SELF-PROPELLED SPRAYER ANALYSIS

Spring 2024

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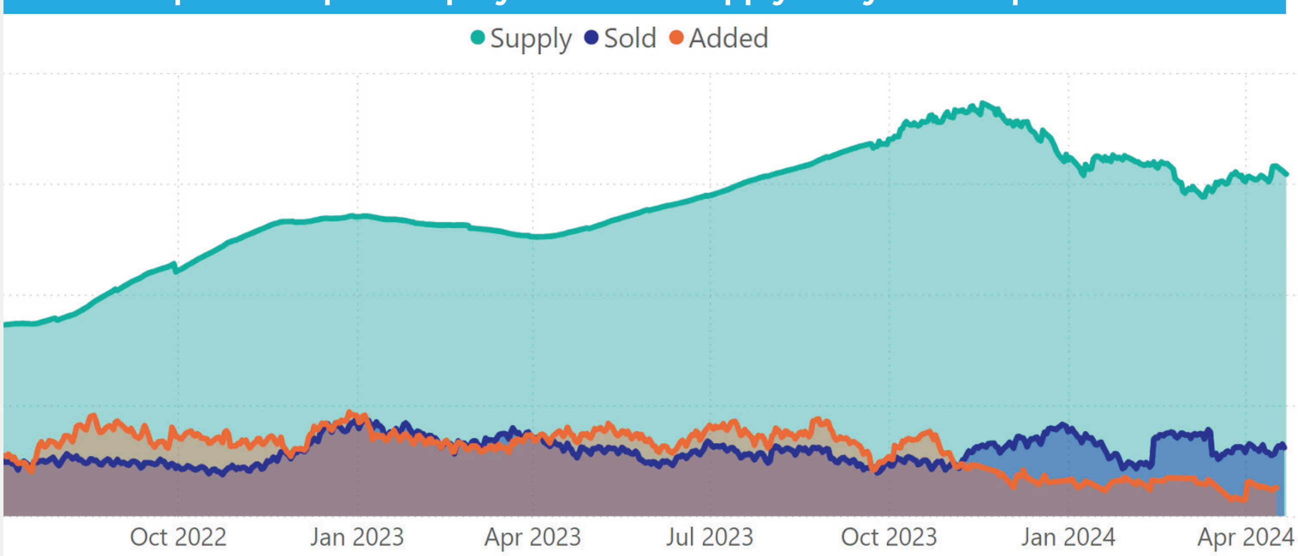
Amid the dynamic ebb and flow of agricultural equipment markets, this in-depth Tractor Zoom analysis unveils intriguing insights into the current state of dealership supply and auction results for self-propelled sprayers. With dealership supply witnessing a notable 20% annual increase, the industry has seen a surge in quality inventory showing up at auction, which was accompanied briefly by strong end-of-year demand amidst strategic inventory management efforts. However, despite the overall increase in supply, variations persist based on regionality and manufacturer, shaping the market landscape in distinct ways.

Plunging deeper into the data reveals nuanced shifts in supply and pricing levels across different hour categories, providing coverage on evolving market trends and implications for dealerships. Our intent is that this analysis provides valuable insights on dealership supply trends, auction dynamics, depreciation rates, and a direction on future trends.

Dealership Self-Propelled Sprayer Relative Supply - July 2023 - April 2024



Overall dealership supply is up 20% over this time period last year. Supply peaked on lots right after harvest and has been on the steady decline since thanks to better than expected end-of-year demand and dealerships' focused attempts at moving this inventory through multiple channels. While average supply is down, there still is a fair amount of supply differences based on regionality and manufacturer.

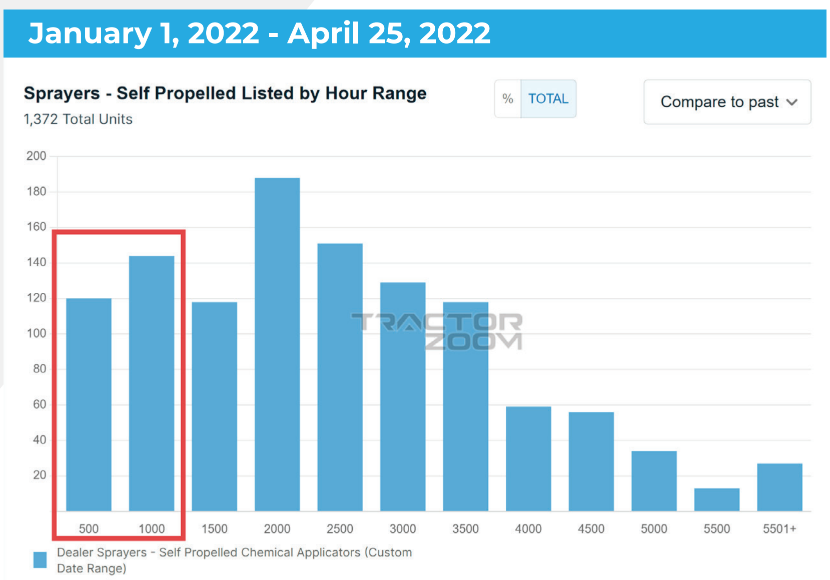
One of those channels has been dealership auctions. The amount of self propelled sprayers sold at dealership auctions in December of 2023 was more than triple that compared to each of the two previous end-of-year sales seasons. Granted, those years were times of scarcity, but the increase is significant and worth noting.

Growing Supply on Dealers' Lots

While overall supply on dealership lots is only up 20% over last year, that increase is not spread evenly amongst all hours of sprayers. Below I investigate changing supply in different sections of the washout cycle. Through Tractor Zoom Pro's Market Trends, I was able to pull the following graphs. Each of these graphs is for the self-propelled sprayer market supply on dealership lots between January 1st to April 25th of that year.

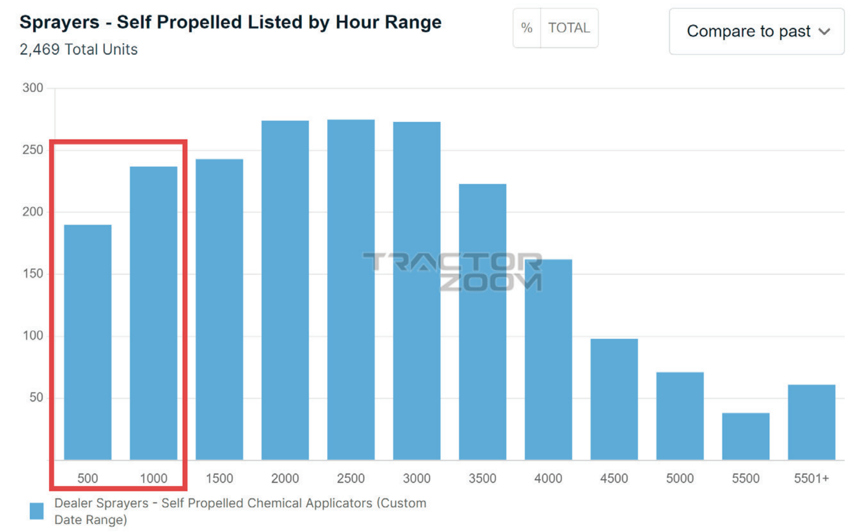
2022

19.2% of the total sprayers on the market in the spring of 2022 were under 1,000 hours. In this view, you can also see the jagged nature of this market due to the supply chain disrupting farm machinery at this time.



The sprayer market in the Spring of 2023 is shown below. As supply trickled back onto the lots, this smoothed out the washout curve from one hour category to the next. Yet there still was a slight shortage of low-hour sprayers at this time due to pent up demand.

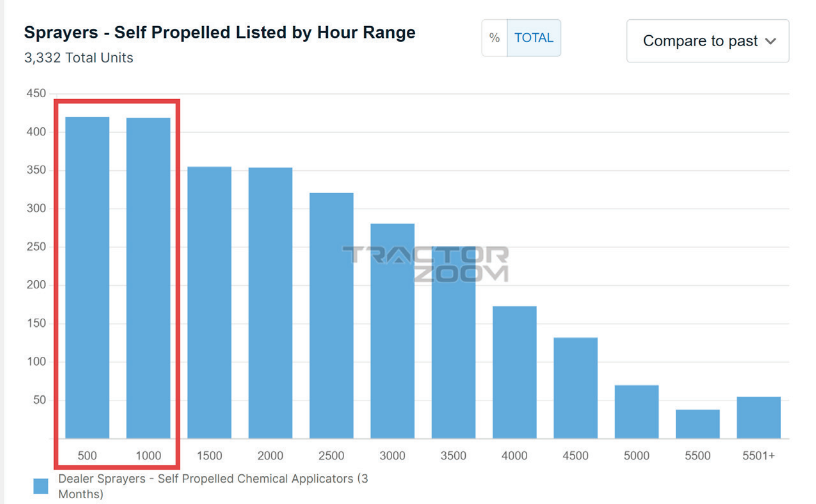
January 1, 2023 - April 25, 2023



In the spring of 2023, the total percentage of sprayers on the market with less than 1,000 hours was 17.3%. The stronger return of supply began soon after this snapshot as manufacturers ramped up production and waning futures markets pumped the brakes on some farmers' purchasing intentions.

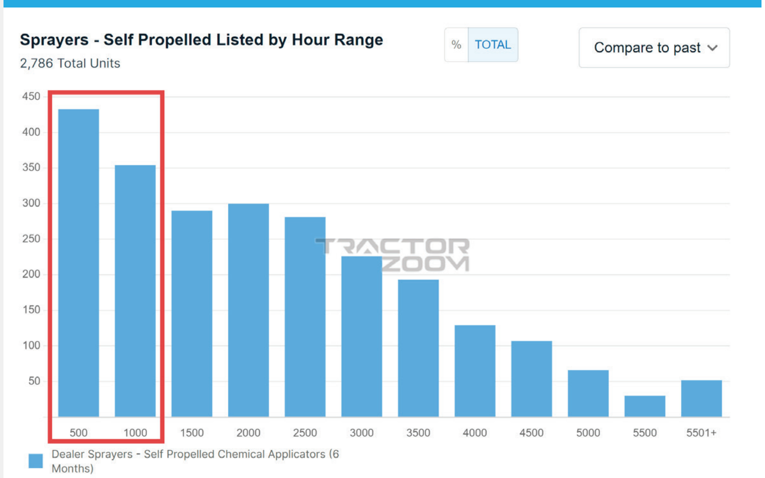
Those macro economic factors have created our current supply environment of 2024.

January 1, 2024 - April 25, 2024



Here the amount of sprayers below 1,000 hours in the spring of 2024 represents 25% of the entire market. This is not only a significant increase in the number of sprayers, but at the current level of interest rates combined with a high-value seasonal piece of equipment, this predicament could be a significant carrying cost risk to many dealerships.

October 1, 2023 - December 31, 2023



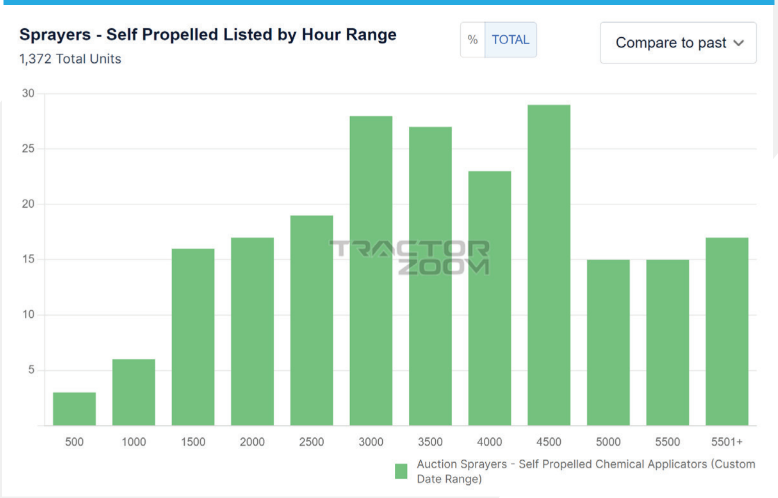
A common, and justified, remedy of this situation is to liquidate inventory via auction. While this is a viable option, it is worth re-mentioning from earlier in this analysis that this last December saw a 3x increase in end-of-year dealer auction supply of sprayers over last year. That is one of the reasons we do not currently have 28.2% of sprayer volume less than 1,000 hours like we did in Q4 of 2023.

Low-Hour Sprayers Abound at Auction

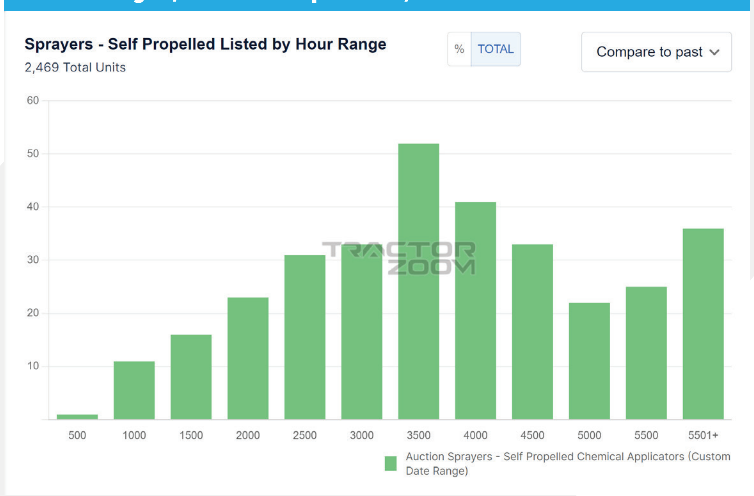
Knowing that auctions are one of the options available to reduce sprayer inventory, below I've supplied the previous three years' breakdown of sprayer volume by hour categories recorded at auction in Tractor Zoom's database. While the amount of auctioneers partnering with Tractor Zoom is always increasing, the rate of increase does not come close to matching the increase in supply we've recorded in 2024.

In 2022, there were only nine sprayer sales at auction that had less than 1,000 hours.

January 1, 2023 - April 25, 2023



January 1, 2023 - April 25, 2022

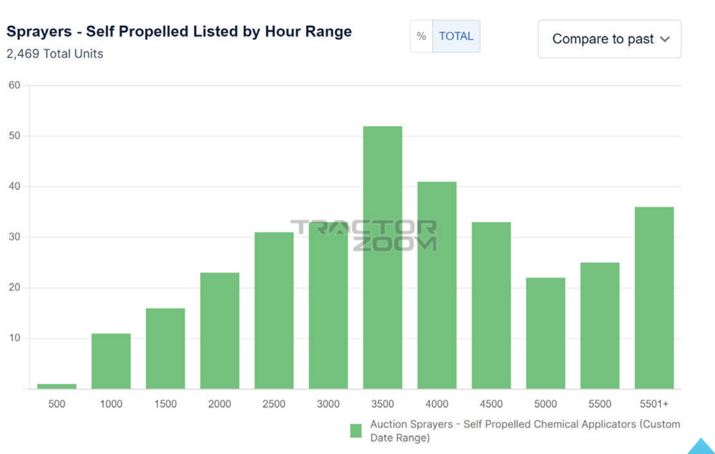


In 2023, that low-hour sprayer auction sale volume increased slightly to 12. This minimal rise could potentially be attributed to the increase in auctioneers.

So far in 2024, the number of sprayers with less than 1,000 hours at auction burgeoned to 31!

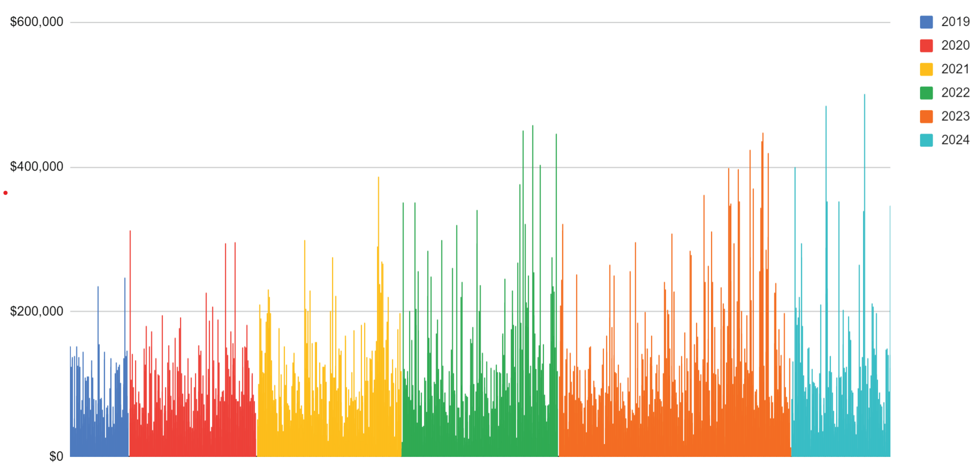
An observation from these last three auction graphs is to note where the peak of auction supply is. Ideally dealerships would want that auction peak to be as far to the right as possible so the washout cycle can take place via dealer and farmer transactions. This peak of sprayers via hours at auction has progressively moved left from the 4,500 range in 2022, to 3,500 in 2023 to the 2,500 hour category in 2024.

January 1, 2024 - April 25, 2024



Spring is typically not a time when we see these late-model, low hour machines at auction. Those sales are typically reserved for the end-of-year timeframe when they tend to bring the highest value. In fact, not since the transition from 2019 into 2020 have we seen a spring sale value beat out a previous end-of-year auction value. You can witness this in the following graph, with all sprayer auction sales as individual lines, chronologically lined up from left to right, starting in 2019. ***Already*** 2024 has a peak higher than any point from last year.

Individual Self-Propelled Sprayer Auction Sales >$10,000 from 2019 - Present



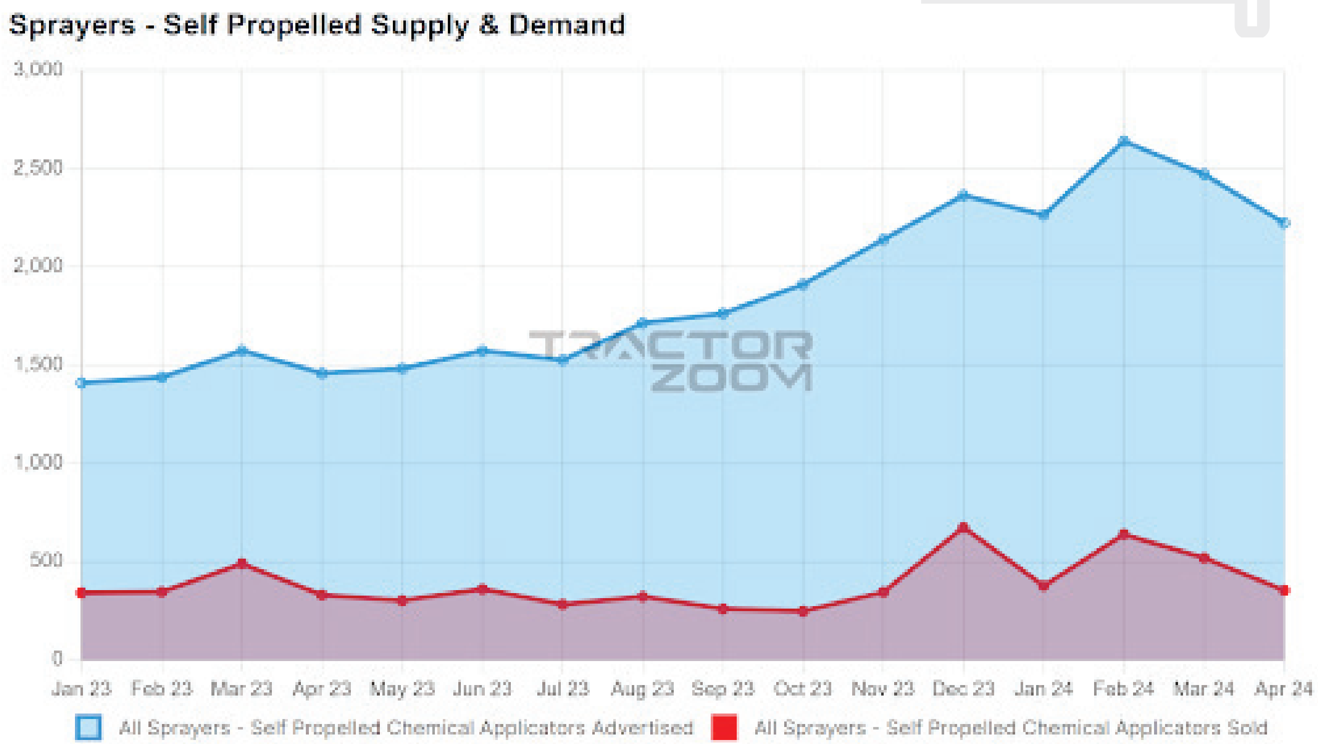
Admittedly, this graph looks more like abstract wall art. Yet, like abstract art, if you stare at it long enough, you will start to see patterns and a story of how the last five years have played out.

So, what is the takeaway from the auction data? While the shift in low-hour sprayers at auction will satisfy some of the available demand and apply even more downward pressure on values, the more telling tale may be the indication of softening demand at those low-hour ranges, leading to building supply and subsequent auction activity. I will investigate the turns metrics and values up and down the hour ranges next to see if that is the case.

Slower Turns at Dealerships

In Tractor Zoom Pro's Market Trends, there is a supply and demand graph that can be utilized to determine the trending months of supply by category, manufacturer, and geography. This is my most frequently used chart within all of Tractor Zoom. Below is a snapshot of the Self-Propelled Sprayer chart from the past couple of years. At a glance you can see if the supply – top blue line – is outpacing the rate of sales – bottom red line. To further understand the numbers, hover over each month. The bottom sales number can be divided by the top supply number for each month, then multiplied by 12 (months in a year), to arrive at the estimated annual turn rate. Then compare that number to the same period last year, quarter, or month to understand how this market is trending.

January 1, 2023 - Present



I've done that analysis for our sprayer market. Instead of just taking one month, I've included the first three months of the year to help account for variability. You can see the final results of this calculation below.

- **2022 Q1: 4.1 Turns/year**
- **2023 Q1: 3.2 Turns/year**
- **2024 Q1: 2.5 Turns/year**

Understanding this trend can help you and your dealership not only prepare for a change in pace of sales, but also benchmark against the market average. You can do this in the solution yourself by simply using the same process as above and adding in appropriate filters of region and/or manufacturer. Benchmarking practices like this can provide often elusive feedback to your repricing, marketing, and sales strategies.

Change of Turns & MOS - TZP

2022 Q1

Listed: 720+816+787=2323
Sales: 177+275+333=785

- **Annualized Turns: (785/2323)*12=4.055**
- **MOS: 2323/785=2.959**

2023 Q1

Listed: 1410+1438+1574 = 4422
Sales: 341+346+489 = 1176

- **Annualized Turns: (1176/4422)*12=3.191**
- **MOS: 4422/1176=3.76**

2024 Q1

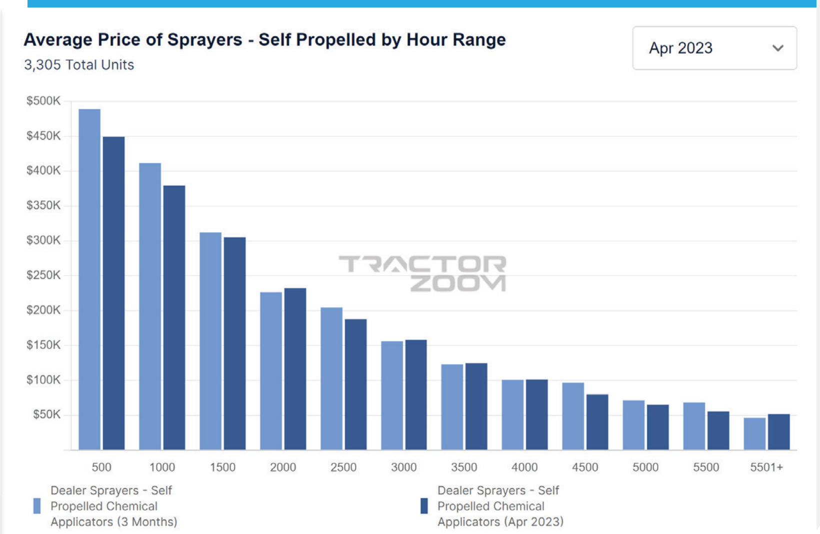
Listed: 2264 + 2640 + 2471 = 7375
Sales: 377 + 638 + 519 = 1534

- **Annualized Turns: (1534/7375)*12=2.496**
- **MOS: 7375/1534=4.808**

Value Adjustments

Looking at average dealership sprayer values gives the first impression that prices have increased significantly over last year. It is true that average values for self-propelled sprayers in certain hour categories are higher this year *(see below)*, yet that move up is due to newer models being introduced into these hour categories ***and*** a general shifting of the weight of more lower-hour sprayers ***within*** those categories. Since a growing supply of lower-hour equipment is the general trend that we are witnessing this year, this is likely to show up for multiple categories.

Current Average Self-Propelled Sprayer List Values vs. Spring of 2023



Rate of Depreciation

The rate of depreciation has changed, and is usually somewhat dynamic, especially for the lower hour ranges. This is likely due to two current factors. New sprayers, like most categories of equipment, have experienced significant recent price increases from the manufacturers, dragging the initial price point much higher. The second factor is the decline of the commodity markets, which reduces profitability, discretionary cash, ***and emotional drive*** from the demand side of the equation. So with a higher starting point and more downward demand pressure, it is no surprise that we see the depreciation from the 500-1,000 hour and then to the 1,500 hour category increase from last year.

All Sprayers combined

500 - 1,000 hr

(489067-411545)/500=$155 / hr in Q1 of 2024

(449379-379351)/500=$140 / hr in 2023

- **A 15/140=11% increase in depreciation rate**

1,000 - 1,500 hr

(414673-324075)/500=$181/hr

(379351-305352)/500=$147/hr

- **A (181-147)=34**

  34/147= 23% increase in depreciation rate for the 1000 - 1500 hr

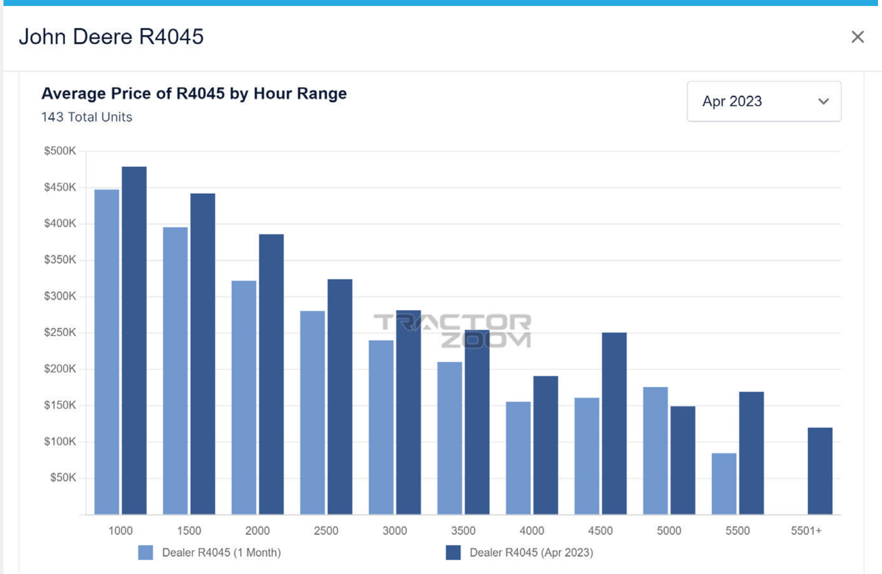
Specific Make/Model Analysis

As it was mentioned earlier, general averages, or “black box” answers can be very misleading if you cannot verify the data feeding those answers. This is especially true when working with sprayer valuations. While it appears that average listed values have increased, when you drill down to specific models within Tractor Zoom Pro’s Market Trends, you can see with transparency that the opposite is happening, and at what rate.

Below is a snapshot of John Deere’s R4045 price by hour level this year (light blue) compared to a similar time frame last year (dark blue).

A similar graph can be generated in Tractor Zoom Pro to reference any month in the past year. This can be helpful if the last time you went through a sprayer repricing exercise was 90 days ago, then pulling up the price changes from three months ago will give you a good price reference of how much the market has shifted by your specific model and hour category.

Current Average John Deere R4045 List Values vs. Same Model in Spring of 2023



Knowing that model-specific depreciation rates are crucial to some decisions, you can use the same R4045 data shown above. By hovering over the bar charts in Tractor Zoom Pro to get the difference between two hour categories, then divide by the hour difference, you can equate the depreciation rate for the John Deere R4045 to get the following:

- Average value for 1,000 hour category ($447,339) is divided by the average value for the 1,500 category ($395,738), and divided by 500 hour. This equals **$103/hr**
- Compare this to the 2023 final value of **$74/hr** ($478,987-$442,101)/500 hr

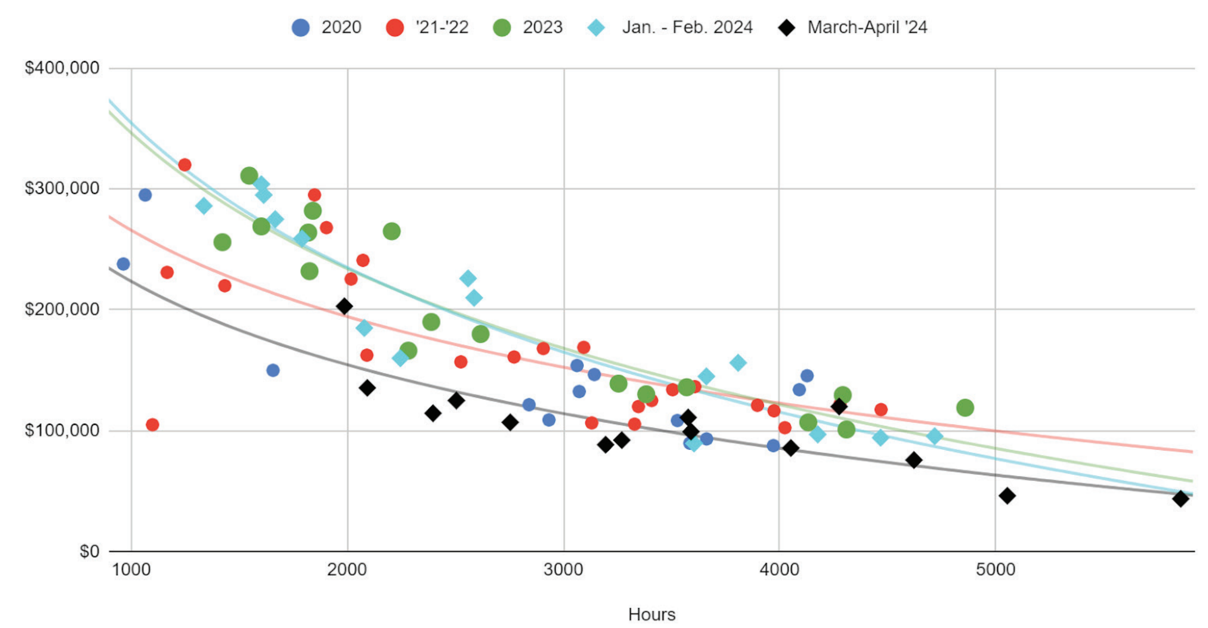
Directionally, this increase in depreciation for this hour range and hour category in 2024 is in line with what we discovered above and showcases the real-time price reduction measures currently being taken at dealerships, as well as the remnant effects of last year’s hot seller’s market. Similar deprecation calculations can be made in Tractor Zoom Pro for other models.

Depreciation Curve Value Analysis by Model

An additional method to triangulate trends is using Tractor Zoom Pro's Auction Search functionality to compare with the Market Trends graphing method like the example above. For this option, I have been tracking multiple Make/Model combinations over the past couple of years. You can see a more detailed example of this across multiple categories in one of our recent webinars.

For this example, John Deere R4045 auction sale values are trended on a scatter plot from the past four years. The question I attempt to answer here is, "Are the values trending downward in this current selling season?" Each of the previous years are color-coded and trended with a logarithmic best-fit regression line. Years 2021 and 2022 are combined in red since both of those years' values track very closely to each other. Year 2023 is coded green and 2024's early sales in January and February are in teal. The early part of 2024 was a decently strong sales season with residual discretionary cash still available to many farmers.

Individual Auction Sale Values for John Deere R4045 2020 - Present



For this analysis, the last two months, March and April of 2024, have been coded black to see any potential shift in demand at auction. There appears to be a significant decline in the sale values of these R4045 sprayers in just the last two months.

Data Considerations

Analyzing the correct data is essential for all equipment valuation and supply comparisons, and self-propelled sprayers are no exception. With the recent advancements in technology, sprayer values tend to vary greatly even within the same model. Vision recognition software is one of those pieces of technology that makes a significant difference in values. Below is an example of this. On the left is the average list value of John Deere's 412R on dealerships' lots. Then, using TZ AI, Tractor Zoom's artificial intelligence functionality to help determine characteristics that may have been otherwise overlooked, units with 'See and Spray' and without are in the center and right. The value difference is notable.

Avg. of all 412Rs	Avg. of 412Rs w/ See and Spray	Avg. of 412Rs w/o See and Spray
$512,441	**$644,629**	**$486,950**

By analyzing your sprayers of interest, or even other categories of equipment, your dealership should be better equipped to make informed pricing, sales, marketing, and inventory management decisions as the ag industry heads into a new challenging direction. If you would like to learn more about how Tractor Zoom's platforms are helping our partners with their repricing, sales, or inventory decisions, request a personal demo to see how we can help.