HAN FEI

Pepaid™

THE NEO GENERATION OF AMINO ACID FERTILIZER

New Ecology
Balancing nature, soil, and growth

New Efficiency
Maximizing uptake, minimizing waste

New Origin
Derived from next-generation peptides

WHO WE ARE



HANFEI Biotech

HANFEI Biotech Co., Ltd. (Jiangxi Hanfei Biotechnology Co., Ltd.) started its business as a collagen peptide manufacturer based in Wannan Industrial Park, Shangrao, Jiangxi Province, China.

Founded in 2005, HANFEI has specialized in the production of hydrolyzed collagen peptides derived from bovine and fish sources, meeting the growing demand for high-quality, traceable protein ingredients across global markets.

With an annual production capacity of 15,000 tons, HANFEI operates an advanced automated processing system that ensures strict water-quality control and product consistency.

The company follows a robust quality management system, overseeing every stage—from raw material selection to production, testing, and logistics—to ensure safety, purity, and reliable performance beyond industry standards.

Driven by sustainability, technology, and innovation, HANFEI continues to expand its expertise from human nutrition into agricultural biostimulant applications, offering eco-friendly solutions for global customers seeking performance and value.



Pepaid™ Amino Acid Biostimulants

Pepaid™, a sub-brand of HANFEI Biotech, represents our commitment to sustainable agriculture and biological innovation.

Leveraging our long-standing expertise in protein hydrolysis, we develop amino acid–based biostimulants that enhance plant growth, soil health, and overall crop resilience.

Our products are designed to:

- Stimulate crop growth and improve nutrient absorption efficiency.
- Enhance soil vitality through organic amino acid and peptide enrichment.
- Support sustainable and organic farming practices worldwide.

From B2B bulk supply to OEM formulation, Pepaid™ provides reliable solutions for distributors, agri-input brands, and growers seeking premium-quality, cost-efficient amino acid biostimulants.

DIFFERENT

The Next Generation of Amino Acid Fertilizers

NEO-Growth Bioactivation

Synergistic amino acids and peptides activate natural growth signals, enhancing root strength, stress resistance, and overall crop performance.

NEO-Sustainability Model

Made from bio-based, biodegradable ingredients, Pepaid™ supports organic and regenerative farming while protecting soil and the environment.



New Ecology • New Efficiency • New Origin



EA Series

Animal-derived enzymatic polypeptides

Process: Enzymatic hydrolysis (retains bioactive peptides)

Organic nitrogen: ~15%

Form: Powder





EA80-LMW | 0.7-0.9 kDa

Mode of Action

- Active oligopeptides (5–10 amino acids) dominate
- Strong activation of plant receptors
- Stress signaling: activates defense and cold/drought genes
- Root development: promotes root hair growth

Usage Guidance

- Preventive use before stress events (cold waves, disease-prone periods)

EA80 | 6-7 kDa

Mode of Action

- Large peptides for slow nutrient release
- Improves rhizosphere microbial balance
- Strengthens cell structure (rich in proline & glycine)

Usage Guidance

- Stress resistance: drought, salinity
- Promotes root health and improves nutrient use efficiency

EA80-ULMW | 0.5-0.7 kDa

Mode of Action

- Active uptake possible via PEPT/PTR transporters
- Rapid stress relief (12–24 h)
- Acts as signaling molecules

Usage Guidance

- Drought, salinity, heat, agrochemical stress management
- Rapid nitrogen supply in seedling stage, transplanting and post-stress recovery

TYPE	EA80	EA80-LMW	EA80-uLMW
ITEM	**SPECIFICATION**		
Solubility	Transparent in 5% a.q solution		
Appearance	Yellow or brownish yellow powder		
PH	4~7		
Total Nitrogen, %	⩾ 13.0	⩾ 13.5	⩾ 13.5
α-amino nitrogen, %	⩾ 1.0	⩾ 2	⩾ 4
Ash, %	⩽ 10	⩽ 7	⩽ 7
Average M.W	6000~7000	700~900	500~700
Water, %	⩽ 10		
Heavy Metals, ppm	20 max		
Amino Acid Composition			
Asp	4.58	7.18	6.38
Glu	9.33	12.8	11.38
Ser	0.94	2.89	2.57
Arg	5.63	2.49	2.21
Gly	24.28	13.7	24.68
Thr	0.45	3.58	3.18
Pro	13.75	8.68	7.72
Ala	9.24	6.61	5.88
Val	2.15	3.35	2.98
Met	0.74	1.5	1.33
Cys	/	0.55	0.49
Ile	1.28	2.73	2.43
Leu	2.76	4.55	4.05
Phe	1.84	2.23	1.98
His	0.53	1.46	1.3
Lys	3.14	5.4	4.8
Tyr	0.38	1.38	1.23
Total Amino Acid, g/L	81.04	81.08	84.6

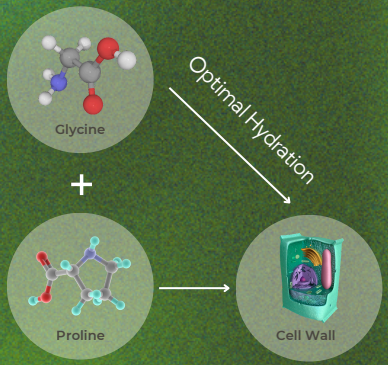


FORTIFIED

CELL WALLS

MINIMIZED MOISTURE

LOSS



HA Series

Animal-derived free amino acids



Sourced from hydrolyzed animal protein, HA Series boasts a significantly higher concentration of free amino acids compared to the EA Series. This premium biostimulant is designed for agriculture to:

- **Enhance Crop Resilience:** Improve plant tolerance to environmental stress and overall crop quality.
- **Boost Nutrient Uptake:** Act as an effective chelating agent to facilitate the absorption of vital nutrients.



TYPE	HA80	HA40
ITEM	SPECIFICATION	
Solubility	Transparent in 5% a.q solution	
Appearance	Yellow or brownish yellow powder	
PH	3.5 – 5.5	4~7
Total Free Amino Acid, %	⩾ 75	⩾ 40
Total Nitrogen, %	⩾ 13.5	⩾ 17.5
Water, %	⩽ 5	⩽ 5
Chlorides, %	⩽ 3	⩽ 30

HA80 | FAA 75%

Chloride ≤3%

- High-purity FAA → Ideal for foliar sprays (quick N supplementation, low burn risk).
- E.g.: Enhances fruit coloring, thickens tea leaves pre-harvest.

HA40 | FAA 40%

Chloride 30%

Avoid in saline soils! Specialized uses:

- Chloride-loving crops: Coconut, oil palm **(Cl^- aids photosynthesis).**
- High-rainfall regions: Soil drenching with **Cl^- dilution (e.g., rice paddies).**



TYPE	HA20-LLC	HA20L
ITEM	**SPECIFICATION**	
Solubility	100% soluble in 5% a.q. solution	
Appearance	Red transparent liquid	reddish brown liquid
PH	4.5 – 5.5	4.0 – 6.0
Total Amino Acid, %	⩾ 22	⩾18
Total Nitrogen, %	⩾ 3.5	⩾8.50
Amino Acid Nitrogen, %	⩾ 3.0	⩾3.0
Chlorides, %	⩽ 1.5	⩽ 15
Specific Gravity	⩾ 1.11	⩾1.15
Amino acid composition		
L-Aspartate, g/L	18.98	19.08
L-Threonine, g/L	21.12	21.16
L-Serine, g/L	31.67	31.85
L-Glutamic Acid, g/L	45.54	45.63
Gly, g/L	11.72	11.64
L-Alanine, g/L	10.81	10.72
L-Cystine, g/L	8.09	8.04
L-Valine, g/L	13.1	12.96
L-Methionine, g/L	2.23	2.18
L-Isoleucine, g/L	2.09	5.03
L-Leucine, g/L	11.21	11.16
L-Tyrosine, g/L	1.85	1.94
L-Phenylalanine, g/L	7.59	7.62
Lysine, g/L	9.42	9.38
L-Histidine, g/L	3.71	3.73
L-Arginine, g/L	25.61	25.67
L-Proline, g/L	22.57	22.66
Total Amino Acid, g/L	247	250
Total Nitrogen, %	3.84	9.02



HA20L

Chloride 15%

> Avoid in saline-alkaline soils.

> Use For:
- ☑ Chloride-loving crops (e.g., Coconut, Palm)
- ☑ Root irrigation in rainy regions (e.g., Southern rice)



HA20-LLC

Chloride 1.5%

> Low-Chloride Liquid

> A safe alternative to urea, preventing root burn.

> Ideal for Drip Irrigation

HA Series

(FAA) – Direct Nutrition Supply

Free Amino Acids (FAA) provide direct and immediate nutrition for crops. They are rapidly absorbed to fuel protein synthesis, enabling quick recovery from stress and deficiency. Additionally, they perform osmotic regulation to enhance short-term tolerance against drought and salinity.

- Direct Uptake & Synthesis
- Rapid Recovery
- Osmotic Protection



EP Series

Plant derived protein hydrolysates

EP Series

What is EP Series

- Derived from enzymatically hydrolyzed plant proteins
- Acts as a biostimulant to enhance nutrient uptake, stress tolerance, and crop quality
- Functions as a chelator for K, Ca, and Mg, improving nutrient absorption and translocation
- Supports sustainable and efficient crop growth in challenging environments

Process

- Fermentation (FP)
- Enzymatic Hydrolysis (EP)

Organic Nitrogen

- 8%–13.6%

Benfits

Free from Animal Pathogens

- Derived entirely from plants, the EP Series is free from animal pathogens and fully compliant with organic-farming standards.

Metabolic Efficiency

- Fortified with natural vitamins and organic acids, it enhances plant metabolism, accelerates nutrient uptake, and strengthens vitality under stress.

EP60 | Corn Enzymatic Hydrolysate

High Glutamic + **Aspartic Acids** → Stimulate nitrogen metabolism → Chlorophyll synthesis → **Greener leaves, stronger photosynthesis**

Medium-Molecular Peptides → Promote root development under saline-alkali stress → **Better emergence, healthier root system**

TYPE	EP60
ITEM	SPECIFICATION
Appearance	Yellow or brownish yellow powder
pH	3.5-5.5
Total Nitrogen, %	⩾ 8.5
α-amino nitrogen, %	⩾ 1.5
Loss on drying, %	⩽ 10
Ash, %	⩽ 15



EP60P | Soy Protein Enzymatic Hydrolysate

Isoflavones + Arginine → Root Growth & Stress Defense

Root Stimulation

- Soy isoflavones combined with arginine act as auxin-like stimulants, promoting lateral root development and enhancing root vitality.

Stress Defense:

- This synergy helps mitigate oxidative stress caused by drought and UV exposure, improving overall plant resilience.

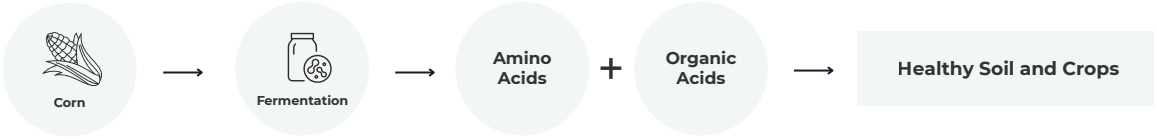
Tryptophan Retention — Natural Growth Regulator Precursor

- Rich in tryptophan, a key auxin biosynthesis precursor, the formulation supports balanced growth and active metabolism under various conditions.

TYPE	EP60P
ITEM	**SPECIFICATION**
Solubility	Transparent in 5% a.q solution
Appearance	Yellow or brownish yellow powder
Ash,%	⩽ 15
Loss on drying,%	⩽ 10
PH	4.5-7.5
Total Nitrogen,%	⩾ 8.5
α-amino nitrogen, %	⩾ 1.5
Total Plate Count	⩽50000 cfu/g
Coliform bacteria	⩽0.3 MPN/G
Pathogen	Negative
Staphyloccocus aureus	Negative
E.Coli	Negative



FP90 | Corn Fermentation



Fermentation Profile

- The FP90 Series is produced through natural corn fermentation, generating a balanced mix of free amino acids and organic acids (mainly acetic acid and lactic acid).
- These components help regulate soil pH and mobilize phosphorus and potassium, improving nutrient availability.

High Organic Nitrogen (13.6%)

- Its high organic nitrogen content allows FP90 to partially replace fish protein hydrolysates, offering a cost-effective and sustainable alternative for agricultural use.

TYPE	FP90
ITEM	**SPECIFICATION**
Solubility	100% soluble
Appearance	Yellow powder
pH	4~6
Free Amino Acid, %	⩾ 90
Total Nitrogen, %	⩾ 14
P2O2 content,%	---
K2O content,%	---
Protein content,%	⩾ 85
Water insoluble content,%	⩽ 0.1
Moisture (H2O),%	⩽ 3.0





Product Strategic Positioning

Series	Optimized Core Value	Best Application	Key Differentiation
EA Series	Stress Signal Activation for Resilience	For high-value crops under stress (heat, drought, salinity)	Natural alternative to seaweed and chitosan biostimulants
HA Series	Fast-Acting Nitrogen Nutrition	For quick foliar feeding and visible recovery	Faster nitrogen uptake than urea or ammonium sulfate
Plant-Based Series	Growth Enhancement & Soil Health	For organic farming, root vigor & soil improvement	Plant-based substitute for fish protein or humic fertilizers

Technical Insights | Product Focus

EA Series

Stress Defense Innovation

Highlight the unique ultra-low molecular weight (uLMW) peptides that act like a "plant vaccine," helping crops activate internal defense signals and enhance resilience under stress.

HA Series

Smart Nitrogen Efficiency

Emphasize low-chloride grades (HA80 / HA20L-LLC) for safer use on sensitive crops. For higher-chloride options, specify recommended usage limits to ensure optimal safety and efficiency.

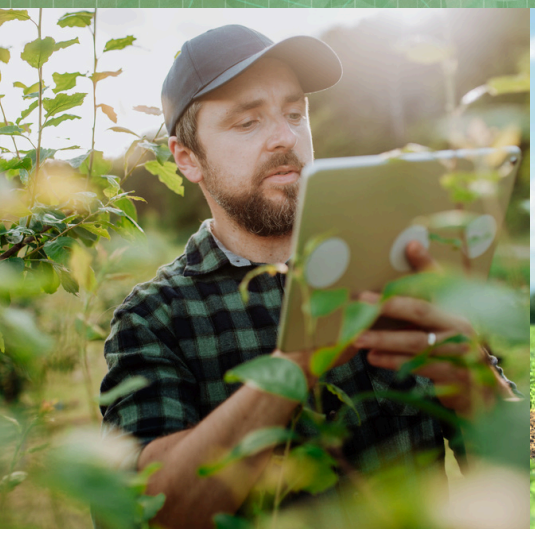
Plant-Based Series

Versatile Growth & Soil Support

Position EP60P as a solution for flowering and fruit set enhancement, and FP90 as a cost-effective soil revitalizer that supports long-term soil health and fertility.

NEO Agriculture

The Future Starts with Pepaid™.







HAN FEI

Pepaid™

For More Information

+ 86 18017401164

No.68 Wansheng Rd., Wannian County Shangrao City, Jiangxi Province, China

www.hfcollagen.com

agro@hfcollagen.com