

# METHIONINE IS ESSENTIAL FOR OPTIMAL PERFORMANCE

Methionine is one of the essential amino acids (AA) supplemented in the feeds to achieve optimum animal performance. Methionine is the sulfur - containing proteinogenic AA, the first limiting AA for poultry and fish, and the second limiting AA for swine.

Naturally-occurring amino acids are all in the L-form (Wikipedia, chirality)

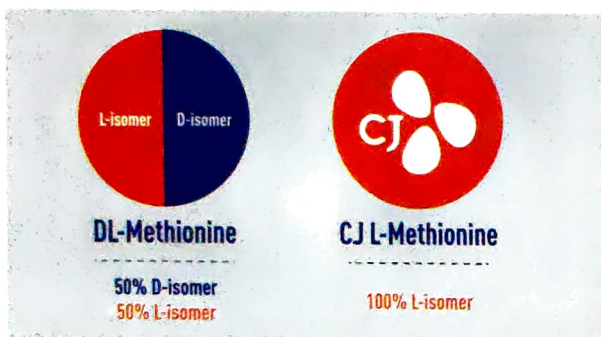
The L-isomer is the naturally-occurring form of methionine.

According to Section 172.320 of FDA's code of federal regulations title 21,

Only L-Met (Not DL-Met) is suitable as a food additive for infants.

## CJ L-Methionine


CONTAINS ONLY THE BIOLOGICALLY-ACTIVE L-FORM OF METHIONINE AND IS THE ONLY L-METHIONINE AVAILABLE FOR FEED MANUFACTURERS.



As clear as day and night

- DL-Met : requires energy to transform the D-into the L-isomer- for utilization
  - L-Met : No energy is wasted
- **Better animal performance**

Through a series of experimental trials in several internationally-recognized research institutions.

 **L-Met Pro** is designed to provide additional **Profits** to the customers.



### Chemical Specification

L-Methionine, % (Purity, Dry Base)	Min. 90	HPLC analysis, AOAC 999.13
Moisture, %	Max.1.5	105°C for 4 hours
Crude Ash, %	Max.1.0	550°C for 3-4 hours

### Recommended matrix values

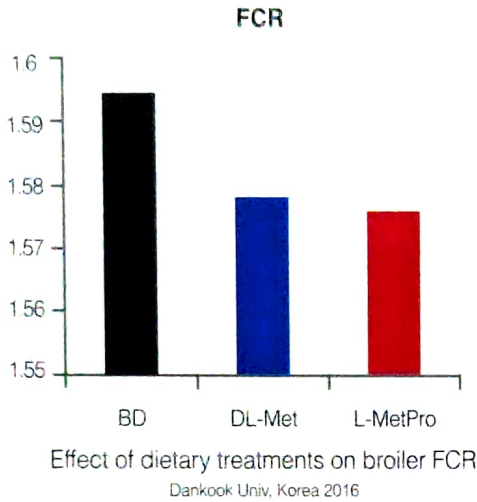
Crude Protein (CP), %	64.15	Dumas method (N x 6.25)
	<b>Total</b>	<b>Available (Recommend)</b>
Methionine, %	90.00	99.00
Methionine + Cysteine, %	90.00	99.00

### Metabolizable Energy

Pig, kcal / Kg	5,111	Estimated
Pig, MJ / Kg	21.4	Estimated
Poultry, kcal / Kg	4,854	Estimated
Poultry, MJ / Kg	20.03	Estimated

CJ L-MetPro has shown similar growth performance to DL-Met

## Broiler Trial (Dankook Univ, Korea) on Feed Conversion Ratio (FCR)



Chemical characteristics		
Chemical characteristics	Guarantee	Average
<b>L-Methionine (Purity, Dry base), %</b>	>90	<b>91.52</b>
<b>Moisture, %</b>	<1.5	<b>0.72</b>
<b>Crude Ash, %</b>	<1.0	<b>0.47</b>
<b>Ion, ppm</b>		
Na <sup>+</sup>		320
Ca <sup>2+</sup>		68
Mg <sup>2+</sup>		219
PO <sub>4</sub> <sup>2-</sup>		927
<b>Hazardous substance,</b>		
E.Coli / Coliform Bacteria, CFU/g		N.D.
BSE		N.D.
<b>Heavy metal, ppm</b>		
Pb	<5.0	<0.00
Cd	<0.5	<0.000
As	<2.0	<0.01
Hg	<0.1	<0.000
<b>Mycotoxin</b>		
Aflatoxin B1	N.D.	N.D.
Ochratoxin A	N.D.	N.D.

Trial Info

- 510 (1d old) Ross 308 male broiler chicks
- Criteria : FCR
- Starter (0-10 days), Grower (11-24 days), Finisher (25 days)

Conclusion

- CJ L-MetPro has shown similar growth performance compared to DL-Met.
- **L-MetPro can replace DL-Met with the same dosage.**

Additional Info

- [Does not constitute any commercial guarantee]
- CJ L-MetPro contains additional ions such as Na<sup>+</sup>, Ca<sup>2+</sup>, Mg<sup>2+</sup>, PO<sub>4</sub><sup>2-</sup>
- Hazardous substances have not been detected

### Sales network

Headquarters	Seoul	Korea	+82-2-6740-3434
Europe	Frankfurt	Germany	+49-6196-5901-15
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South America	Sao Paulo	Brazil	+55-11-3717-8704
Asia	Beijing Shanghai Taipei Bangkok Ho Chi Minh Mumbai Jakarta Manila Kuala Lumpur	China China Taiwan Thailand Vietnam India Indonesia Philippines Malaysia	+86-10-5639-6256 +86-21-5208-293 +886-02-2736-7042 +66-2-611-2571 +84-8-3827-2308 +91-22-2757-7902/5 +62 21 5299 5051 +63 2 638 7937 +60 3 7832 0687