

DECISION TREE FOR ESTIMATING LONG-TERM IDAHO HAY PRICES USING IDAHO MILK PRICES

This four-step procedure provides the basics for estimating long-term Idaho hay prices using Idaho milk prices; a calculation example follows in the “When Stocks-To-Use Ratios and Exports Are ‘Normal’” section.

Step 1. Record the current hay price (e.g., from USDA-AMS).

Step 2. Check Western region hay stocks-to-use levels and Idaho hay export levels. If hay stocks-to-use levels are substantially “lower-than-normal” or Idaho hay exports are “greater-than-normal,” do not proceed to step 3. Rather, return to step 1 and monitor hay prices often, since these conditions are associated with greater volatility. If hay stocks-to-use levels and exports are near normal levels, proceed to step 3.

Step 3. Get the current and forecast milk price (e.g., from USDA-WASDE) and calculate the difference between the two for the expected change in milk price:

$$\text{Milk price difference} = (\text{forecast price} - \text{current price})$$

Step 4. Make a long-term hay price forecast:

$$\text{Expected hay price} = (\text{current hay price} + (\$7 \times \text{milk price difference}))$$

When Stocks-To-Use Ratios and Exports Are “Normal”

Current hay price (AMS, May 21, 2021): \$160/ton
Current milk price (WASDE, May 12, 2021): \$18.95/cwt
Forecast Q4 2021 milk price (WASDE, May 12, 2021):
\$19.95/cwt
Milk price difference: \$1.00/cwt

Expected hay price = $160 + (7 \times 1.00) = \mathbf{\$166-\$168/ton}$

Calculating the Stocks-To-Use Ratio and Exports for 2021

Western region stocks levels (USDA Crop Production report, May 12, 2021): 2.99 million tons

This figure is lower than 2020’s (3.75 million tons) and the average for 2002–20 (3.71 million tons). As a result, Western region hay stocks may be low for 2021. We will know more regarding 2021 consumption/use when the USDA Crop Production report is released in January 2022.

US Department of Commerce data show that exports for 2021 (as of March 2021) were over 18,000 tons. If that pace continues for all of 2021, exports will be over 72,000 tons, a higher figure than the average for 2002–20 of 60,000 tons, but by less than one standard deviation (56,000 tons) (Figure 2). Thus, both lower stocks and greater exports point

to tighter hay markets in 2021 relative to 2020, conditional on consumption/use and production during the remainder of 2021.

Given these conditions, regularly (e.g., weekly) checking hay prices (repeating step 1) is recommended, since volatility is expected for 2021. Checking hay prices more often is recommended until stocks-to-use and export volumes return to normal.

Extra Advice

It may be helpful to create an Excel spreadsheet to keep track of the data gathered when moving through the steps over time. Keeping a spreadsheet and occasionally adjusting the formula, such as changing the range of hay-price changes to milk-price changes to greater or less than \$6–\$8/ton, to reflect the information gathered and to make forecasts, can help reduce the forecast-error incidence over time.

Additional Resources

A link to two spreadsheets, 1) Western region hay stocks-to-use values and ratios and 2) Idaho hay export values, will be hosted on the University of Idaho AgBiz website (<https://www.uidaho.edu/cals/idaho-agbiz>) to provide easier access to these data.