

### AMINO ACIDS

Lysine and threonine price and supply trends remain stable with good availability of both domestic and non-domestic brands. A major Asian producer is planning to increase production capacity during 2024 which could pressure prices lower in the future.

Tryptophan supply is slowly improving. Although supply allocation continues in December the hope is most allocations will be lifted beginning in January. Given the tight supply prices have remained steady.

Methionine is under pressure from producers to increase price basis lower margins. Buyers are reluctant to support higher prices given continued sluggish demand. Experts predict a short-term price increase into Q1.

INGREDIENT	Price Trend: 1 Month	Price Trend: 3 Month	Supply Availability
LYSINE	→	→↓	GOOD
THREONINE	→	→↓	GOOD
METHIONINE	→↑	→	GOOD
TRYPTOPHAN	→	→	UNDER SUPPLY ALLOCATION
VALINE	↓	→↓	GOOD

### DAIRY POWDERS

Overall, dairy market prices have seen modest strength over the past 30 days. Whey and lactose spot prices have increased driven by increased buying activity from both domestic and international markets. Combined with a recent tighter supply of milk, dry dairy powders have tightened putting pressure on prices.

Additionally, whey permeate spot prices have increased a few cents following a similar trend. With most of the volume contracted during December for the upcoming quarter firm prices won't be known until closer to the end of the month. Expectations are firm tones will be the trend heading into Q1.

INGREDIENT	Price Trend: 1 Month	Price Trend: 3 Month	Supply Availability
WHEY PERMEATE	→↑	↑	GOOD
LACTOSE	↑	→↑	GOOD
WHEY	↑	→↑	GOOD

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## VITAMINS

Vitamin trends remain steady to weak overall with supply outpacing demand. With buyers reluctant to take long-term positions suppliers have become aggressive in offering lower prices in order to move products. Expect this trend to continue into Q1.

INGREDIENT	Price Trend: 1 Month	Price Trend: 3 Month	Supply Availability
VITAMIN E	→↓	→	GOOD
VITAMIN A	→↓	→	GOOD
CAL PAN	↓	→	GOOD
NIACIN	→↓	→	GOOD
D3 500	→↓	→	GOOD

## MINERALS

Trace mineral markets, particularly copper and zinc, appear to have met the market floor recently. Buying activity for the raw metals recently increased, especially in the consumer segments. This activity has allowed prices to stabilize. The future trend is still unclear but expect prices to remain variable.

Monocalcium phosphate prices remain unchanged until the end of the calendar quarter. Expect stable to lower prices heading in Q1.

INGREDIENT	Price Trend: 1 Month	Price Trend: 3 Month	Supply Availability
MONOCALCIUM PHOSPHATE	→	→↓	GOOD
COPPER SULFATE	→	→	GOOD
ZINC SULFATE /OXIDE	→	→	GOOD