

USDA Price Indexes - 8-5-24 Update

Gregg Ibendahl

August 5, 2024

Introduction¹

The National Agricultural Statistics Service (NASS) reports on the prices received and paid by farmers. NASS reports most of these on an index basis relative to some base year. These reported indexes make it easy to see how prices have changed over time. One advantage of using indexes is that the base year can be readjusted by some simple math. The purpose of this paper is to examine those common expense items paid by farmers to see how they have changed over time relative to several base years. In this paper, base years from one year ago, five years ago, and ten years ago are used. Using different base years helps give farmers different perspectives on price changes.

This study examines the broad expense categories of herbicides, fertilizer, fuel labor, machinery, repairs, and seeds in one graph and a second graph has a breakdown of the specific fertilizer types that NASS tracks; mixed, nitrogen, and potash and phosphate. A third graph has the expense categories: ag services, autos, feeder cattle, feed, feed grains, fungicides, insecticides, and rent. In addition, the CPI index is used as a reference (in the first graph). As defined by NASS, prices paid represent the average cost of inputs purchased by farmers. NASS uses a survey of 2,000 thousand producers and agribusinesses to obtain the reported prices. The responses are aggregated by regional and national levels using appropriate weights.

Methods

The NASS data is reported monthly and the graphs use a 3-month moving average (previous month, current month, future month) to help provide some smoothing to the figures. In each figure, the reported index is readjusted to set each expense item to zero. The base starting point however is not a moving average and is the actual reading for that beginning reference month. From that point forward, the NASS index value is readjusted to show the percent increase from the base point. Because the base starting point is a single month reading and the values shown on the graph are moving averages, it is possible the starting point may not be exactly zero.

Because these indexes are based on survey data, there is some lag in reported values compared to what farmers are seeing for prices. Normally this wouldn't be a concern. However, fertilizer prices and fuel prices can change rapidly. As a result, the fertilizer and fuel numbers may lag.

¹Kansas State University - Department of Agricultural Economics
AgManager.info
email: ibendahl@ksu.edu
https://www.youtube.com/@little_pond_farm

Results

Figures 1, 2, and 3 show the expense changes for the last year. Figure 1 has the major expense categories while Figure 2 has the fertilizer breakdown. Figure 3 has additional expense categories. Figures 4, 5, and 6 are based on changes from five years ago. Figures 7, 8, and 9 are based on changes from ten years ago. Each set of 3 figures is laid out similarly with the main expense categories, fertilizer, and then the other expense categories.

The main index page also includes the CPI index. The CPI index is used to represent inflation so input categories that are above the CPI index line indicate that an input category has increased in price faster than inflation (starting from the initial baseline).

Discussion

From a one-year perspective (Figures 1, 2, and 3), most expenses have increased less than the inflation rate (approximately 3%). The only expenses that have increased faster than inflation have been fertilizer and feeder cattle. Some expenses have actually decreased in the last year. Fuel is about 10% lower while herbicides are about 5% lower. Feed grains and feed are about 10% lower in price with insecticides and autos also lower.

From a five-year perspective (Figures 4, 5, and 6), almost all the major expenses categories have increased faster than inflation. Inflation over 5 years has caused overall prices to increase by 20%. Cash rents and feed costs are the two notable exceptions for an expense category increasing faster than inflation.

From a ten-year perspective (Figures 7, 8, and 9), inflation has caused an average increase in prices of nearly 35%. Labor, machinery, and repairs are the only expense categories to have increased faster than the inflation rate. Fuel costs have actually decreased over a ten-year timeframe.

Conclusions

This publication also shows how starting point biases can cloud the changes in expenses. It is important to review not only recent price increases but the long-term increases as well. Fertilizer and fuel both tend to be very volatile in cost. Often expenses look very discouraging over the short-term but when examined over a longer time horizon, the increase can appear less serious.

This perception also works the other way. Some expenses seem like they haven't increased very much short-term. However, when examined over a longer time horizon, they have gone up significantly.

Machinery is still the biggest expense category on farms. Unfortunately for farmers, machinery and machinery repairs are two of the expense categories that have increased the most over a 10-year horizon (only labor has increased faster). Cost control is one way for farmers to improve profitability. Thus, based on the last 10-years, farmers can help improve profitability by especially watching their machinery expenditures.

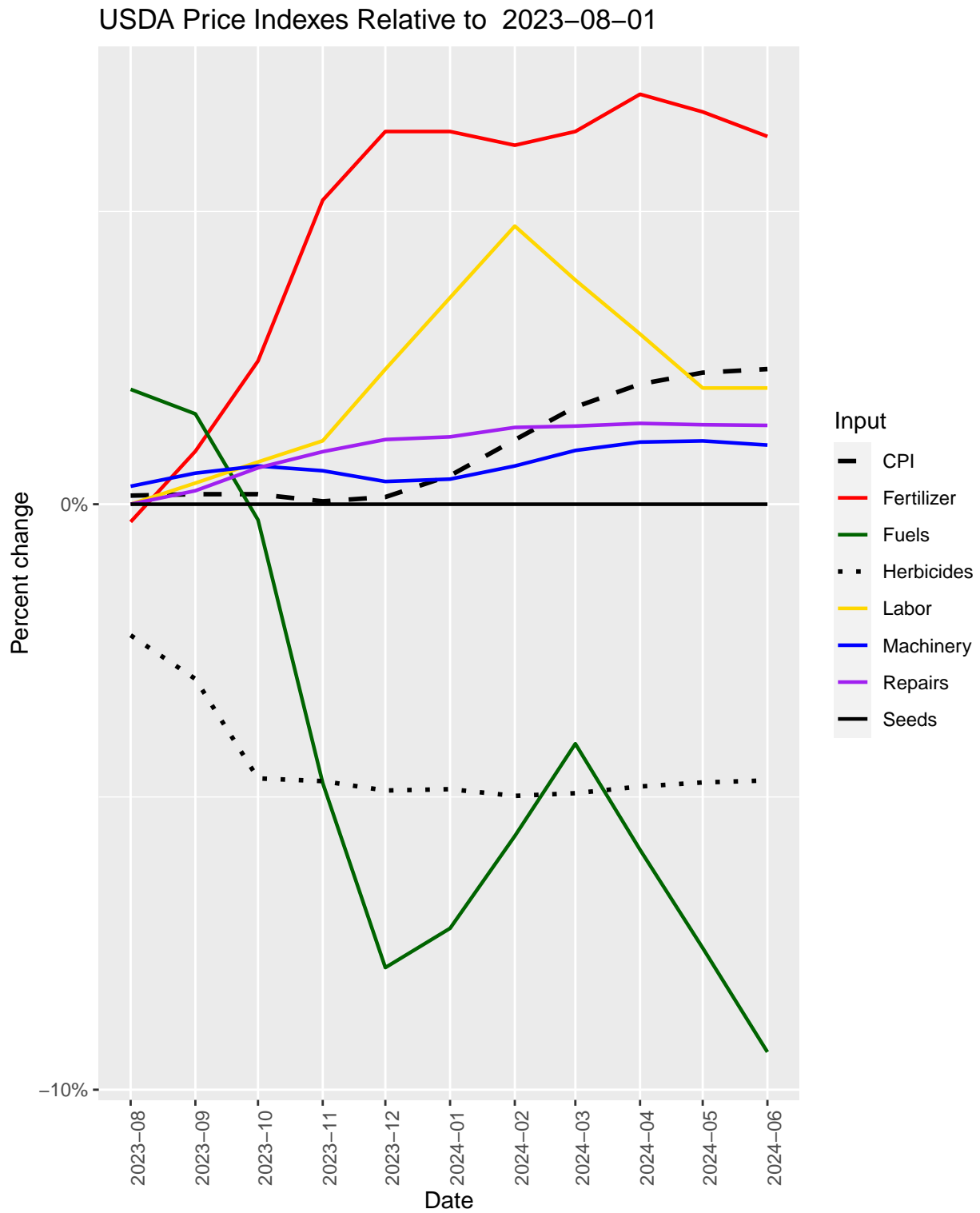


Figure 1: USDA Price Indexes Relative to 1 Year Ago - Main

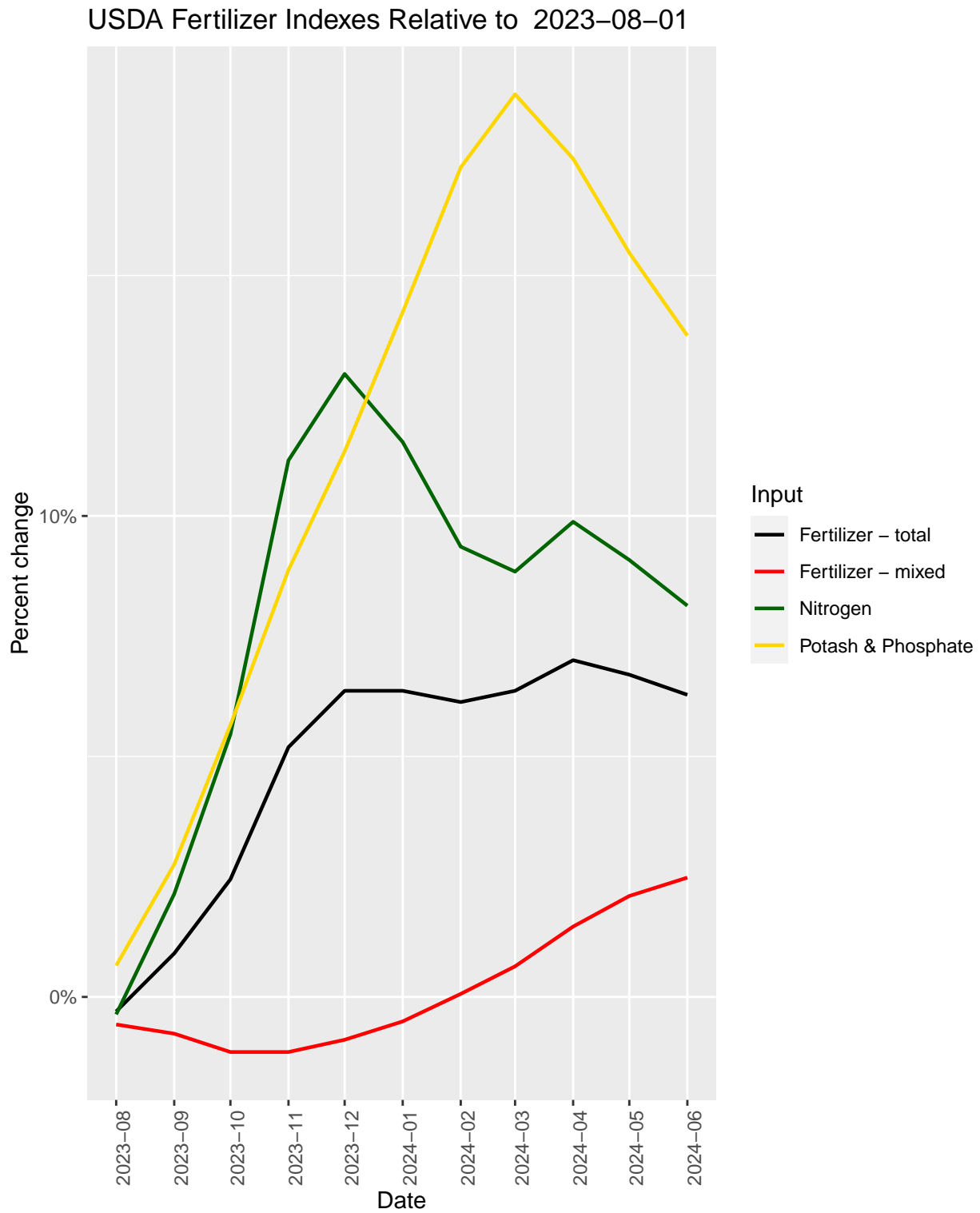


Figure 2: USDA Price Indexes Relative to 1 Year Ago - Fertilizer

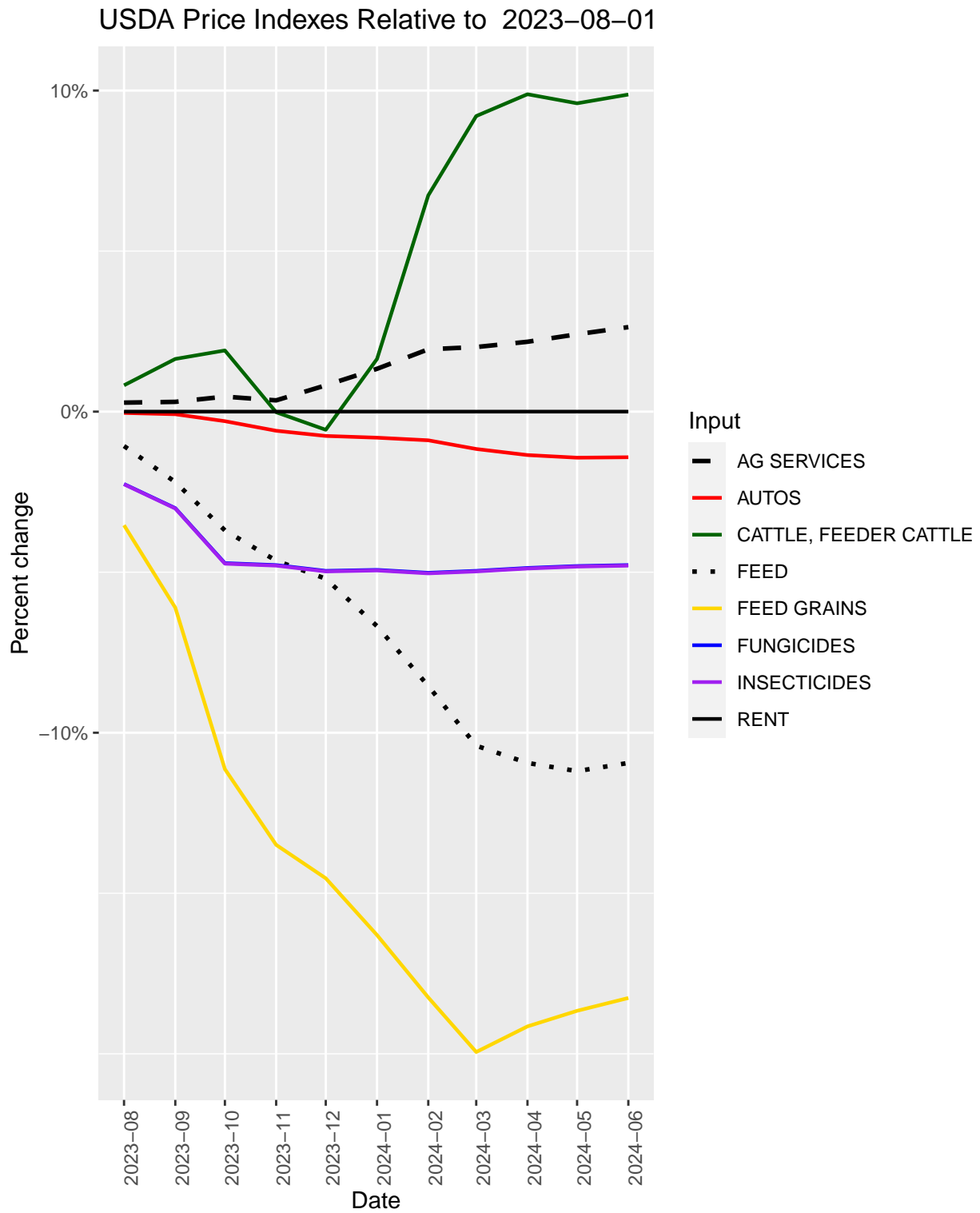


Figure 3: USDA Price Indexes Relative to 1 Year Ago - Other

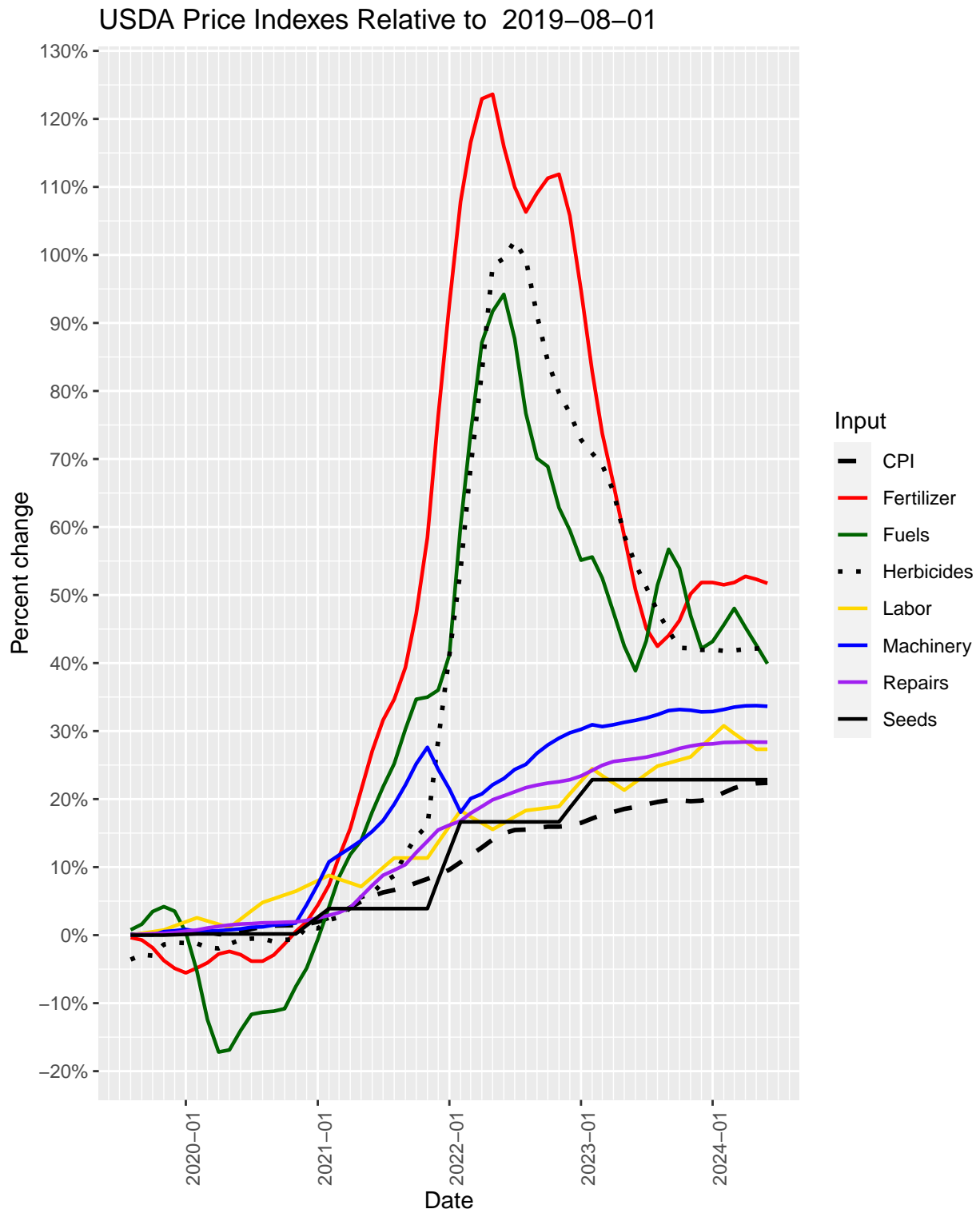


Figure 4: USDA Price Indexes Relative to 5 Year Ago - Main

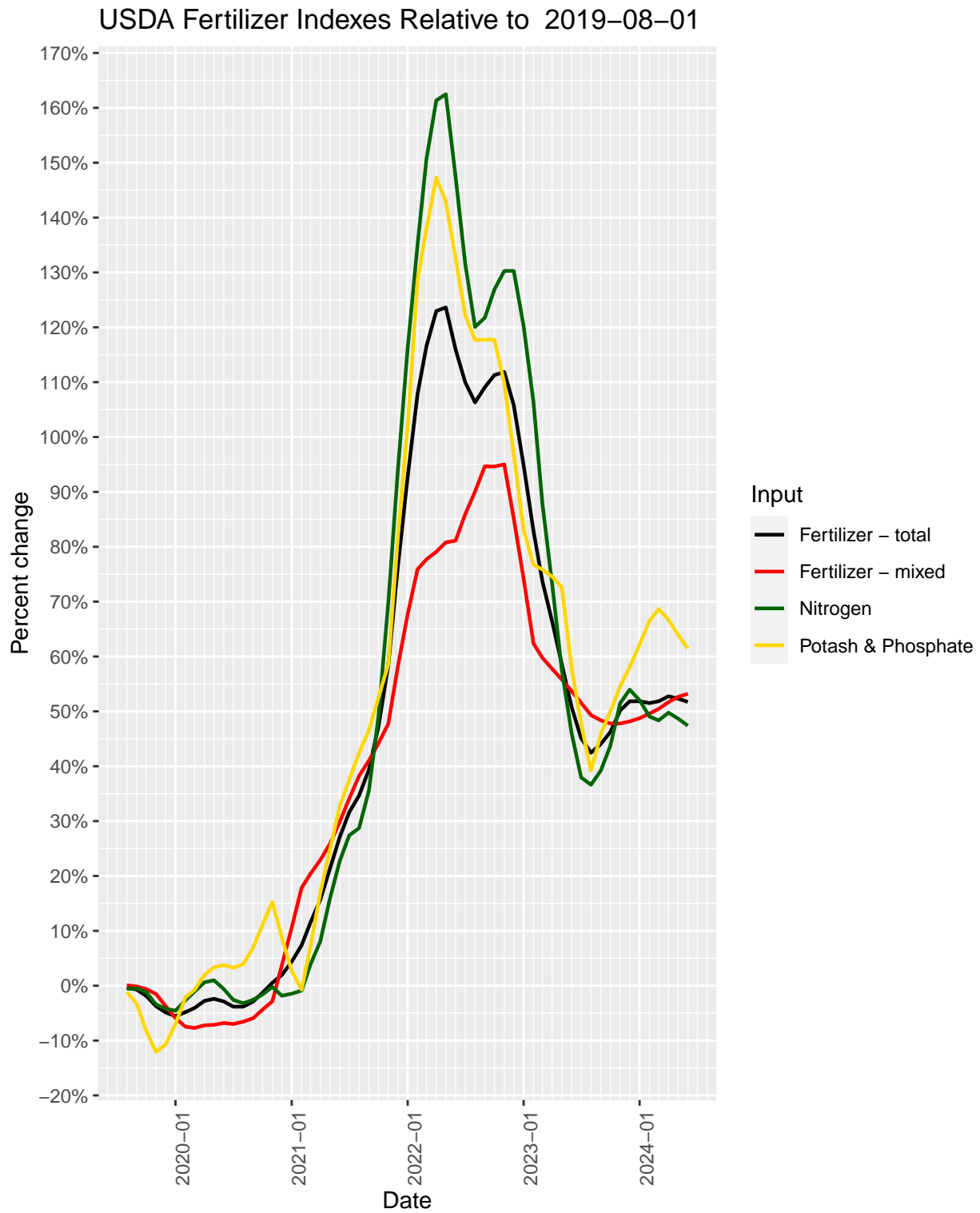


Figure 5: USDA Price Indexes Relative to 5 Year Ago - Fertilizer

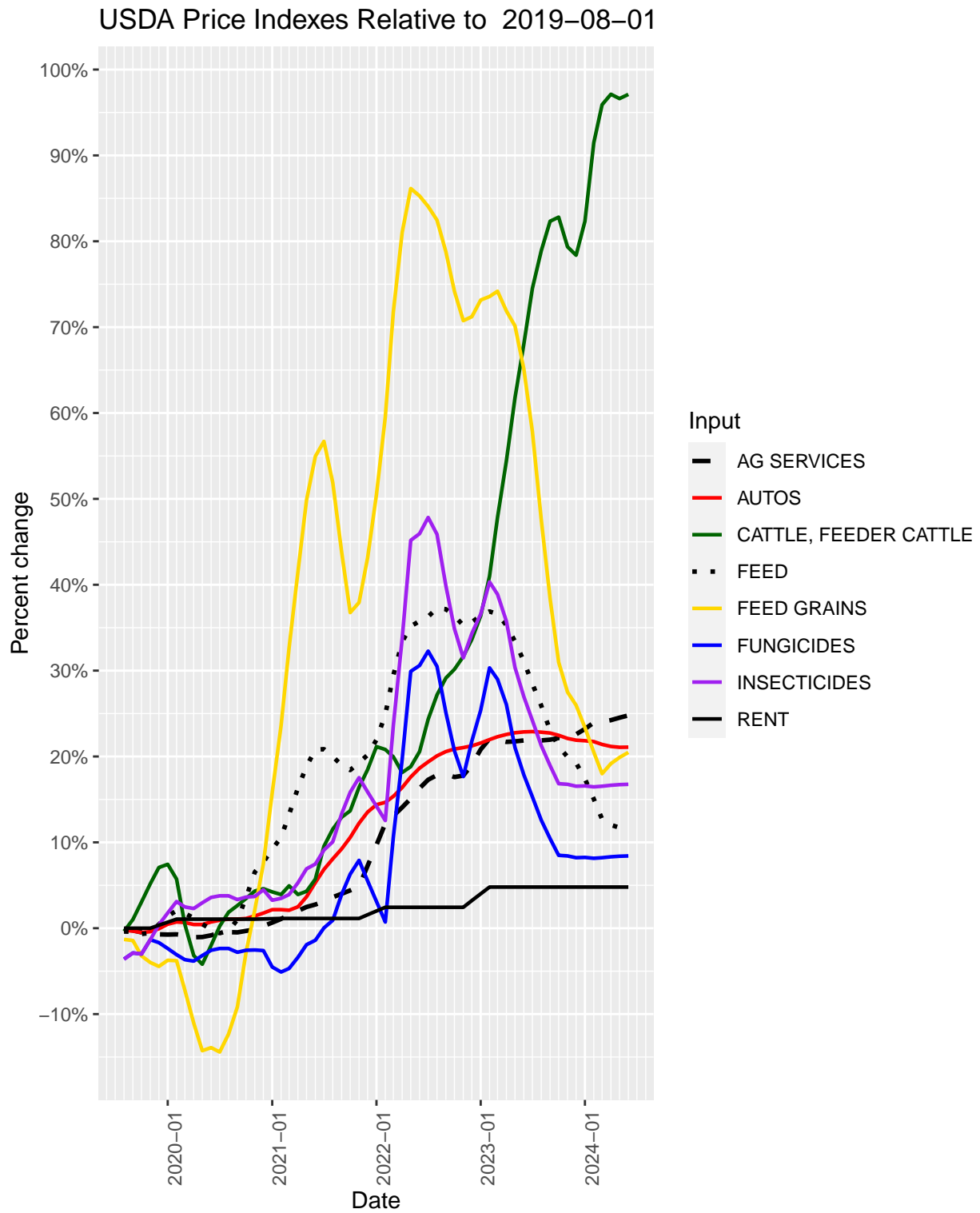


Figure 6: USDA Price Indexes Relative to 5 Year Ago - Other

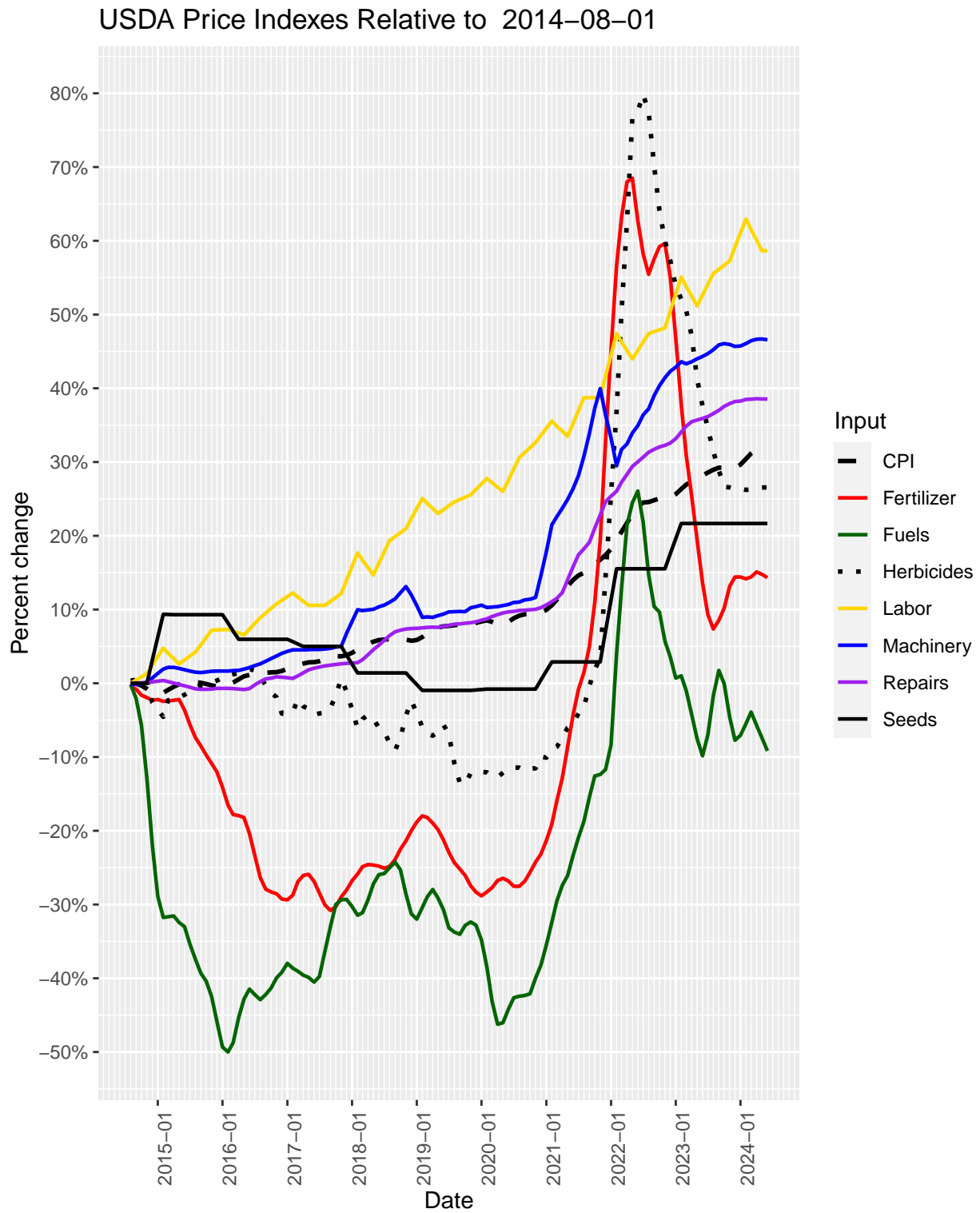


Figure 7: USDA Price Indexes Relative to 10 Year Ago - Main



Figure 8: USDA Price Indexes Relative to 10 Year Ago - Fertilizer

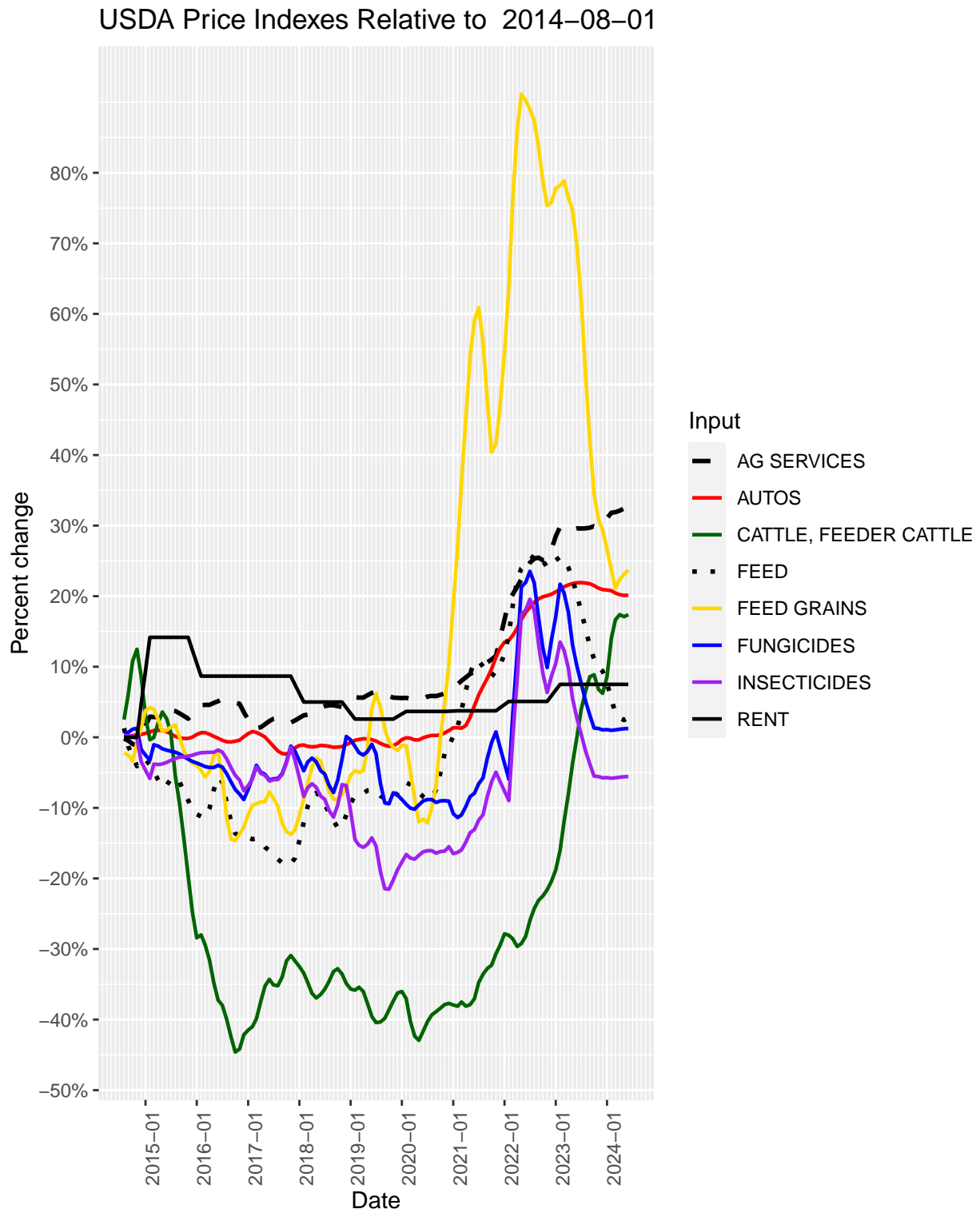


Figure 9: USDA Price Indexes Relative to 10 Year Ago - Other