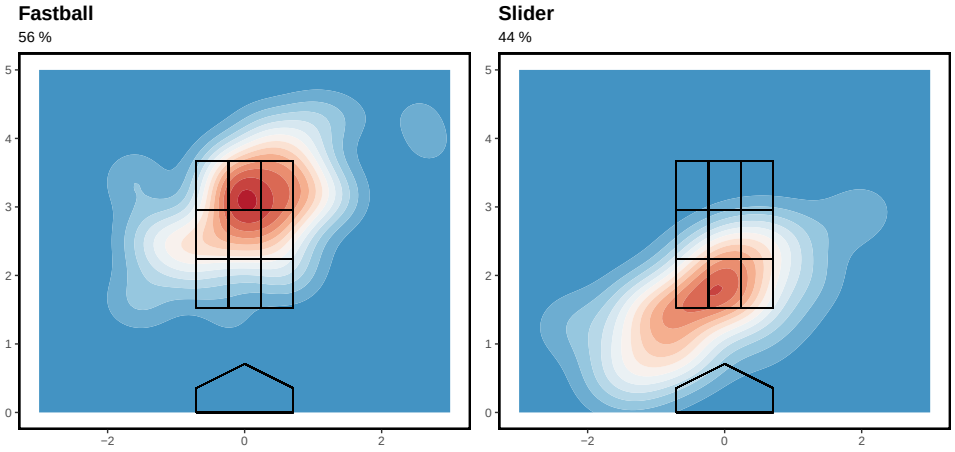
Diaz 2022 (Contour)



Diaz 2024 (Contour)

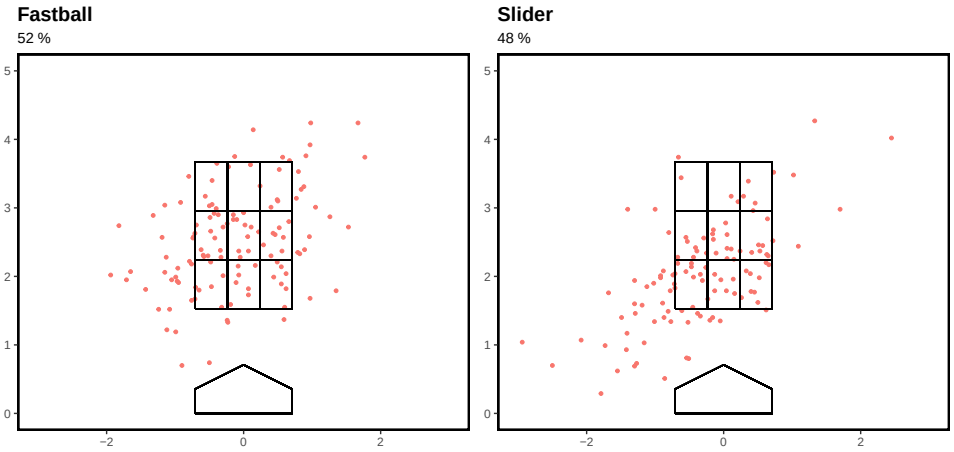


Diaz 2025 (Contour)

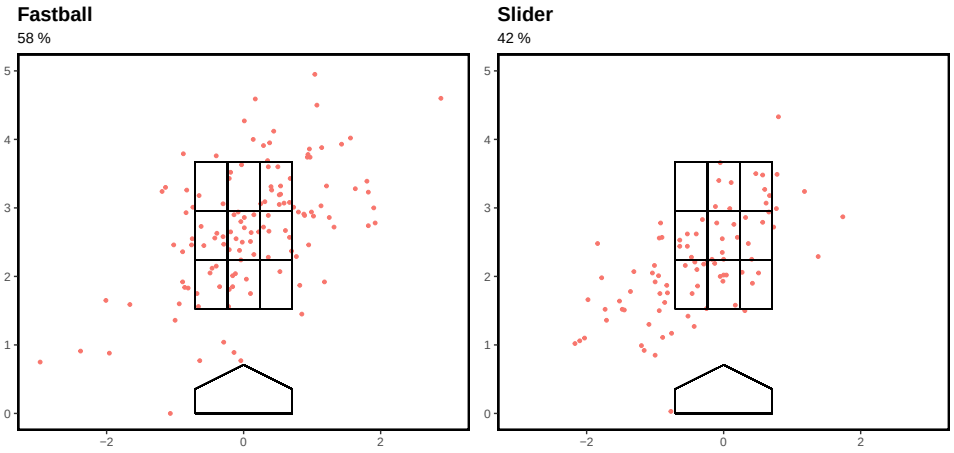


Diaz is less reliant on his slider compared to 2022, and his fastball has begun to creep up higher in the zone. With the fastball climbing up in the zone, instead of tunneling effectively in the left half of the zone with fastball and slider, he seems to just be trying to blow fastballs by hitters up and away. This likely doesn't work as well with the decrease in velocity as mentioned before. I also think that this shift is related to changes in control, relating back to the decrease FirstPitchStrike% as mentioned before.

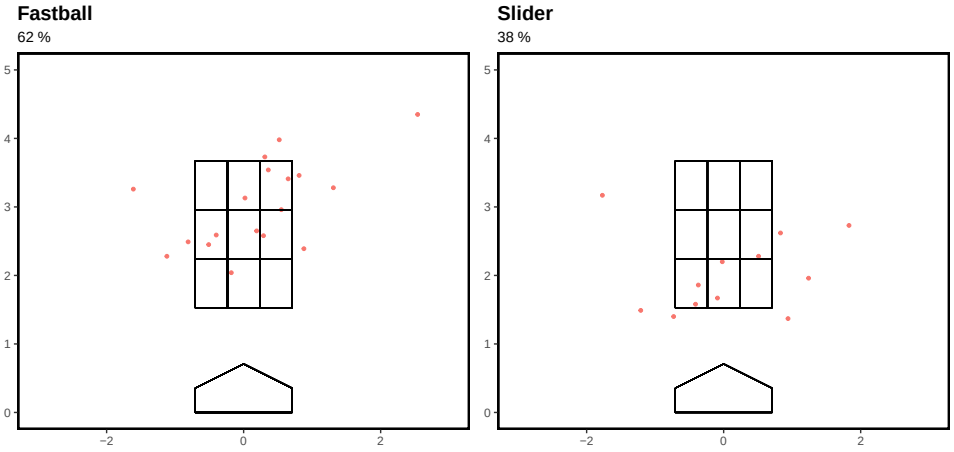
Diaz 2022, 0−0



Diaz 2024, 0−0



Diaz 2025, 0−0

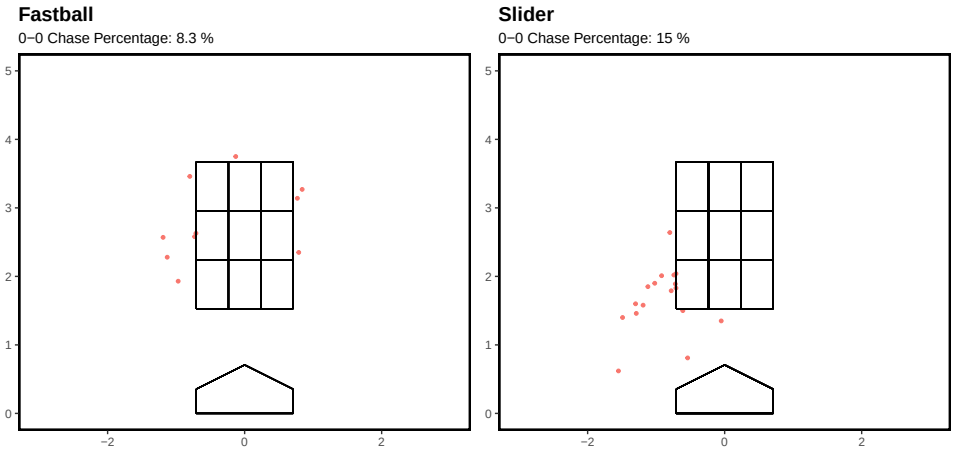


The trend of increasing fastballs shows up here still, and his fastball is moving upwards in these 0-0 counts. 2025 is tough to judge, but after 2022 his fastball seemed to be trending up in the zone further and his slider in 2025 is hitting the wrong side of the plate (inside on RHH).

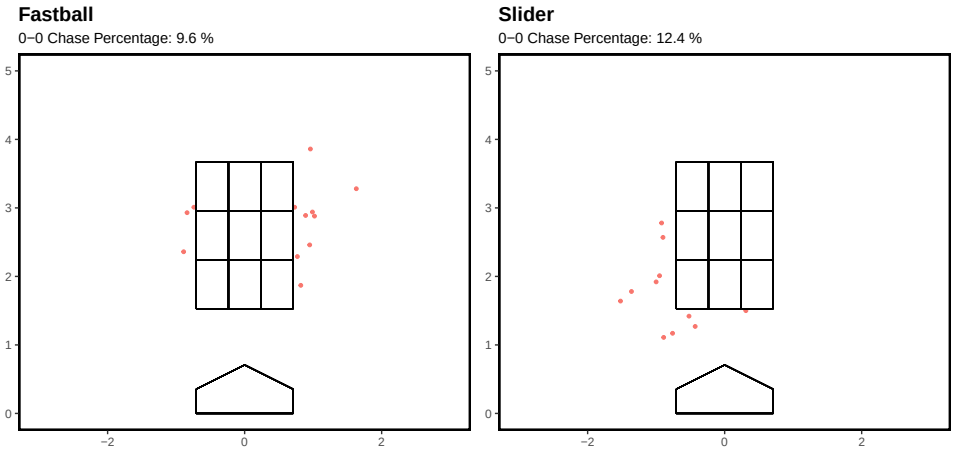
Table 1: Diaz Pitch Results by Count Type

game_year	count_type	pitch_type	total	chases	whiffs	chase_perc	whiff_perc
2022	0-0	FF	121	10	15	8.3	12.4
2022	0-0	SL	113	17	21	15.0	18.6
2022	ahead	FF	130	24	31	18.5	23.8
2022	ahead	SL	230	83	72	36.1	31.3
2022	behind	FF	97	6	12	6.2	12.4
2022	behind	SL	104	23	25	22.1	24.0
2022	even	FF	41	8	6	19.5	14.6
2022	even	SL	92	39	36	42.4	39.1
2024	0-0	FF	125	12	10	9.6	8.0
2024	0-0	SL	89	11	16	12.4	18.0
2024	ahead	FF	143	25	27	17.5	18.9
2024	ahead	SL	147	43	26	29.3	17.7
2024	behind	FF	127	13	18	10.2	14.2
2024	behind	SL	110	23	27	20.9	24.5
2024	even	FF	80	12	11	15.0	13.8
2024	even	SL	91	25	20	27.5	22.0
2025	0-0	FF	20	0	0	0.0	0.0
2025	0-0	SL	12	1	1	8.3	8.3
2025	ahead	FF	25	3	4	12.0	16.0
2025	ahead	SL	12	2	1	16.7	8.3
2025	behind	FF	22	1	2	4.5	9.1
2025	behind	SL	28	6	8	21.4	28.6
2025	even	FF	8	1	2	12.5	25.0
2025	even	SL	8	3	3	37.5	37.5

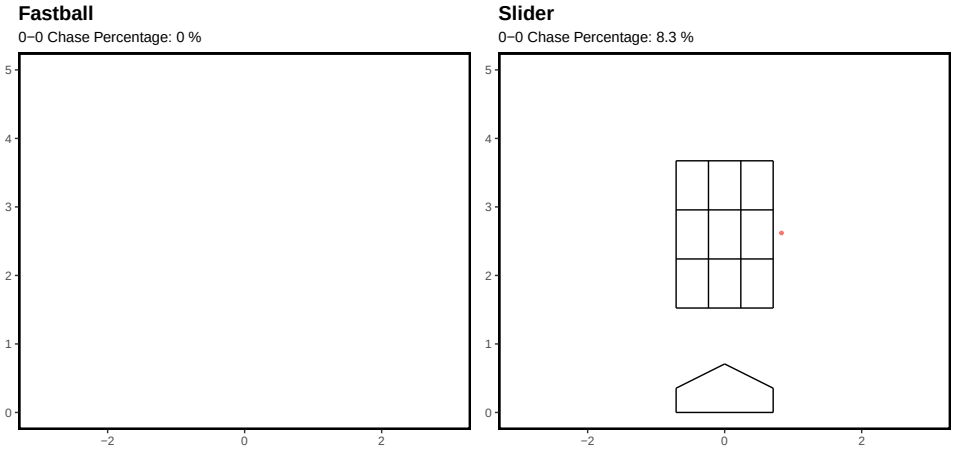
Diaz 2022, 0–0 Chases



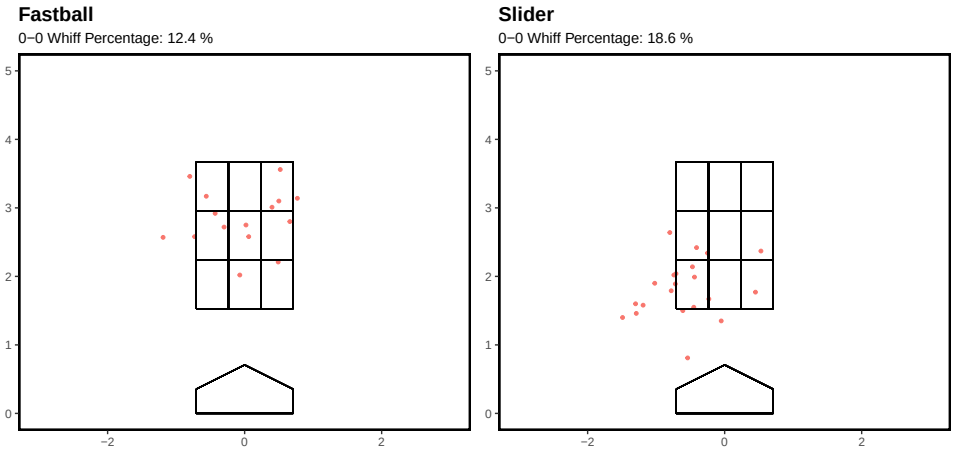
Diaz 2024, 0–0 Chases



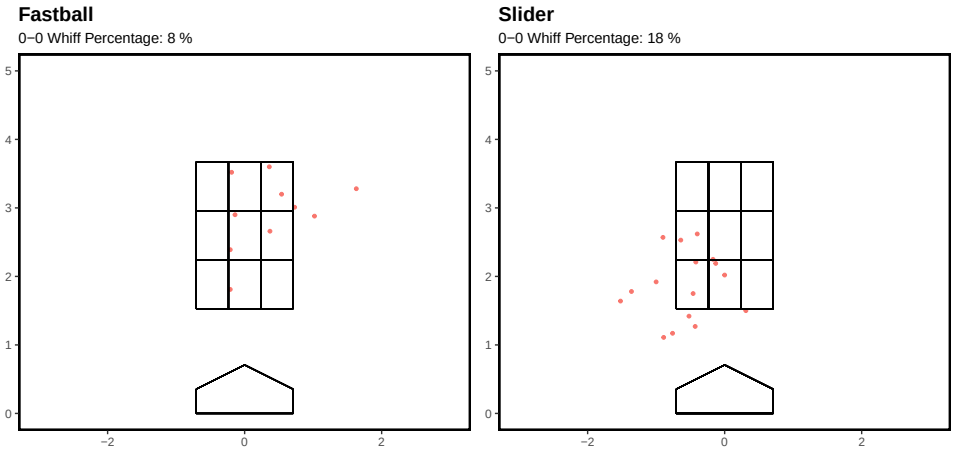
Diaz 2025, 0–0 Chases



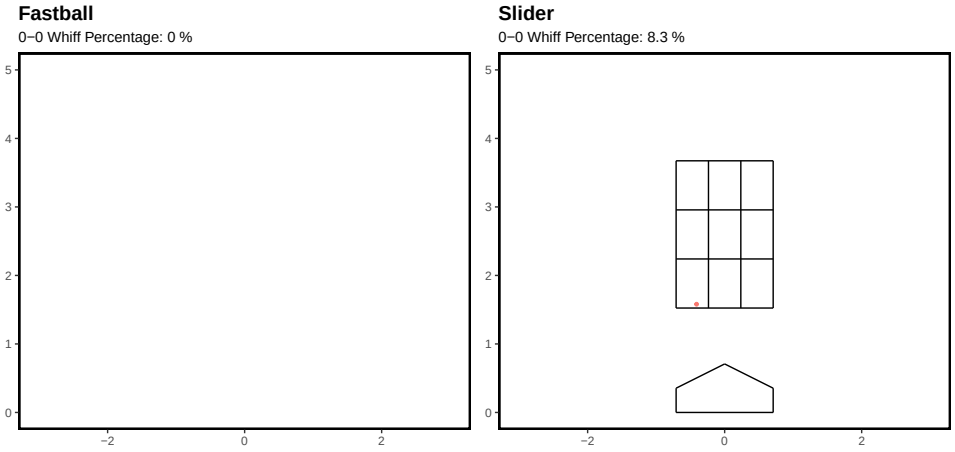
Diaz 2022, 0−0 Whiffs



Diaz 2024, 0−0 Whiffs



Diaz 2025, 0−0 Whiffs



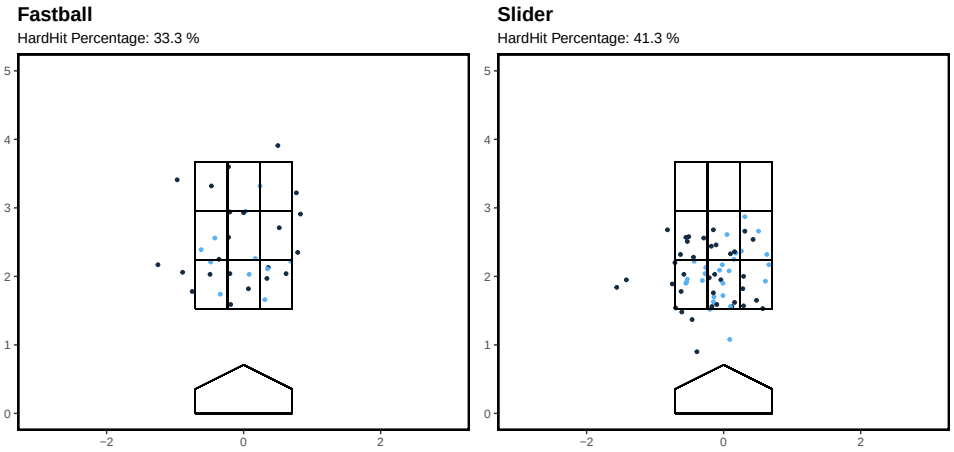
{Comment on the two plots and DT}.

One more area to check out is HardHit%. The improvement in 2024 and middling performance in 2022 compared with the rough start in 2025 begs the question of where this hard contact is coming from.

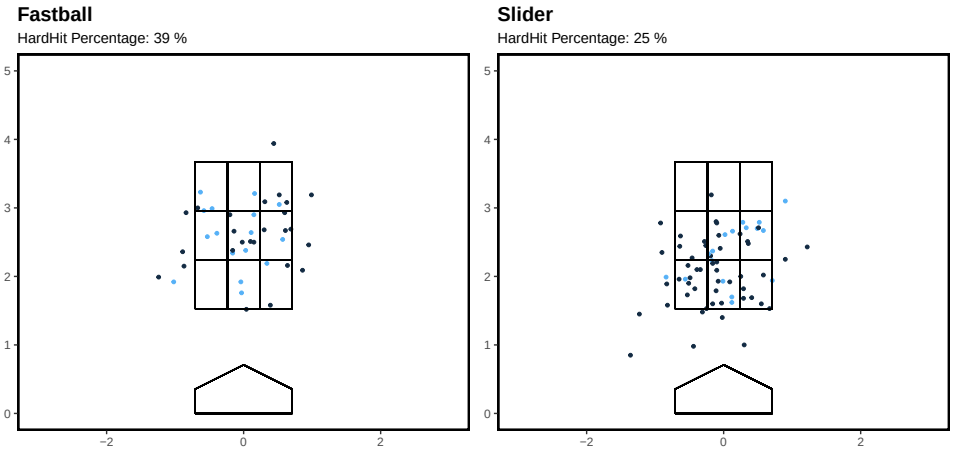
Table 2: Diaz Hard Hit by Count Type

game_year	count_type	pitch_type	total	hardhit	hardhit_perc
2022	0-0	FF	11	4	36.4
2022	0-0	SL	13	6	46.2
2022	ahead	FF	12	5	41.7
2022	ahead	SL	26	10	38.5
2022	behind	FF	6	0	0.0
2022	behind	SL	12	6	50.0
2022	even	FF	4	2	50.0
2022	even	SL	12	4	33.3
2024	0-0	FF	12	4	33.3
2024	0-0	SL	7	1	14.3
2024	ahead	FF	12	3	25.0
2024	ahead	SL	27	10	37.0
2024	behind	FF	10	6	60.0
2024	behind	SL	20	4	20.0
2024	even	FF	7	3	42.9
2024	even	SL	14	2	14.3
2025	0-0	FF	1	1	100.0
2025	0-0	SL	1	0	0.0
2025	ahead	FF	2	0	0.0
2025	ahead	SL	2	0	0.0
2025	behind	FF	1	1	100.0
2025	behind	SL	4	3	75.0
2025	even	FF	3	3	100.0
2025	even	SL	1	0	0.0

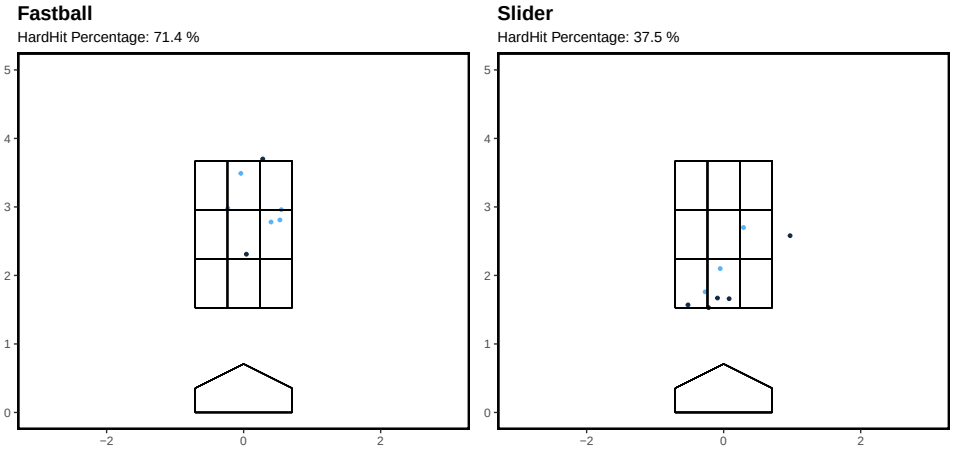
Diaz 2022, HardHit



Diaz 2024, HardHit



Diaz 2025, HardHit



{explain plot and DT}.

Summary/Recommendations

- Bring the fastball down and tunnel with the slider
- Practice pacing, especially early in counts
- Get the slider back to the left side of the plate - this is where chases come from