OCTOBER 2024 | VOL. 6 ISS. 1

AG Talk Report

UNIVERSITY OF IDAHO, U.S. DEPARTMENT OF AGRICULTURE, AND IDAHO COUNTIES COOPERATING

INSIDE THIS ISSUE

Idaho Crop Profitability Outlook

By Pat Hatzenbuehler, Extension Specialist – Crop Economics, University of Idaho

Introduction

This "Ag Talk Report" article describes current conditions and expectations for ID crop farm profitability as harvest for growing season 2024 is underway or commencing soon.

A review of terms/factors pertaining to profitability can help guide the discussion. First, operating profit is equal to the difference between revenue from crop sales and total production costs (revenue minus production costs). Revenue is equal to the price(s) multiplied by the quantities of the crop sold, and the quantities of the crop sold are a function of acres harvested, yields, and quality. Production costs are equal to the sum of the price multiplied by the quantity of each input used for all inputs used. Since both revenue and costs are composed of the prices and quantities of crops produced and inputs, profitability is determined by the prices and quantities of crops and inputs.

Farmer Sentiment: Purdue/CME Group Ag Economy Barometer

Before examining price data for crops and inputs, which will provide insights regarding potential revenues and production costs, we first assess a more subjective measure of how farmers are thinking about their current and future business situation. The Purdue/CME Group Ag Economy Barometer tracks such farmer sentiments and is essentially an index constructed based on producer survey answers to questions of whether U.S. farmers feel that they are "better off", "worse off", or "about the same" in the current year, and whether they expect to be "better off", "worse off", or "about the same" in the next year. The Purdue/CME Group Ag Economy Barometer for July 2024 is included in Figure 1. It shows that the index value of 113 for July 2024 is 10 points lower than that of July 2023 (123). Thus, there were more "worse off"

Save the Dates:

November 6-7, 2024: Annual meeting of the Idaho Association of Plant Protection (IAPP), more information here

January 22-23, 2025: Idaho Potato Conference, more information here

January 28-30, 2025: WA/OR Potato Conference, more information here

May 6, 2025: Ag Talk Tuesday live sessions resume (1st and 3rd Tuesdays, May through August), more information here

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responses regarding current and future financial conditions among U.S. farmers in July 2024 than there were in July 2023. This is an initial indication that farm profitability conditions may be more challenging in 2024 than 2023.

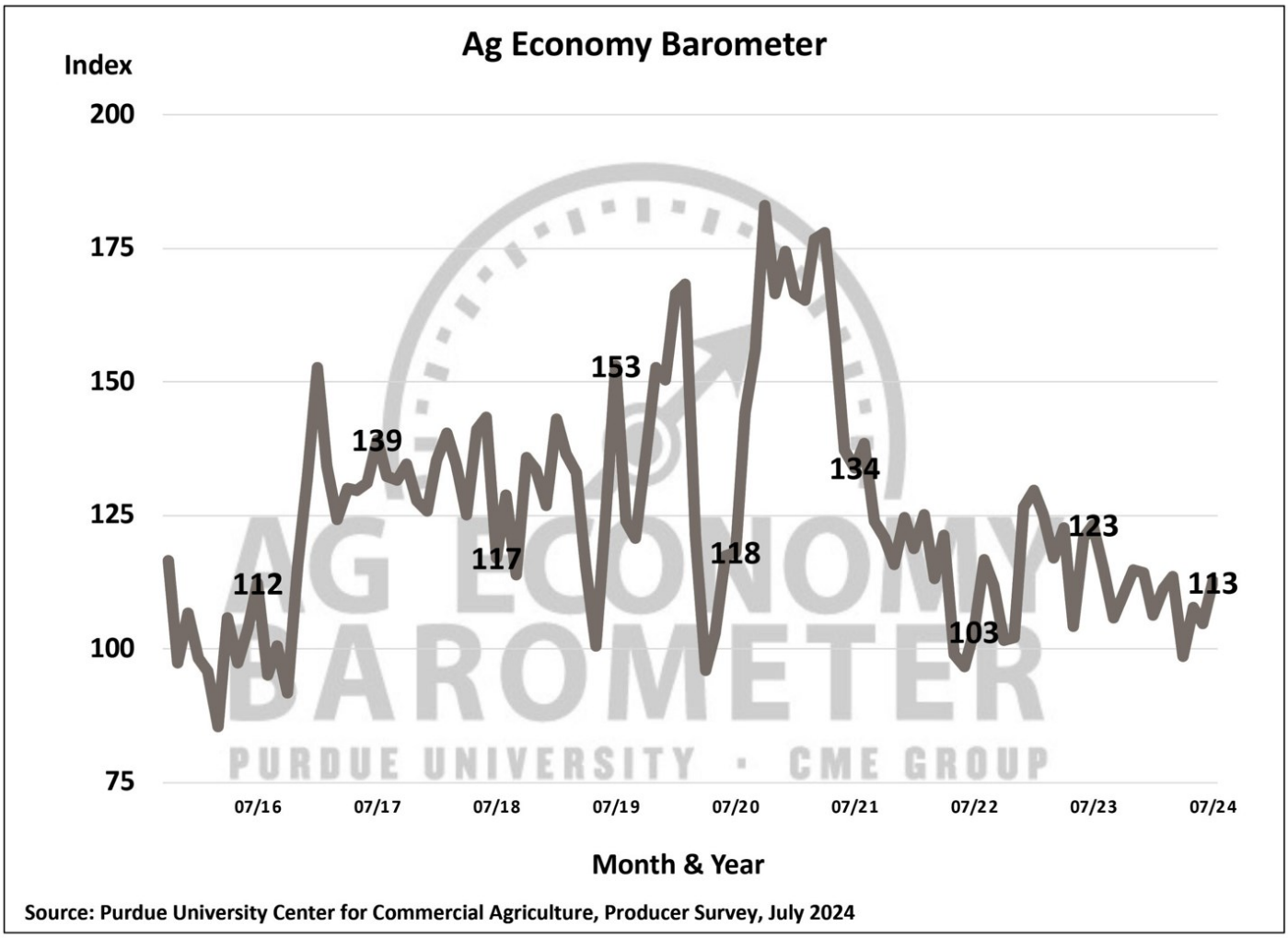


Figure 1. Purdue/CME Group Ag Economy Barometer, October 2015-July 2024.

Figure 1. Purdue/CME Group Ag Economy Barometer, July 2024.

Another type of information that the Purdue/CME Group gather in their producer survey for the Ag Economy Barometer is answers to a question that asks what the biggest concerns are for a farming operation heading into the next year. The responses to this question for the July 2024 survey are included in Figure 2. The responses indicate that the highest percentage of respondents stated that "higher input costs" were their biggest concern in July 2024, as they were in July 2023. However, the percentage of respondents who selected "lower crop and/or livestock prices" as their biggest concern increased by 10 percentage points from July 2023 (19%) to July 2024 (29%). This demonstrates that lower crop and/or livestock prices are now nearly the biggest concern among U.S. producers. Having both higher input costs and lower crop and/or livestock prices are not a good combination for farm profit.

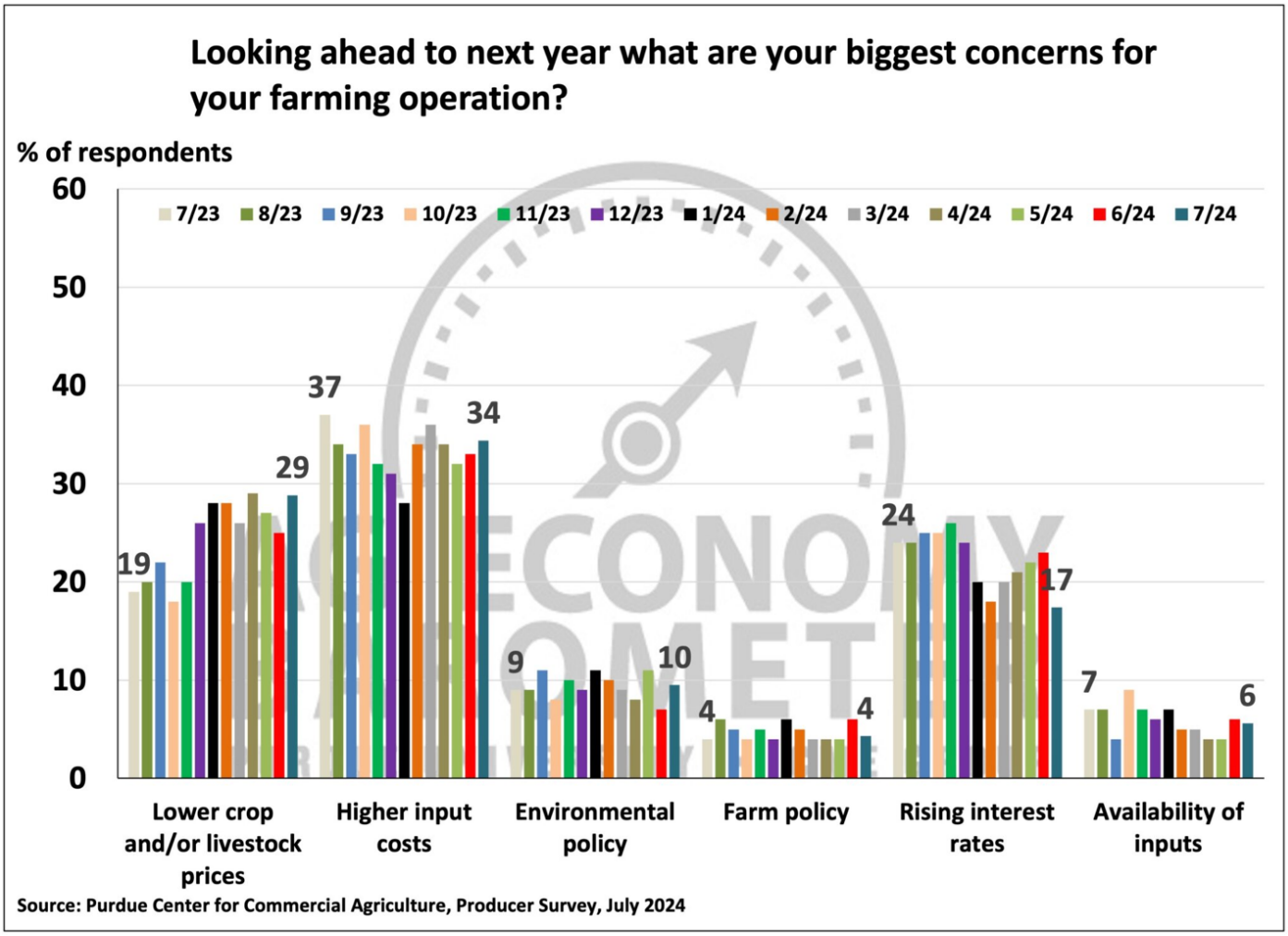


Figure 3. Biggest Concerns for Your Farming Operation, June 2023-July 2024.

Figure 2. Biggest Concerns among Respondents to the Purdue/CME Group Producer Survey, July 2024.

Farm Income: Remember ups… and downs

While a declining Purdue/CME Group Ag Economy Barometer and substantial concerns for both higher input costs and lower crop and/or livestock prices indicate that farm profits may likely be lower in 2024 than 2023, estimates for net farm income can provide insights regarding the potential magnitude of the change. Figure 3 includes estimates of "Net Cash Farm Income" (NCFI) among U.S. farmers by the U.S. Department of Agriculture (USDA) Economic Research Service, which is a similar measure to the profitability definition mentioned in the introduction. The estimates show that the highest NCFI since 2003 was that for 2022, while those in 2021 and 2023 were also higher than the 2003 – 2022 average value. However, as may be expected based on farmer sentiment discussed earlier, U.S. NCFI in 2024 is expected to be below the 2003 – 2022 average and the lowest since 2016.

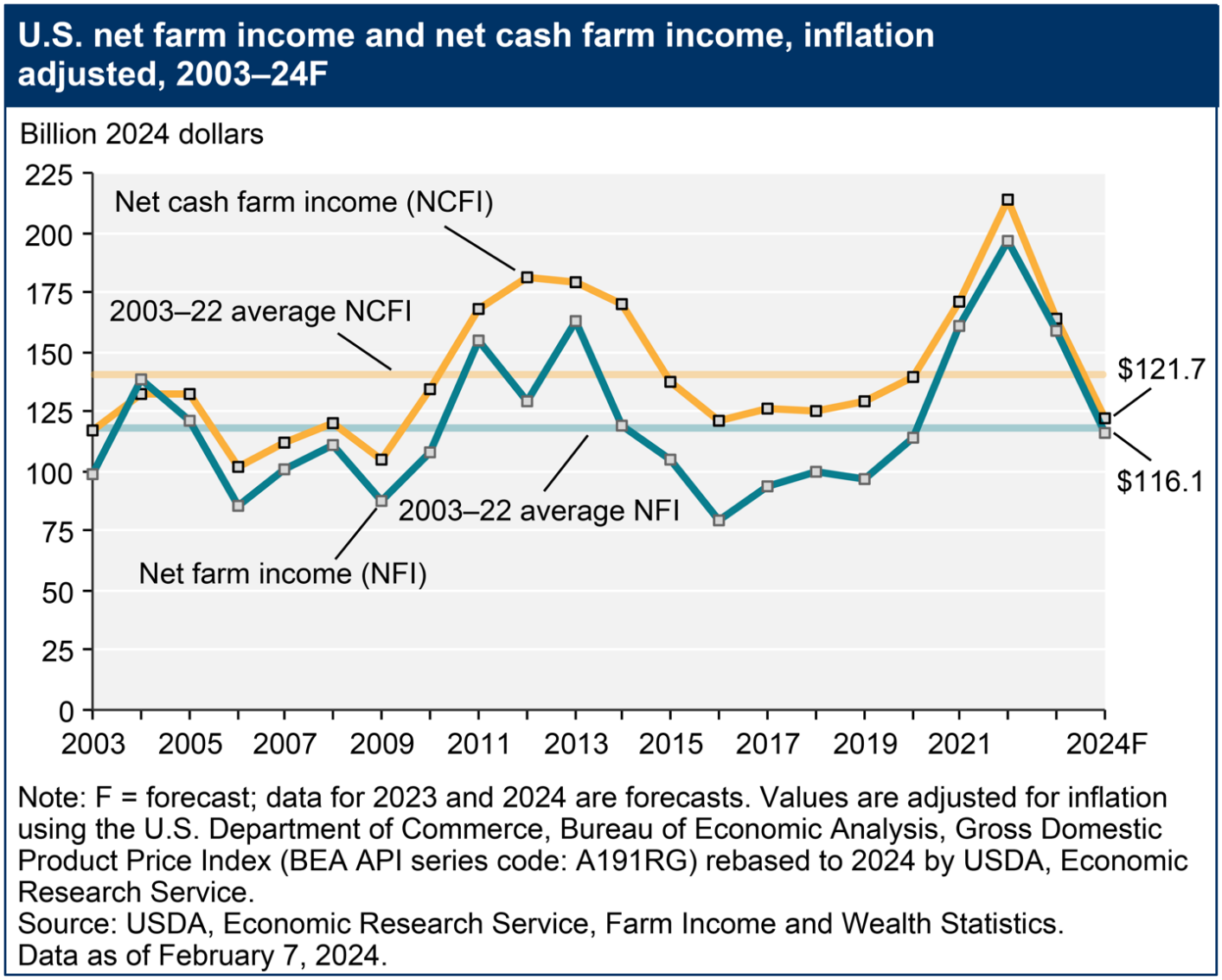
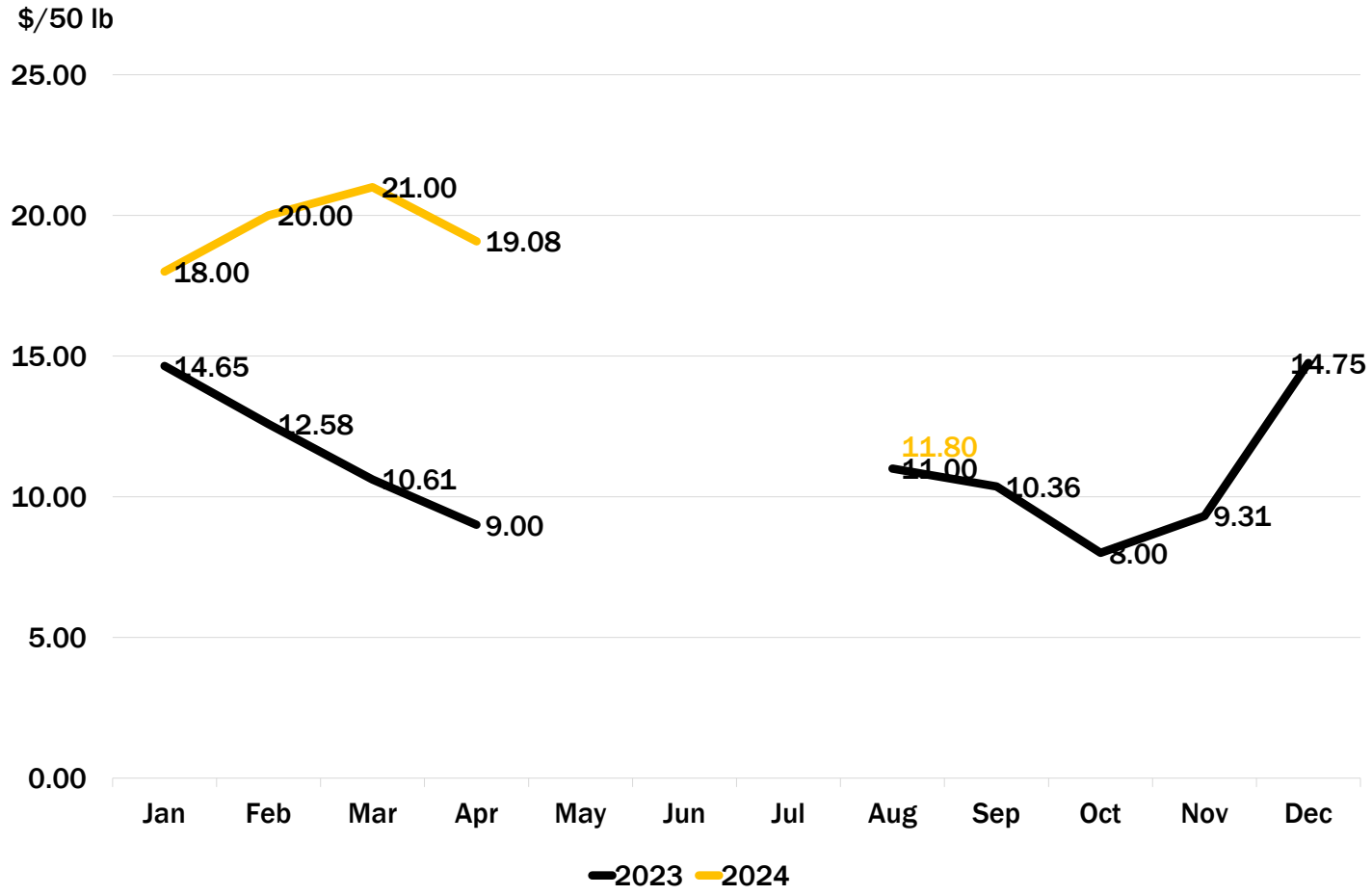


Figure 3. Estimates of U.S. Net Farm Income and Net Cash Farm Income, 2003 – 2024F.

Crop prices

While farm profitability challenges exist throughout the U.S., due to ID's relatively unique and diverse crop portfolio, there may be more opportunities for profit among ID producers than is the case in other parts of the U.S. To investigate whether this is the case, we next examine prices for onions, barley (malting), sugar, wheat, alfalfa hay, and potatoes (open market) sequentially for 2023 and 2024 (through the most recent month for which data are available).

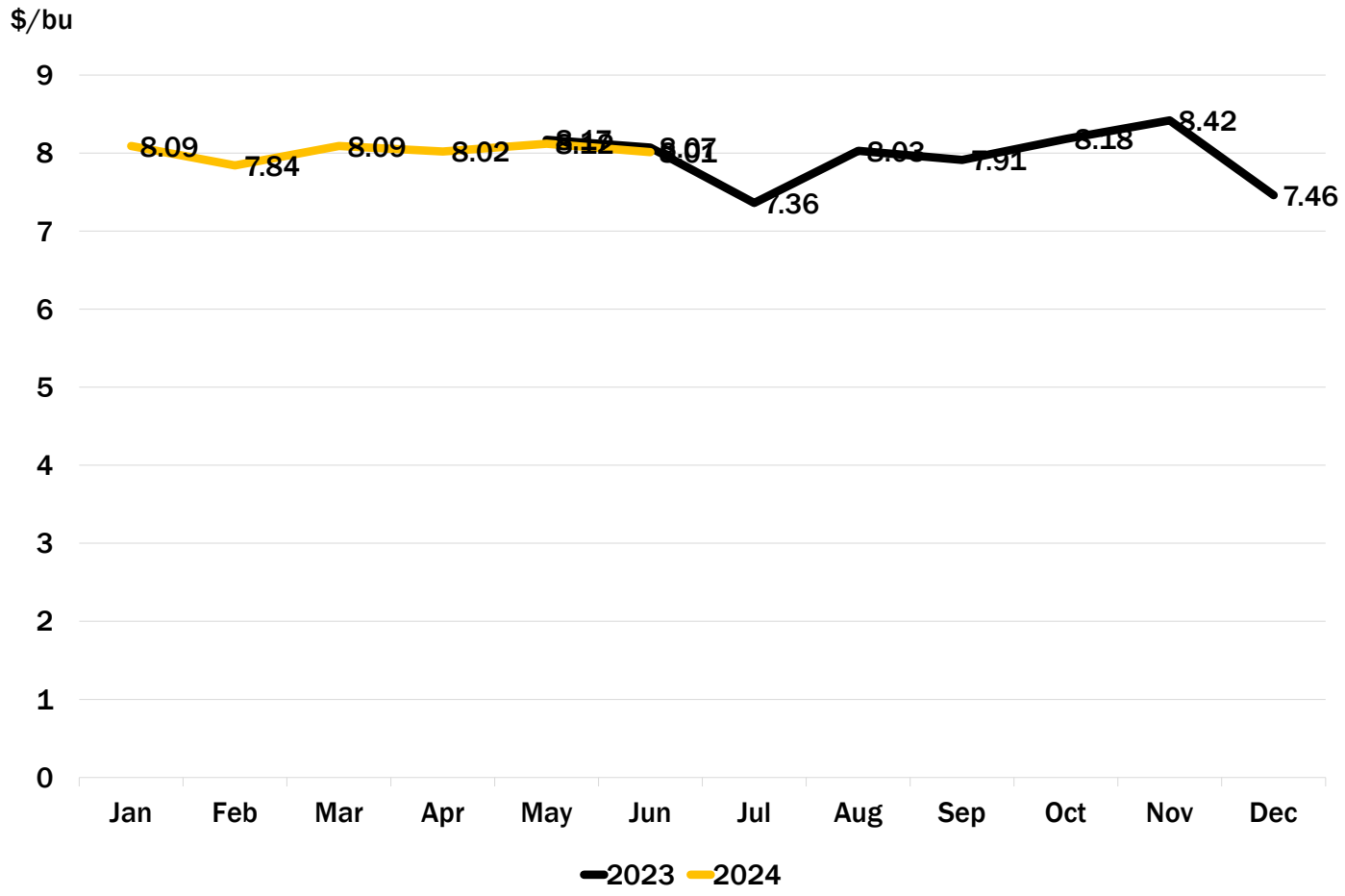
Monthly average onion prices for ID-Malheur County, OR for 2023 and 2024 (through August 13) from the USDA-Agricultural Marketing Service (AMS) are plotted in Figure 4. The plots show that onion prices started to rise from October to December 2023, and then continued to rise through March 2024. Additionally, the average price in 2023 was $11.14/50 lb., while it is $17.98/50 lb. in 2024 (through August 13). However, the most recent price of $11.80/50 lb. is only slightly above the August 2023 average price of $11.00/50 lb. Thus, there may have likely been opportunities to sell onions at relatively high prices toward the end of 2023 and early 2024, but the higher price levels appear to no longer be applicable as of August 2024.



Source: USDA-AMS.

Figure 4. Monthly ID-Malheur County, OR Onion Prices, 2023 – 2024 (to August 13).

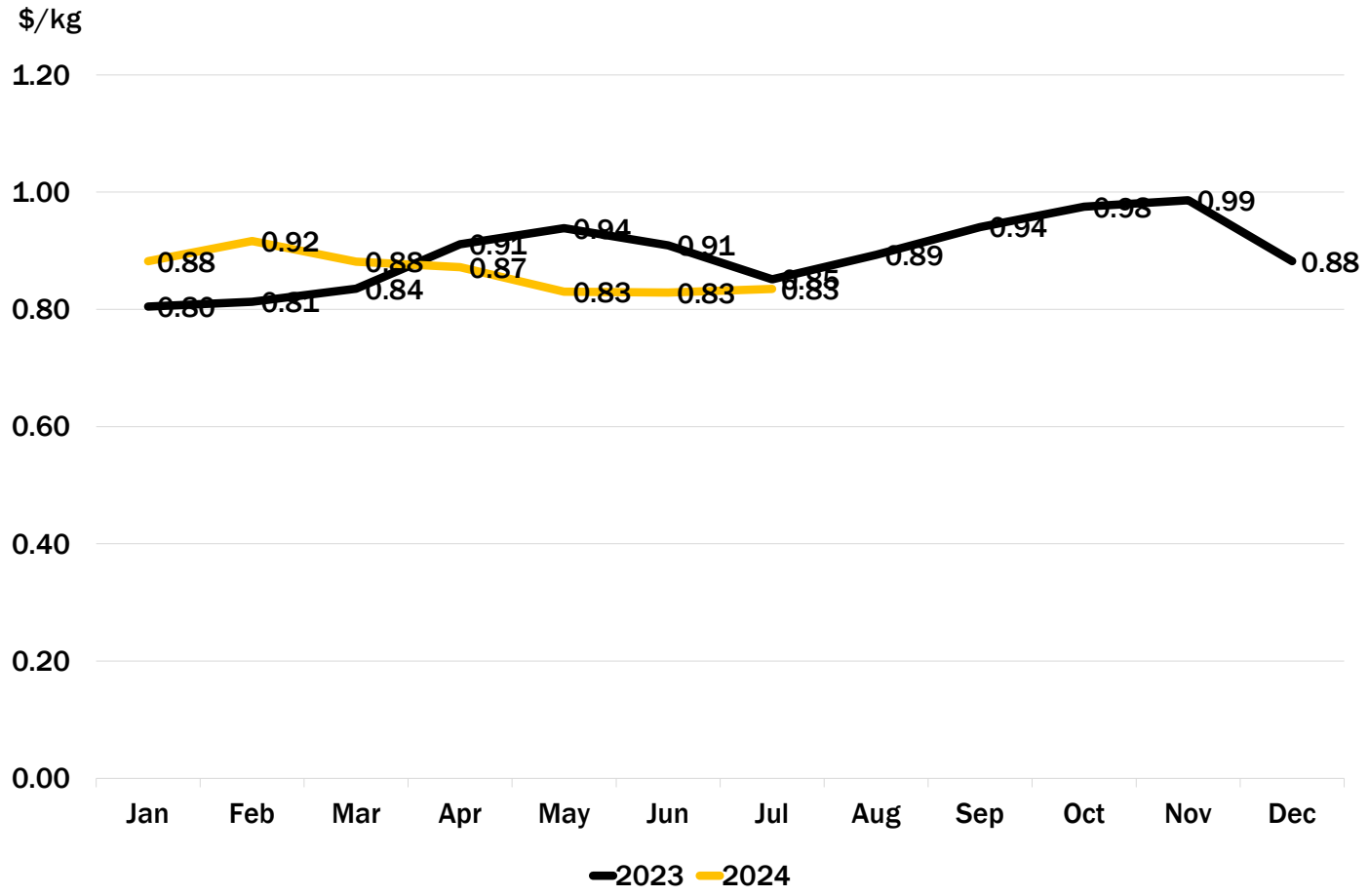
ID Barley (malting) prices for 2023 and 2024 are assessed next, and these are plotted in Figure 5. These price data are from the USDA National Agricultural Statistics Service (NASS), and they represent monthly statewide average prices. The plots indicate that, with some month-to-month fluctuations, barley (malting) prices have remained at similar levels in 2024 compared to 2023. Indeed, the average price in 2024 (to July) of $8.03/bu is $0.08/bu higher than that in 2023 ($7.95/bu). Thus, the sales environment for barley (malting) so far in 2024 appears broadly like that in 2023.



Source: USDA-NASS.

Figure 5. Monthly ID Barley (malting) Prices, 2023 – 2024 (to July).

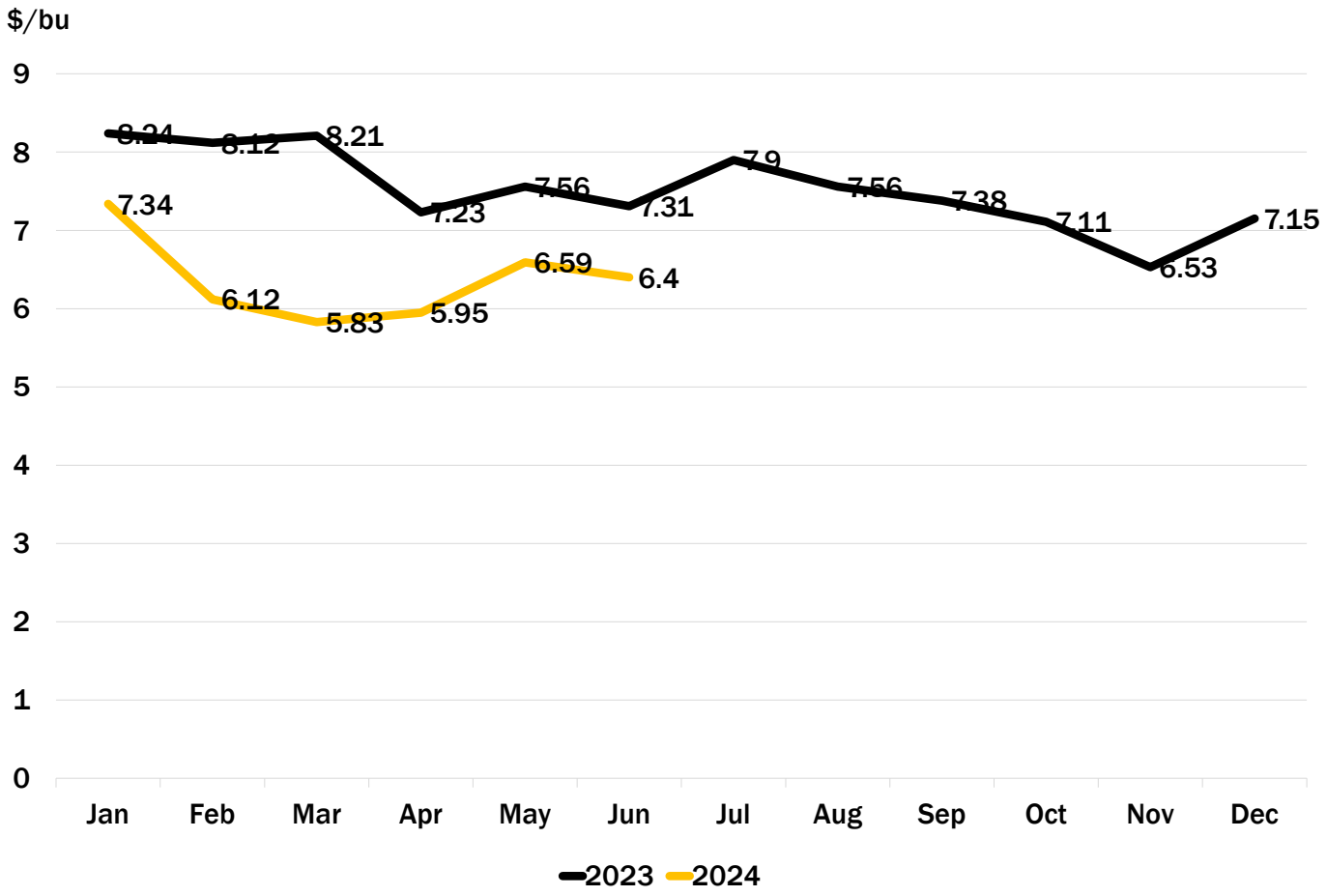
Sugar beet price data are not as widely gathered by the USDA or other sources as is the case with the other examined crops. Thus, in place of sugar beet price data, sugar data from the World Bank are examined instead (note that a correlation coefficient estimate for yearly annual USDA sugar beet prices with World Bank sugar prices done by the author had value of 0.89, which implies they move closely together over time). The plot of monthly U.S. sugar prices for 2023 to July 2024 is included in Figure 6. Like as was the case with barley (malting) sugar prices have remained relatively close in 2024 (to July) to those in 2023. The average for 2024 (to July) of $0.86/kg is only $0.03/kg lower than the average in 2023 ($0.89/kg). Thus, there may likely be opportunities among sugar beet producers to achieve similar revenues in 2024 as in 2023, conditional on the quantity sold being at also similar levels and quality meets buyer specifications.



Source: World Bank.

Figure 6. Monthly US Nearby Futures Sugar Prices, 2023 – 2024 (to July).

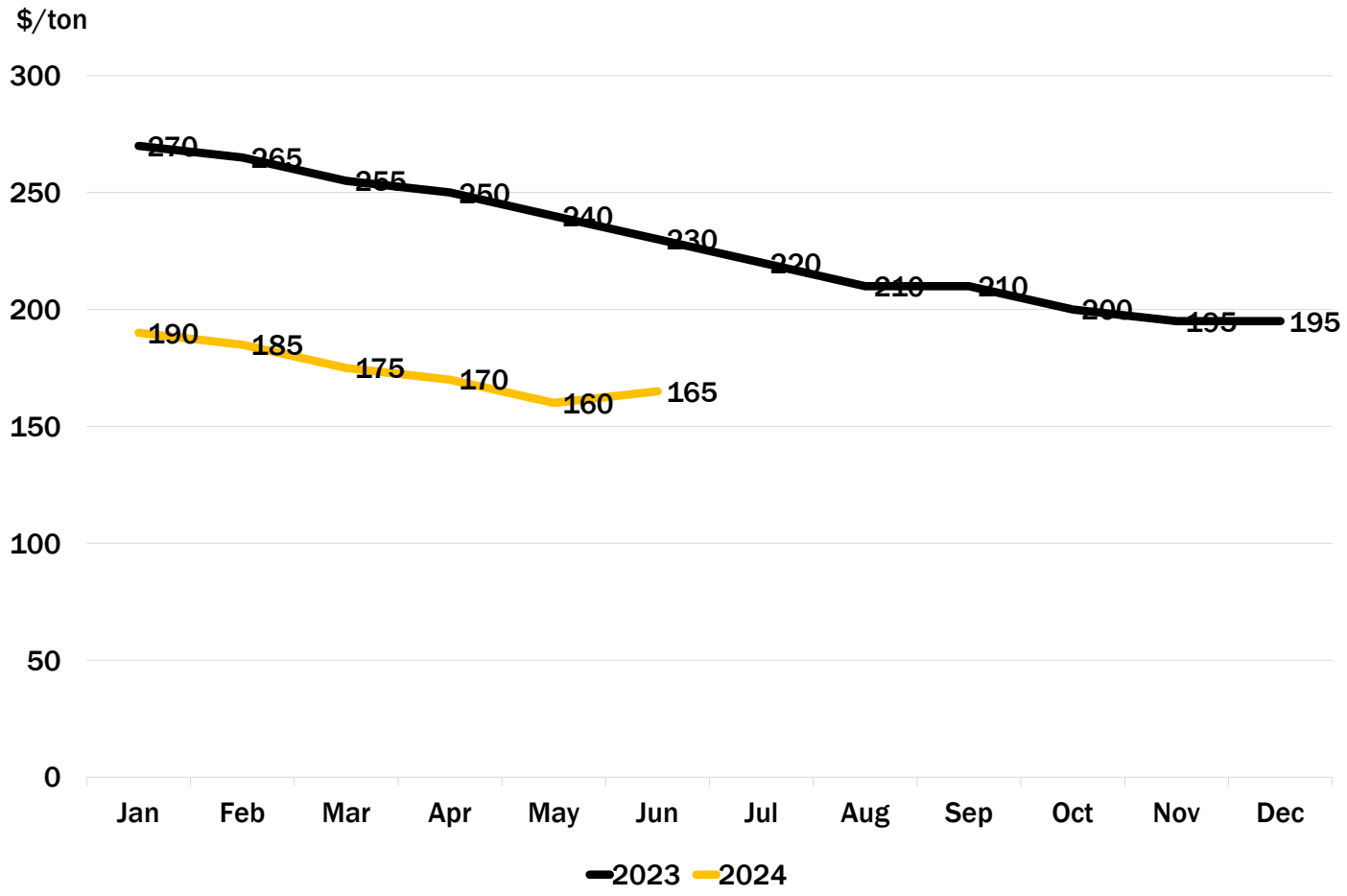
Price trends are quite different for wheat, alfalfa hay, and potatoes than it was for onions, barley (malting), and sugar. A plot of monthly ID wheat prices from USDA-NASS for 2023 to 2024 (to July) is in Figure 7. It is observed that, with some month-to-month fluctuations, wheat prices have broadly had a downward trend from January 2023 through June 2024. This downward trend is also reflected in a lower average price in 2024 (through June) of $6.37/bu compared to that of $7.53/bu in 2023. Thus, for ID wheat farmers to maintain their profitability in 2024, the quantities sold would need exceed those in 2023 by a somewhat sizable amount or a higher price was obtained via a contract or other marketing arrangement.



Source: USDA-NASS.

Figure 7. Monthly ID Wheat Prices, 2023 – 2024 (to July).

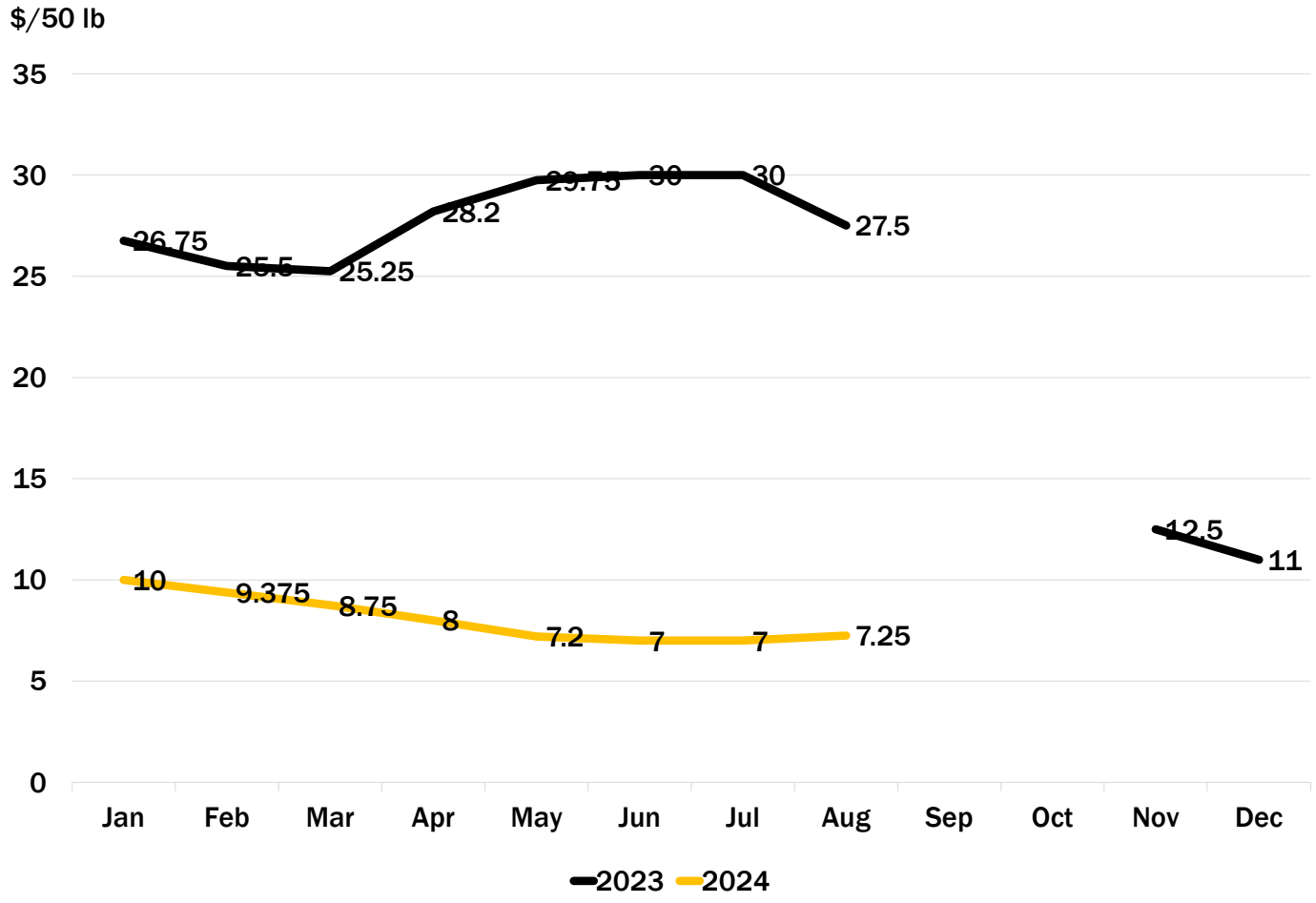
Wheat is not the only crop that has had a downward trend in prices since early 2023. Alfalfa hay prices, for which ID state monthly averages for 2023 and 2024 (to July) are displayed in Figure 8, have also been declining since January 2023 and with fewer fluctuations than was the case for wheat. The average alfalfa hay price for 2023 was $228/ton, while that for 2024 (to July) is $174/bu. However, the average price did increase slightly between May and June 2024, which may indicate that the downward trend may no longer apply. It will be important to keep an eye on alfalfa hay prices in the months ahead to determine if this is the case.



Source: USDA-NASS.

Figure 8. Monthly ID Alfalfa Hay Prices, 2023 – 2024 (to July).

The last crop for which price trends are assessed is potatoes (open market). Figure 9 shows monthly average prices from USDA-AMS for Russet Burbank (U.S. One) 80 count 50 lb. carton from Twin Falls-Burley for 2023 to August 9, 2024. The price patterns in 2023 were starkly different from those in 2024 (so far). Prices were above $25/50 lb. for the period of January to August 2023, but then dropped to $12.50/50 lb. by November 2023. Prices have remained at $10 or below for all of 2024. Average prices were $24.65/50 lb. in 2023, but only $8.07/50 lb. in 2024 (to August 9). Thus, much larger quantities sold or alternative marketing arrangements that can facilitate receipt of higher than open market prices are needed for potato (open market) revenues in 2024 to remain near their levels in 2023.



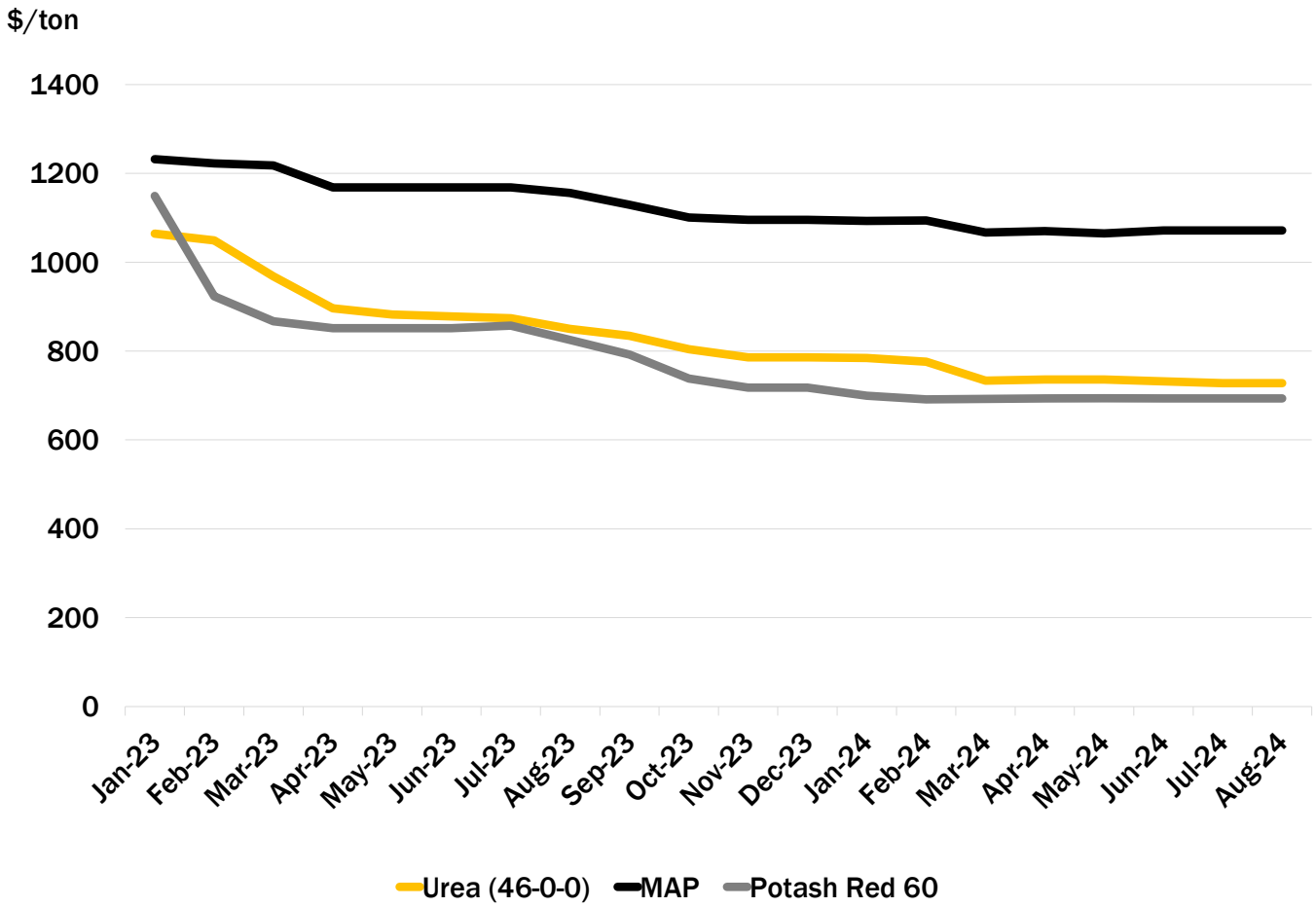
Source: USDA-AMS.

Figure 9. Monthly Twin Falls-Burley Russet Burbank (U.S. One) 80 Count 50 lb. Carton Prices, 2023 – 2024 (to August 9).

Input costs

The second piece of the profit equation is production costs, which are determined by the prices and quantities of inputs used.

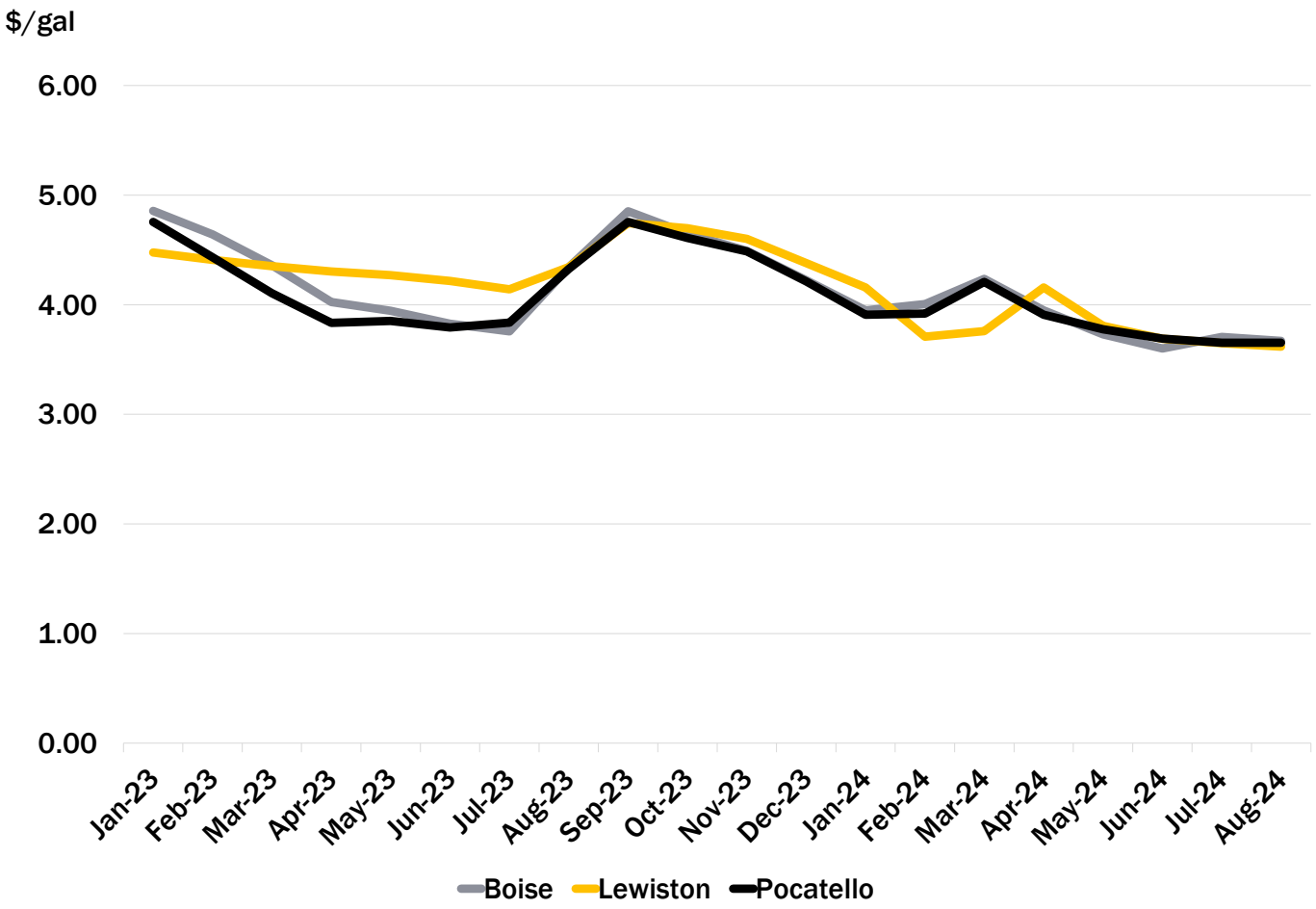
A key input for production of the crops grown in ID is commercial fertilizer. Figure 10 has plots of USDA-AMS prices of Urea (46-0-0), MAP, and Potash Red 60 for January 2023 through August 9, 2024. Each of the price series has the same general pattern such that the highest price for each was in January 2023 and month-to-month changes in prices since then have either been steady or negative. There is also a declining trend from the beginning to the end of each of the price series. The average prices in 2024 (through August 9) of Potash Red 60, Urea (46-0-0), and MAP are 18%, 16%, and 7% lower, respectively, than in 2023. These somewhat lower fertilizer prices are helpful for crop farmers to achieve profitability, especially for production of the crops that have had lower sales prices (wheat, alfalfa hay, and potatoes (open market)).



Source: USDA-AMS.

Figure 10. Monthly Fertilizer Prices for the Pacific Northwest, 2023 – 2024 (to August 9).

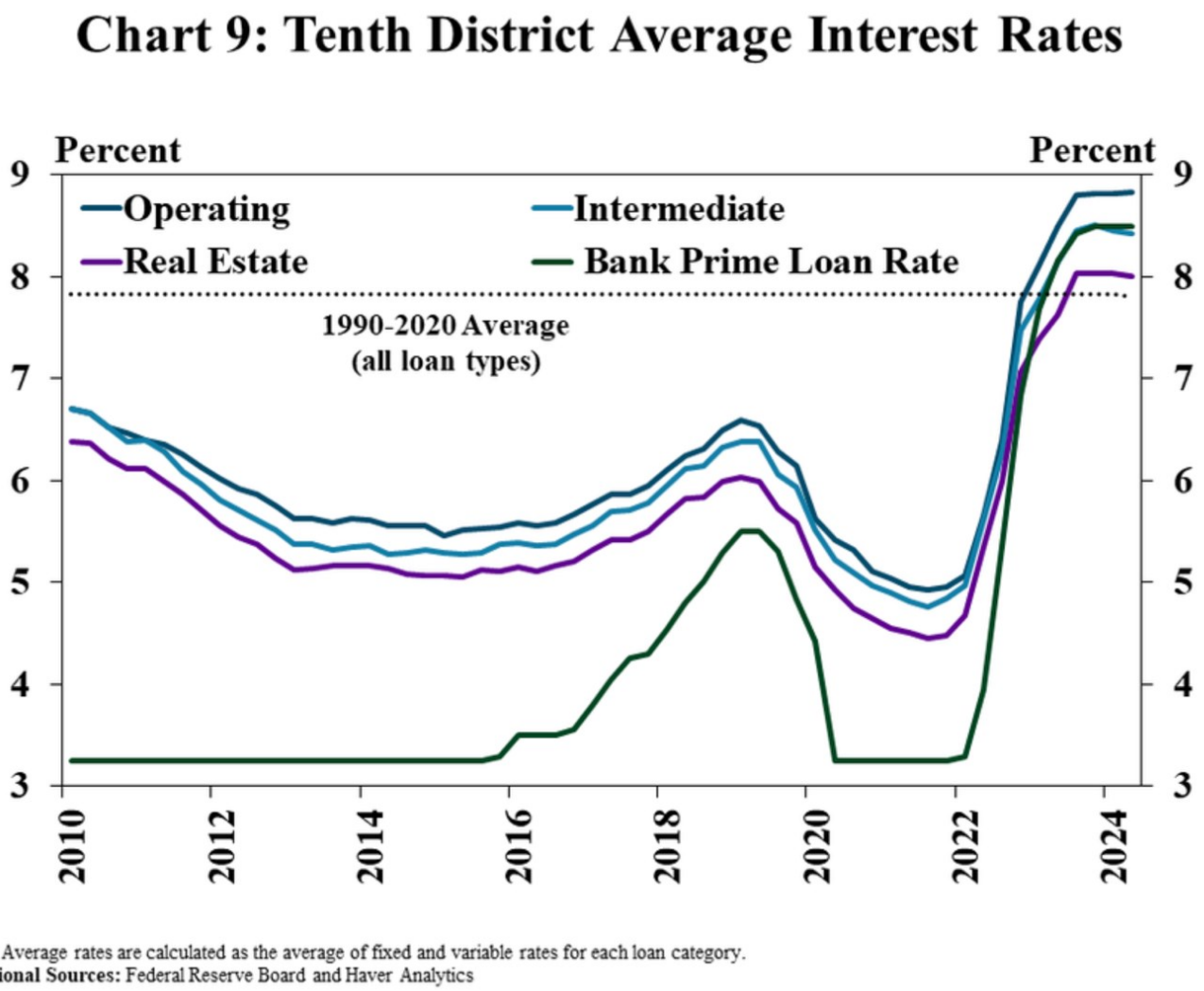
Fuel is used in crop production for activities such as planting, harvest, and general transportation. Average monthly fuel (diesel) prices from Gas Buddy for Boise, Lewiston, and Pocatello for January 2023 through August 11, 2024, are plotted in Figure 11. Each of the price series follows a similar pattern such that the price in January 2023 was relatively high and then prices rose again from July to September 2023 before declining in most months from September 2023 to August 2024. The average prices in 2024 (through August 11) for Boise, Lewiston, and Pocatello are 11%, 13%, and 10% lower, respectively, than those in 2023. Lower fuel prices are also beneficial for profitability of crop production.



Source: Gas Buddy.

Figure 11. Monthly Fuel (diesel) Prices for Boise, Lewiston, and Pocatello, ID, 2023 – 2024 (to August 11).

Interest rates on loans, such as operating loans that are typically short-term (e.g., one year repayment schedule), can influence profitability by influencing the size of interest payments. Larger interest payments, which are incurred when interest rates are higher, can reduce cash availability to pay for other expenses. Average farm loan interest rates for the Federal Reserve Bank Tenth District, which includes CO, KS, NE, OK, WY, and parts of MO and NM, are shown in Figure 12. The plot average operating loan rates shows that they rose from near 5% in 2022 to over 8% in 2023 and 2024. Average operating loan interest rates in 2024 are 8.98% while they were 8.74% in 2023. Thus, crop farm interest expenses are likely to either similar or slightly higher in 2024 than 2023.



Source: Federal Reserve Bank of Kansas City.

Figure 12. Average Farm Loan Interest Rates for the Federal Reserve Tenth District, 2010 to 2024.

The last input price assessed are farm labor wage rates, which tend to either remain at the same level or increase and rarely decline. Table 1 includes mid-range wage rates from the ID Department of Labor for farm labor for North ID and South-Central ID for 2023 and 2024. The data show that mid-range wage rates in North ID are the same in 2024 as 2023 for hay harvest, but higher by $0.93/hr for grain harvest. For South-Central ID, mid-range wage rates increased by $0.43/hr for irrigation and harvest labor for hay, potatoes, and sugar beets, and by $1.43/hr for farm equipment operators/truck drivers. Higher wage rates raise the cost of production and can reduce profitability unless more revenue or other cost savings can be obtained.

Table 1. Mid-range Wages ($/hr) by Crop Activity in North and South-Central ID, 2023 and 2024.

	2023	2024	Change	% Change
North ID				
Grain harvest	19.34	20.27	0.93	4.8%
Hay harvest	19.00	19.00	0	…
South-Central ID				
Irrigation (hay, potatoes, sugar beets)	17.84	18.27	0.43	2.4%
Farm equipment operators/truck drivers	16.84	18.27	1.43	8.5%
Harvest (hay, potatoes, sugar beets)	17.84	18.27	0.43	2.4%

Source: ID Department of Labor.

Profitability Outlook Overview

The profitability outlook for ID crop production in 2024 to mid-August is such that there may be challenges in achieving profitability for production of some crops, while it may be more achievable for others.

Regarding sales prices, onions, barley (malting), and sugar prices have been either higher, especially for onions, or stable for much of 2024 compared to 2023. Prices for wheat, alfalfa hay, and potatoes (open market) have been broadly lower in 2024 than 2023.

For input prices, there is a mixed picture as well. Somewhat lower average prices for fertilizer and fuel in 2024 compared to 2023 are beneficial for having lower production costs, but higher interest payments and labor wage rates can counteract the reduced costs for fertilizer and fuel depending on the crop and management system.

To summarize, for the crops with lower prices in 2024 than 2023, the magnitudes of price declines are larger than the declines in levels of input prices (fertilizer and fuel). Thus, if quantities sold remain the same, then there may likely be lower revenues, higher costs, and lower profitability for some farms. The actual profitability status for crop farms in ID is related to the quantities of crops sold and inputs used. Maintaining good crop quality can help ensure quantities sold remain as high as possible, which is especially important for the crops with lower average prices in 2024 than 2023 (wheat, alfalfa hay, and potatoes (open market)).

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Aphid monitoring in southeast Idaho

2024 Insights

By Kasia Duellman, Extension Specialist – Seed Potatoes, and

Justin Hatch, Extension Educator – Caribou County, University of Idaho

In 2019, a renewed effort to monitor aphids in southeast Idaho was initiated, focusing on the region's seed potato production. This monitoring project supplements four tall, stationary suction traps (**Figure 1**), which were once part of a broader statewide monitoring network that ran from 1985 to 2003. Three of these suction traps are strategically placed in areas where seed potatoes are grown, while the fourth is situated in a commercial production area. In addition to these suction traps, the monitoring network has been expanded to include a multitude of field-based yellow bucket water traps (**Figure 2**). The introduction of these yellow bucket traps has allowed us to refine our monitoring efforts and zoom in on aphid activity at the field level, while the tall suction traps offer a broader regional perspective.

Monitoring aphids serves several important purposes in southeast Idaho. One key objective is to provide early warning to seed potato growers when aphids are in flight, as winged aphids can potentially transmit Potato virus Y (PVY). For seed potatoes to be eligible for re-certification (that is, to be increased again for seed), they must contain no more than 1% PVY. Consequently, seed potato growers are highly motivated to detect aphid flights promptly to safeguard their crops. However, it's important to note that growers don't automatically resort to insecticides, as insecticides alone are not the recommended method for PVY management. PVY is primarily spread by non-potato-colonizing aphids, and dozens of aphid species are capable of transmitting the virus. Moreover, PVY is acquired and transmitted quickly, in a non-persistent, non-circulative manner, which means that insecticides alone are not effective against it. In contrast, another potato virus, Potato leaf roll virus (PLRV), which was a problem in the 1990s, is transmitted by potato-colonizing aphids that take a long time to acquire and transmit the virus (in what is known as a persistent manner), making insecticides more effective in managing PLRV.

Figure 1. Tall, fixed suction trap at the Aberdeen Research & Extension Center in Aberdeen, Idaho. This trap was part of a larger aphid monitoring network that operated statewide from 1985 to 2003.

Managing PVY is a complex endeavor requiring an integrated approach. Growers can employ various strategies, including the use of mineral oils, mulches, border crops and other tools. Our ongoing monitoring efforts aim to shed light on the timing of mineral oil applications and the associated PVY risk based on the number and timing of winged aphids.

In 2024, the count of winged aphids were unusually high early in the season at some locations, and like 2023, a prolonged “flight” was observed in August (**Figure 3**). This prolonged late-season peak in seed potato regions is particularly intriguing because the impact of late-season aphid flights on PVY incidence in daughter tubers in Idaho is not yet fully understood.

The movement of the virus within a plant follows the "sink," where the plant directs all its nutrients. During vegetative growth, the sink is in the foliage, which is why seedborne and early-season infections are often visible in the

Figure 2. Two-gallon yellow bucket water trap. These traps are typically positioned along field edges, ideally in areas with visible soil and weed control. They are filled to the brim with water, a drop of soap is added to break surface tension and prevent aphids from escaping, and a few crystals of copper sulfate inhibit algae growth. The contents are collected weekly and taken to our Idaho Falls lab for aphid counting.

foliage, depending on the virus strain, potato variety, and environmental factors. However, during tuber bulking, the sink shifts to the tuber. Plants that become inoculated with the virus late in the season potentially transfer the PVY particles directly to the tubers, where the plant allocates its energy and nutrients during tuber bulking. Foliar symptoms from such late-season infections would not be visible.

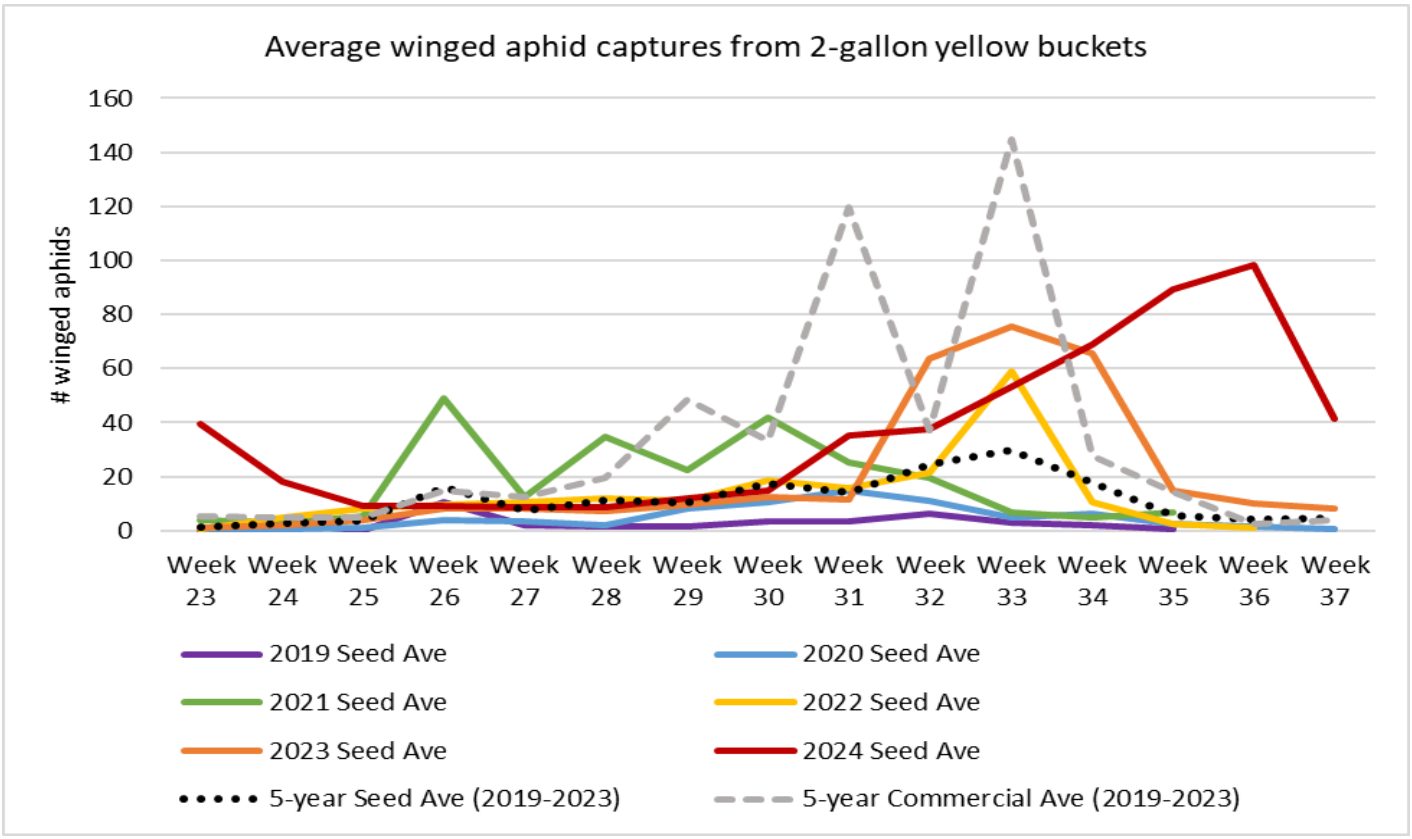

Figure 3. Winged aphid captures by calendar week.

Therefore, the extended late-season flights observed in 2024 may lead to higher-than-expected PVY results in post-harvest tests conducted on seed potatoes. These tests involve collecting a sample of tubers, planting them in a frost-free location (such as Hawaii), and then collecting leaves from each emerged plant for PVY testing in a laboratory. These post-harvest laboratory tests are considerably more reliable in determining PVY incidence compared to in-season visual field evaluations during the growing season.

In this monitoring program, we are also comparing utility of the water bucket traps with the tall suction traps. In 2024, it seems that the bucket traps may be more useful **(Figure 4)** but analysis of many years of data will be needed to support this recommendation.

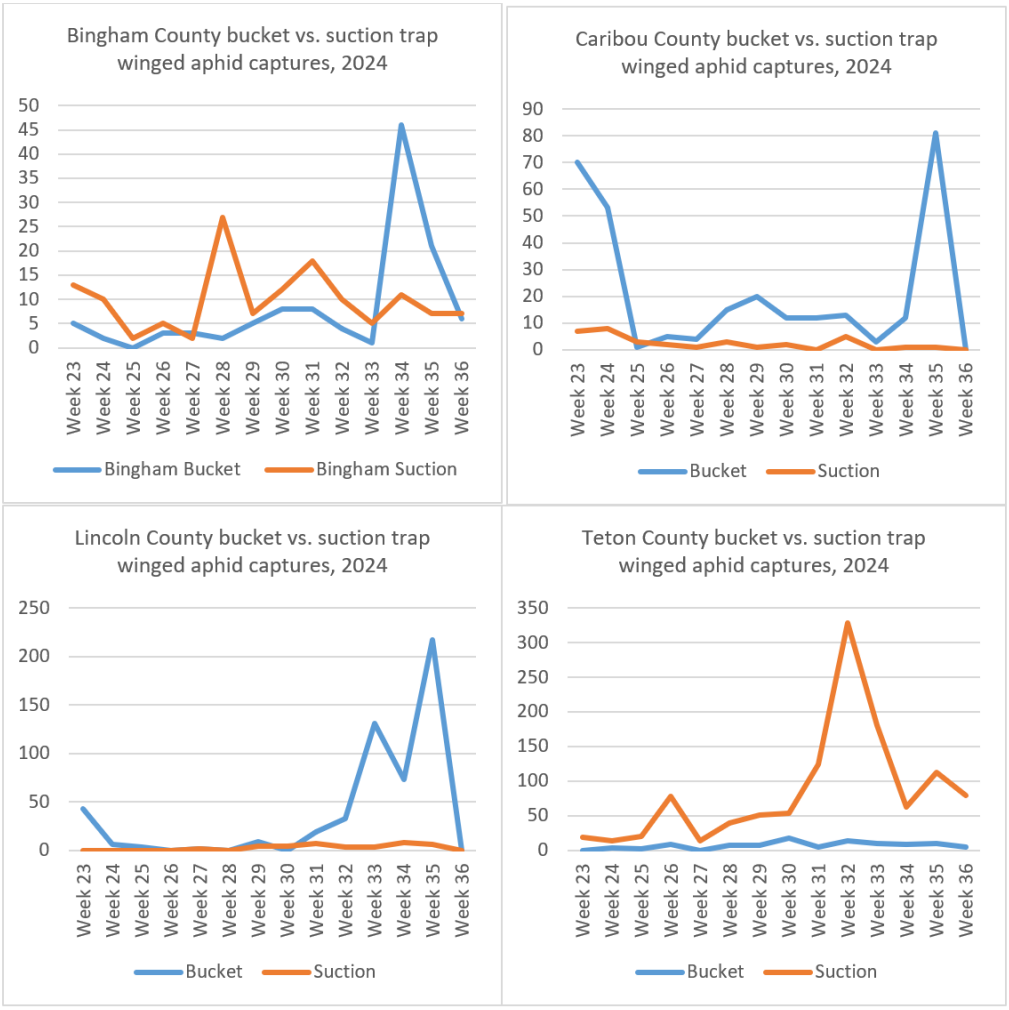

Figure 4. Comparison of two trap types to capture winged aphids. At four sites (Bingham County, Caribou County, Lincoln County, and Teton County), two-gallon yellow buckets filled with water were placed near tall, fixed suction traps. Note that the magnitude of the Y-axis differs for each site.

Our monitoring efforts will continue in 2025, and we encourage seed potato growers interested in aphid monitoring to get in touch with Kasia Duellman via email (kduellman@uidaho.edu) or by phone (208-757-5476). The aphid monitoring team also includes Melinda Lent (melindab@uidaho.edu) and Lindsey McKinney (lfmckinney@uidaho.edu), and our offices and lab are located at the Idaho Falls Research & Extension Center, 1776 Science Center Drive, Suite 205, Idaho Falls, Idaho 83402.

Funding for this project comes from multiples sources, including the Idaho Potato Commission, the Idaho Integrated Pest Management Extension Implementation Program [project award no. 2021-70006-35386] from the USDA National Institute of Food and Agriculture, and the University of Idaho.

AG Talk Report

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2024 Dates and Topics for Ag Talk Tuesday sessions:

Date	Featured topic	Guest Speaker
May 7	Water update Ag outlook	Keith Esplin, Executive Director, Eastern Idaho Water Rights Coalition Josh Huff, Ag West Farm Credit
May 21	Soil Arthropods & Soil Health: Belowground partners in PNW wheat systems	Dane Elmquist, Ph.D., and Dr. Sanford Eigenbrode, Professor, University of Idaho
June 4	Post-harvest weed seed control using light technology	Joan Campbell, Principle Researcher, University of Idaho
June 18	Family farms and corporate farms – what is the Idaho landscape?	Brett Wilder, Area Extension Educator, University of Idaho
July 2	Entomology at the Parma REC	Dr. Armando Falcon-Brindis, Assistant Professor, University of Idaho
July 16	Nematodes Associated with Cereal Crops in Southeast Idaho: Management Strategies Focusing on Resistant Varieties	Dr. Pooria Ensafi, Post-doctoral Fellow, University of Idaho
Aug 6	Annual Alfalfa as a source of nitrogen for sub-sequent small grain crops	Reed Findlay, Dr. Jared Spackman, Joseph Sagers, Justin Hatch, Tom Jacobsen, Jared Gibbons; University of Idaho faculty
Aug 20	Idaho Crop Profitability Outlook	Dr. Pat Hatzenbuehler, Ph.D., Associate Professor, University of Idaho

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