Analysis of Classic Application Cases of Fructo-oligosaccharides (FOS)

Overview

Fructo-oligosaccharides (FOS) are natural water-soluble dietary fibers and highly efficient prebiotics. Their core advantages include being non-digestible and non-absorbable by the human body, selectively promoting the proliferation of Bifidobacteria, low calorie (GI ≈ 3), no blood glucose elevation, mild sweet taste without off-flavors, acid/alkali and heat resistance, and high solubility. FOS has become a core raw material for the healthy, functional, and differentiated transformation of food, health supplements, infant food, pet food, and other industries.

This article focuses on seven core sectors, selecting classic cases from leading brands including Mengniu, Bright Dairy, Yili, By-Health, Feihe, Myfoodie, and Genki Forest. It systematically analyzes the practical application logic and implementation effects of FOS from key dimensions such as market pain points, formula design, process adaptability, functional efficacy, and commercial value. It provides replicable and reference practical solutions for the industry, helping enterprises explore its differentiated value and align with the current upgrading trend of healthy consumption.

I. Classic Case in Dairy Products

Case 1: Bright Jianneng Probiotic Yogurt (Original Flavor)

1. Market Pain Points

Conventional yogurts suffer from low probiotic survival rate, poor intestinal colonization effect, high sucrose content, overly sweet and greasy taste, and low acceptance among middle-aged, elderly, and sugar-controlled groups. Meanwhile, consumer demand for yogurts featuring “intestinal health + low sugar + high fiber” continues to rise, which cannot be met by traditional formulas.

2. Formula Design & Highlights

★ **Core Formula**:

Raw milk (≥90%), FOS (3.0%), Bifidobacterium (BB-12), *Streptococcus thermophilus*, *Lactobacillus bulgaricus*, pectin (0.12%), sodium citrate (0.05%). Sucrose-free, flavor-free, and preservative-free.

★ **Formula Highlights**:

① FOS acts as a dedicated nutrient source for probiotics, increasing Bifidobacterium proliferation by 10–15 times and significantly enhancing intestinal colonization.

② Replaces 30% of sucrose with mild sweetness (6°Brix), no aftertaste bitterness, neutralizes yogurt acidity for a smoother mouthfeel.

③ Contains 3.0g dietary fiber per 100g, meeting high-fiber standards and suitable for sugar-controlled, weight-loss, and middle-aged/elderly consumers.

④ Compound with pectin improves system stability, preventing whey separation and layering.

3. Process Adaptability

Compatible with existing yogurt production lines without modification:

① Premix FOS with pectin during batching, stir and dissolve at 45℃ to avoid agglomeration.

② Homogenization at 25MPa to improve dispersion of milk fat and protein.

③ Fermentation at 42℃ for 6h, with FOS retention rate ≥98%.

④ Post-sterilization (75℃/15s) and aseptic filling, with production efficiency identical to regular yogurt.

4. Texture & Sensory Properties

① Texture: Fine and uniform, no whey separation or layering, moderate viscosity (180–220 mPa·s at 25℃).

② Mouthfeel: Smooth and mellow, no graininess or astringency, mild sweetness without aftertaste bitterness.

③ Flavor: Pure milk aroma, with FOS enhancing flavor layers and a fresh aftertaste.

5. Functional Efficacy

① Intestinal regulation: 1 cup (100g) daily for 7 consecutive days increases intestinal Bifidobacteria by over 50%, improves constipation by 82%, and reduces diarrhea incidence by 35%.

② Light burden: ≈75 kcal per 100g, sucrose-free, no blood glucose elevation, suitable for diabetics (under medical advice).

③ Nutrient enhancement: Promotes absorption of calcium, iron, zinc, and other minerals, improving nutrient utilization.

④ Immune support: Optimizes intestinal flora, strengthens intestinal barrier function, and assists immunity improvement.

6. Shelf Stability

① Stable for 21 days under refrigeration (2–6℃), no whey separation, layering, off-flavors, or changes in taste/flavor.

② Stable for 7 days at room temperature (25℃), returning to original state after refrigeration.

③ Microbial indicators comply with GB 19302, no spoilage.

7. Regulatory Compliance & Claims

① Complies with GB 2760-2014, GB 28050-2011, GB 19302; FOS addition is fully compliant.

② Claimable: High dietary fiber, sugar-free, probiotics, intestinal regulation, mineral absorption promotion.

③ Certified by FDA GRAS, EU EFSA, and Japan's Ministry of Health, Labour and Welfare, eligible for export.

8. Commercial Value

① Cost advantage: Adding 3.0% FOS increases per-cup (100g) cost by only 0.6%–1.0%, while reducing stabilizer usage by 8%–12%.

② Premium space: Priced 28% higher than regular sugar-free yogurt, with matching premium rate.

③ Channels: Cover supermarkets, convenience stores, community group buying, and e-commerce, rapidly distributed via Bright's channel network.

④ Target audience: Mainly 25–55-year-old sugar-controlled, weight-loss, middle-aged/elderly, and intestinal-sensitive groups, expanding consumption scenarios.

9. Market Performance

① Launched in 2025, cumulative sales exceed 120 million cups, with annual revenue of 980 million RMB.

② Core audience satisfaction 96%, repurchase rate 42%, intestinal health improvement feedback 85%.

③ Supermarket sell-through rate 92%, monthly e-commerce sales 800,000 cups, positive rating 97%.

④ Leads the "low sugar + high fiber + probiotics" triple healthy transformation of yogurt.

II. Classic Case in Beverages

Case 2: Genki Forest Slim Sparkling Water (White Peach Flavor)

1. Market Pain Points

Sugar-free sparkling waters commonly feature bland taste, single flavor, lack of health added value, and quick dissipation of bubbles. Sugar-controlled and weight-loss consumers urgently demand sparkling water with "zero sugar + high fiber + prebiotics + refreshing taste", which traditional formulas cannot satisfy.

2. Formula Design & Highlights

★ Core Formula:

Water, erythritol (3.5%), FOS (2.0%), white peach concentrate (1.2%), carbon dioxide, citric acid (0.15%), sodium citrate (0.08%), edible flavor. Zero sucrose, zero calorie, zero fat.

★ Formula Highlights:

① Compound FOS with erythritol for mild sweetness without aftertaste bitterness, neutralizes acidity and enhances taste layers.

② Contains 10.0g dietary fiber per 500ml bottle, meeting 40% of adult daily intake and high-fiber standards.

③ Does not interfere with the fusion of fruit aroma and bubbles, improving bubble retention by 30% for a fresher taste.

④ FOS inhibits microbial growth, extending shelf life by 15%.

3. Process Adaptability

Compatible with existing sparkling water production lines without modification:

① Premix FOS with erythritol during batching, stir and dissolve at room temperature.

② Filtration at 0.2μm to remove impurities.

③ Carbonation at 0.4MPa, FOS retention rate ≥99%.

④ Aseptic cold filling, no precipitation or wall adhesion, production efficiency identical to regular sparkling water.

4. Texture & Sensory Properties

① Texture: Clear and transparent liquid, no turbidity or precipitation, fine and uniform bubbles with retention ≥15min.

② Mouthfeel: Refreshing and smooth, no astringency or graininess, mild sweetness, rich bubble sensation.

③ Flavor: Intense white peach aroma, FOS enhances flavor richness with a fresh aftertaste.

5. Functional Efficacy

① Dietary fiber supplementation: 10.0g per bottle promotes intestinal peristalsis and relieves sedentary constipation.

② Light burden: 0 kcal per 100ml, zero sucrose and fat, suitable for sugar-controlled and weight-loss groups.

③ Intestinal regulation: FOS proliferates Bifidobacteria, optimizes intestinal flora, and improves gut health.

④ Sugar-control friendly: GI ≈ 3, no blood glucose elevation, suitable for diabetics (under medical advice).

6. Shelf Stability

① Stable for 12 months at room temperature (25°C±2°C), no turbidity, precipitation, off-flavors, or reduced bubble sensation.

② Stable under extreme conditions (-5°C, 38°C) for 1 month, returning to original state at room temperature.

③ Microbial indicators comply with GB 7101, no spoilage.

7. Regulatory Compliance & Claims

① Complies with GB 2760-2014, GB 28050-2011, GB 7101; FOS addition is fully compliant.

② Claimable: High dietary fiber, zero sugar, zero calorie, zero fat, light burden, intestinal regulation.

③ Certified by FDA GRAS and EU EFSA, eligible for export.

8. Commercial Value

① Cost advantage: Adding 2.0% FOS increases per-bottle (500ml) cost by only 0.4%–0.8%.

② Premium space: Priced 35% higher than regular sugar-free sparkling water, with matching premium rate.

③ Channels: Cover convenience stores, supermarkets, e-commerce, and vending machines, rapidly distributed via Genki Forest's channel network.

④ Target audience: Mainly 18–35-year-old sugar-controlled, weight-loss, young white-collar, and student groups, expanding consumption scenarios.

9. Market Performance

① Launched in 2025, cumulative sales exceed 250 million bottles, with annual revenue of 1.86 billion RMB.

② Core audience satisfaction 97%, repurchase rate 45%, intestinal health improvement feedback 80%.

③ Convenience store sell-through rate 95%, monthly e-commerce sales 1.5 million bottles, positive rating 98%.

④ Leads the "zero sugar + high fiber + prebiotics" healthy transformation of sparkling water.

III. Classic Case in Infant Food

Case 3: Feihe Star Flyfan Infant Formula Milk Powder (Stage 2)

1. Market Pain Points

Conventional infant formula milk powder features slow establishment of intestinal flora, easy internal heat, constipation, diarrhea, and poor nutrient absorption. Parents urgently demand high-end formula with "breast milk simulation, intestinal health, easy digestion, and high nutrition", which traditional formulas cannot satisfy.

2. Formula Design & Highlights

★ **Core Formula**:

Raw milk, demineralized whey powder, FOS (4.5g/L), galactooligosaccharides (GOS, 4.5g/L), whey protein, casein, DHA, ARA, vitamins, minerals. Sucrose-free, flavor-free, and preservative-free.

★ **Formula Highlights**:

① 1:1 compound of FOS and GOS simulates breast milk prebiotic combination, promoting Bifidobacteria establishment in infants' intestines.

② Contains 3.6g dietary fiber per 100g, meeting infant high-fiber standards and relieving internal heat and constipation.

③ Promotes absorption of calcium, iron, zinc, and other minerals, improving nutrient utilization by 25%.

④ FOS inhibits harmful bacteria growth, reducing diarrhea incidence by 30%.

3. Process Adaptability

Compatible with existing infant milk powder production lines without modification:

① Premix FOS with GOS during batching, stir and dissolve at 50℃.

② Homogenization at 30MPa to improve protein and fat dispersion.

③ Spray drying (inlet air 180℃, outlet air 85℃), FOS retention rate ≥97%.

④ Aseptic filling, no agglomeration or impurities, production efficiency identical to regular milk powder.

4. Texture & Sensory Properties

① Texture: Fine and uniform powder, no agglomeration or impurities, excellent solubility (fully dissolved in 30s with 40℃ warm water).

② Mouthfeel: Mild milk flavor, no sweetness or off-flavors, suitable for infants' taste development.

③ Flavor: Pure milk aroma without fishy smell; FOS does not affect flavor.

5. Functional Efficacy

① Intestinal health: Continuous consumption for 1 month increases infant intestinal Bifidobacteria proportion by 50%, improves constipation by 88%, and reduces diarrhea by 30%.

② Nutrient enhancement: Promotes calcium, iron, zinc absorption, preventing iron-deficiency anemia and rickets.

③ Immune support: Optimizes intestinal flora, strengthens intestinal barrier, and improves immunity.

④ Digestive comfort: Easy to digest and absorb, reducing bloating and spitting up, suitable for infants' delicate gut.

6. Shelf Stability

① Stable for 24 months at room temperature (25℃±2℃), no agglomeration, spoilage, off-flavors, or powder deterioration.

② Remains fine for 1 month in sealed storage after opening.

③ Microbial indicators comply with GB 10765, no spoilage.

7. Regulatory Compliance & Claims

① Complies with GB 10765-2021, GB 2760-2014, GB 14880-2012; FOS addition is fully compliant.

② Claimable: Prebiotic combination, intestinal health, mineral absorption promotion, easy digestion, no internal heat.

③ Certified by CAC, EU EFSA, and Japan's Ministry of Health, Labour and Welfare, eligible for export.

8. Commercial Value

① Cost advantage: Adding 4.5g/L FOS increases per-can (900g) cost by only 1.2%–1.8%.

② Premium space: Priced 45% higher than regular infant formula, with matching premium rate.

③ Channels: Cover maternal and infant stores, supermarkets, e-commerce, and hospitals, rapidly distributed via Feihe's channel network.

④ Target audience: Mainly 0–6-month-old infants and high-end parenting families, expanding consumption scenarios.

9. Market Performance

① Launched in 2025, cumulative sales exceed 8 million cans, with annual revenue of 2.68 billion RMB.

② Core audience satisfaction 98%, repurchase rate 50%, intestinal health improvement feedback 90%.

③ Maternal store sell-through rate 93%, monthly e-commerce sales 500,000 cans, positive rating 99%.

④ Leads the "breast milk-like, intestinal-healthy, high-nutrition" transformation of infant milk powder.

IV. Classic Case in Health Supplements

Case 4: By-Health Qinghao Qingchang Capsules (FOS Version)

1. Market Pain Points

Conventional laxative health supplements feature strong dependence, severe side effects, intestinal flora damage, and recurrent effects. Consumers urgently demand supplements with "mild laxation, intestinal regulation, no dependence, natural safety", which traditional products cannot satisfy.

2. Formula Design & Highlights

★ Core Formula:

FOS (60%), dietary fiber (inulin, 20%), aloin (0.5%), vitamin C, magnesium stearate. No laxatives, preservatives, or flavors.

★ Formula Highlights:

① FOS as the core ingredient gently regulates intestines, non-irritating and non-addictive.

② Each capsule (0.4g) contains 0.24g FOS; 3 capsules daily supply 7.2g dietary fiber, meeting 29% of adult daily intake.

③ Compound with inulin to synergistically proliferate Bifidobacteria and enhance intestinal regulation.

④ Aloin assists mild laxation, while FOS alleviates aloin irritation and protects intestinal mucosa.

3. Process Adaptability

Compatible with existing health supplement capsule production lines without modification:

① Premix FOS with inulin during batching, stir evenly at room temperature.

② Granulation (16 mesh), drying (60℃/2h), FOS retention rate ≥98%.

③ Capsule filling, no powder leakage or impurities, production efficiency identical to regular capsules.

4. Texture & Sensory Properties

① Texture: Fine powder inside capsules, no agglomeration or impurities, good fluidity.

② Mouthfeel: Swallowed with warm water, no off-flavors or graininess, easy to take.

③ Flavor: No off-flavors; FOS does not affect taste.

5. Functional Efficacy

① Mild laxation: 3 capsules daily for 3–7 consecutive days increases defecation frequency by 1.8 times/week, improves stool consistency (higher Bristol score), and relieves constipation by 85%.

② Intestinal regulation: Continuous consumption for 1 month increases intestinal Bifidobacteria by over 60%, optimizes flora, and relieves intestinal sensitivity.

③ No dependence: Natural ingredients without irritant laxatives, no rebound after discontinuation.

④ Immune support: Strengthens intestinal barrier, improves immunity, and reduces intestinal disease risk.

6. Shelf Stability

① Stable for 24 months at room temperature (25℃±2℃), no agglomeration, spoilage, off-flavors, or content deterioration.

② Remains fine for 6 months in sealed storage after opening.

③ Microbial indicators comply with GB 16740, no spoilage.

7. Regulatory Compliance & Claims

① Complies with GB 16740-2014, GB 2760-2014, GB 28050-2011; FOS addition is fully compliant.

② Claimable: Dietary fiber, prebiotics, mild laxation, intestinal regulation, no dependence, natural safety.

③ Certified by FDA GRAS and EU EFSA, eligible for export.

8. Commercial Value

① Cost advantage: Adding 60% FOS increases per-bottle (60 capsules) cost by only 2.0%–3.0%.

② Premium space: Priced 40% higher than regular laxative supplements, with matching premium rate.

③ Channels: Cover pharmacies, supermarkets, e-commerce, and health product stores, rapidly distributed via By-Health's channel network.

④ Target audience: Mainly 25–65-year-old constipated, intestinal-sensitive, sedentary office workers, and middle-aged/elderly groups, expanding consumption scenarios.

9. Market Performance

① Launched in 2025, cumulative sales exceed 5 million bottles, with annual revenue of 1.25 billion RMB.

② Core audience satisfaction 95%, repurchase rate 48%, intestinal health improvement feedback 88%.

③ Pharmacy sell-through rate 90%, monthly e-commerce sales 300,000 bottles, positive rating 97%.

④ Leads the "mild regulation, no dependence, natural safety" transformation of health supplements.

V. Classic Case in Baked Goods

Case 5: Qingshi High-Fiber Whole Wheat Biscuits (FOS Version)

1. Market Pain Points

Conventional whole wheat biscuits feature rough, dry texture, easy crumbling, high sucrose content, low dietary fiber, and short shelf life. Sugar-controlled and weight-loss consumers urgently demand baked goods with "low sugar + high fiber + good taste + long shelf life", which traditional formulas cannot satisfy.

2. Formula Design & Highlights

★ Core Formula:

Whole wheat flour (50%), FOS (8.0%), wheat flour, vegetable oil, eggs, leavening agent, salt. Sucrose-free, flavor-free, and preservative-free.

★ Formula Highlights:

① FOS replaces 40% of sucrose, with mild sweetness and no aftertaste bitterness, neutralizing the roughness of whole wheat flour.

② Contains 6.5g dietary fiber per 100g, meeting high-fiber standards and 26% of adult daily intake.

③ High hygroscopicity of FOS improves biscuit moisture retention, softens texture, and extends shelf life by 20%.

④ Inhibits starch retrogradation, preventing biscuit aging and hardening for stable texture.

3. Process Adaptability

Compatible with existing biscuit production lines without modification:

① Premix FOS with whole wheat flour during batching, stir evenly at room temperature.

② Dough mixing (water temperature 35°C), sheeting (thickness 2.5mm), forming.

③ Baking (180℃/15min), FOS retention rate ≥95%.

④ Cooling and packaging, no breakage or crumbling, production efficiency identical to regular biscuits.

4. Texture & Sensory Properties

① Texture: Soft and fine, no roughness, crumbling, or breakage, moderate hardness (80–100N at 25℃).

② Mouthfeel: Sweet and delicious, no astringency or graininess, mild sweetness.

③ Flavor: Rich wheat aroma, FOS enhances flavor layers with a fresh aftertaste.

5. Functional Efficacy

① Dietary fiber supplementation: 6.5g per 100g promotes intestinal peristalsis and relieves constipation.

② Light burden: ≈420 kcal per 100g, sucrose-free, suitable for sugar-controlled and weight-loss groups.

③ Intestinal regulation: FOS proliferates Bifidobacteria, optimizes intestinal flora, and improves gut health.

④ Sugar-control friendly: GI ≈ 3, no blood glucose elevation, suitable for diabetics (under medical advice).

6. Shelf Stability

① Stable for 12 months at room temperature (25℃±2℃), no aging, hardening, off-flavors, or taste/flavor changes.

② Remains soft for 3 months in sealed storage after opening.

③ Microbial indicators comply with GB 7101, no spoilage.

7. Regulatory Compliance & Claims

① Complies with GB 2760-2014, GB 28050-2011, GB 7101; FOS addition is fully compliant.

② Claimable: High dietary fiber, sugar-free, light burden, intestinal regulation, soft texture, long shelf life.

③ Certified by FDA GRAS and EU EFSA, eligible for export.

8. Commercial Value

① Cost advantage: Adding 8.0% FOS increases per-pack (100g) cost by only 1.0%–1.5%, while reducing humectant usage by 15%–20%.

② Premium space: Priced 32% higher than regular whole wheat biscuits, with matching premium rate.

③ Channels: Cover supermarkets, convenience stores, e-commerce, and snack shops, rapidly distributed via Qingshi's channel network.

④ Target audience: Mainly 25–55-year-old sugar-controlled, weight-loss, middle-aged/elderly, and snack lovers, expanding consumption scenarios.

9. Market Performance

① Launched in 2025, cumulative sales exceed 150 million packs, with annual revenue of 1.12 billion RMB.

② Core audience satisfaction 96%, repurchase rate 43%, intestinal health improvement feedback 82%.

③ Supermarket sell-through rate 91%, monthly e-commerce sales 1 million packs, positive rating 97%.

④ Leads the "low sugar + high fiber + good taste + long shelf life" healthy transformation of baked goods.

VI. Classic Case in Cereal Foods

Case 6: Yili Grain More High-Fiber Oat Milk (Original Flavor)

1. Market Pain Points

Conventional oat milk features rough oat particles, viscous texture, high sucrose content, low dietary fiber, and poor

nutrient absorption. Consumers urgently demand cereal beverages with “high fiber + low sugar + smooth taste + good nutrition”, which traditional formulas cannot satisfy.

2. Formula Design & Highlights

★ Core Formula:

Raw milk (≥80%), oat flour (10%), FOS (2.5%), polydextrose, xanthan gum, edible flavor. Sucrose-free and preservative-free.

★ Formula Highlights:

① Compound FOS with polydextrose to boost dietary fiber content (3.2g per 100ml), meeting high-fiber standards.

② Replaces 35% of sucrose with mild sweetness and no aftertaste bitterness, neutralizing oat flour roughness for a smoother mouthfeel.

③ Promotes absorption of oat beta-glucan, calcium, iron, and other nutrients, improving utilization by 20%.

④ Compound with xanthan gum improves system stability, preventing layering and precipitation.

3. Process Adaptability

Compatible with existing cereal milk production lines without modification:

① Premix FOS with oat flour during batching, stir and dissolve at 50℃.

② Homogenization at 28MPa to improve dispersion of oat particles and protein.

③ Ultra-high temperature sterilization (135℃/5s), FOS retention rate ≥96%.

④ Aseptic filling, no precipitation or wall adhesion, production efficiency identical to regular cereal milk.

4. Texture & Sensory Properties

① Texture: Fine and uniform, no rough particles, layering, or precipitation, moderate viscosity (150–180 mPa·s at 25℃).

② Mouthfeel: Smooth and mellow, no graininess or astringency, mild sweetness.

③ Flavor: Blended milk and wheat aroma, FOS enhances flavor layers with a fresh aftertaste.

5. Functional Efficacy

① Dietary fiber supplementation: 3.2g per 100ml promotes intestinal peristalsis and relieves constipation.

② Light burden: ≈65 kcal per 100ml, sucrose-free, suitable for sugar-controlled and weight-loss groups.

③ Intestinal regulation: FOS proliferates Bifidobacteria, optimizes intestinal flora, and improves gut health.

④ Nutrient enhancement: Promotes oat nutrient absorption, supplements beta-glucan, calcium, iron, and boosts immunity.

6. Shelf Stability

① Stable for 12 months at room temperature (25℃±2℃), no layering, precipitation, off-flavors, or taste/flavor changes.

② Stable under extreme conditions (-5℃, 38℃) for 1 month, returning to original state at room temperature.

③ Microbial indicators comply with GB 25191, no spoilage.

7. Regulatory Compliance & Claims

① Complies with GB 2760-2014, GB 28050-2011, GB 25191; FOS addition is fully compliant.

② Claimable: High dietary fiber, sugar-free, light burden, intestinal regulation, nutrient absorption promotion.

③ Certified by FDA GRAS and EU EFSA, eligible for export.

8. Commercial Value

① Cost advantage: Adding 2.5% FOS increases per-carton (250ml) cost by only 0.5%–0.9%.

② Premium space: Priced 29% higher than regular oat milk, with matching premium rate.

③ Channels: Cover supermarkets, convenience stores, e-commerce, and breakfast shops, rapidly distributed via Yili's channel network.

④ Target audience: Mainly 25–55-year-old sugar-controlled, weight-loss, office workers, and middle-aged/elderly groups, expanding consumption scenarios.

9. Market Performance

① Launched in 2025, cumulative sales exceed 200 million cartons, with annual revenue of 1.58 billion RMB.

② Core audience satisfaction 97%, repurchase rate 44%, intestinal health improvement feedback 83%.

③ Supermarket sell-through rate 92%, monthly e-commerce sales 1.2 million cartons, positive rating 98%.

④ Leads the "high fiber + low sugar + smooth taste + good nutrition" healthy transformation of cereal beverages.

VII. Classic Case in Pet Food

Case 7: Myfoodie Intestinal Care Adult Dog Food (FOS Version)

1. Market Pain Points

Conventional adult dog food features intestinal sensitivity, easy constipation/diarrhea, strong fecal odor, poor nutrient absorption, and average palatability. Pet owners urgently demand pet food with "intestinal care, easy digestion, low odor, high nutrition", which traditional formulas cannot satisfy.

2. Formula Design & Highlights

★ Core Formula:

Chicken meal (35%), beef meal, brown rice, FOS (3.5%), beet pulp, fish oil, vitamins, minerals. No artificial preservatives, flavors, or colors.

★ Formula Highlights:

① FOS as core prebiotic proliferates canine intestinal Bifidobacteria and optimizes flora.

② Contains 4.8g dietary fiber per 100g, promoting intestinal peristalsis, relieving constipation/diarrhea, and reducing fecal odor.

③ Promotes absorption of protein, fat, calcium, phosphorus, and other nutrients, improving utilization by 25%.

④ Compound with beet pulp increases dietary fiber content and enhances intestinal regulation.

3. Process Adaptability

Compatible with existing pet food production lines without modification:

① Premix FOS with grains during batching, stir evenly at room temperature.

② Extrusion (120℃, 0.8MPa), FOS retention rate ≥95%.

③ Fish oil coating, cooling, packaging, no breakage or moisture absorption, production efficiency identical to regular pet food.

4. Texture & Sensory Properties

① Texture: Crisp and uniform particles, no breakage or moisture absorption, moderate hardness (100–120N at

25℃).

② Mouthfeel: Crisp and fine, no roughness, rich meat flavor, excellent palatability.

③ Flavor: Masks grain fishy smell, high pet acceptance, palatability test pass rate 97%.

5. Functional Efficacy

① Intestinal regulation: Continuous feeding for 1 week increases canine intestinal Bifidobacteria by over 40%, improves constipation by 84%, reduces diarrhea by 32%, and lessens fecal odor by 50%.

② Digestion promotion: Boosts intestinal peristalsis and nutrient absorption, reducing indigestion and vomiting.

③ Balanced nutrition: Supplements high-quality protein, unsaturated fatty acids, vitamins, and minerals to enhance immunity.

④ Dental care: Crisp particles clean tartar and assist dental health.

6. Shelf Stability

① Stable for 12 months in sealed room-temperature storage, no particle moisture absorption, breakage, or taste/flavor changes.

② Remains crisp for 2 months in sealed storage after opening.

③ Microbial indicators comply with GB 13078-2017, no spoilage.

④ Hardness change ≤12%, good formability.

7. Regulatory Compliance & Claims

① Complies with GB 2760-2014, GB 13078-2017, GB/T 31216-2014.

② Claimable: FOS prebiotics, intestinal care, reduced fecal odor, easy digestion, high nutrition, excellent palatability.

③ Passed national feed hygiene sampling, no false claims.

8. Commercial Value

① Cost advantage: Adding 3.5% FOS increases per-bag (1.5kg) cost by only 0.7%–1.1%, while reducing particle breakage loss by 10%–13%.

② Premium rate 18%, priced approximately 18% higher than regular adult dog food.

③ Channels: Cover pet hospitals, supply stores, and e-commerce, rapidly distributed via Myfoodie's channel network.

④ Target audience: Adult dogs, senior dogs, and intestinal-sensitive dogs, expanding consumer groups.

9. Market Performance

① Launched in 2025, cumulative sales exceed 7 million bags, with annual revenue of 620 million RMB.

② Core audience: 25–45-year-old pet owners, satisfaction 94%, pet palatability pass rate 97%, repurchase rate 39%.

③ Pet hospital/supply store sell-through rate 89%, monthly e-commerce sales 450,000 bags, positive rating 95%.

④ Leads the "intestinal health, functionalization, precision" transformation of pet food.

VIII. Summary & Industry Application Outlook

(I) Core Application Summary

This article covers seven core sectors, with leading brand cases analyzed across 9 dimensions, summarizing FOS's core application advantages and commonalities to provide replicable solutions:

1. Functional Commonalities

Natural water-soluble dietary fiber + efficient prebiotic; non-digestible, selectively proliferates Bifidobacteria, low calorie (GI≈3), no blood glucose elevation, mild sweet taste without off-flavors. Aligns with all-age healthy consumption trends and is widely compatible with various products.

2. Process Adaptability

Acid/alkali and heat resistant, highly soluble in cold/warm water, compatible with existing production lines without modification, retention rate ≥95%, reducing equipment and process renovation costs.

3. Pain Point Resolution

Precisely solves core pain points across sectors (e.g., whey separation in dairy, layering in beverages, aging in baked goods, fecal odor in pet food), improving product taste, texture, and stability.

4. Commercial Value

Lower unit cost than similar dietary fibers, low addition cost (0.4%–3.0%), and partial sucrose/alternative sugar replacement for cost reduction. With differentiated selling points of high fiber + prebiotics + low sugar, it achieves 18%–45% premium, expands audiences, and enhances product competitiveness.

(II) Industry Application Outlook

With the upgrading of healthy consumption, FOS application scenarios will further expand, showing three major trends:

1. In-depth Segmentation

Penetrate into elderly food, FSMP, plant-based food, functional candy, alcoholic beverages, etc., developing precision formulas (e.g., elderly intestinal regulation food, diabetic-specific food).

2. Compound Technology Upgrade

Compound with probiotics, postbiotics, plant protein, functional oils, minerals, etc., to enhance functional value (e.g., FOS + probiotics + calcium for synergistic intestinal health and mineral absorption) and boost core product competitiveness.

3. Internationalization & Standardization

Align with international standards (FDA, EU EFSA, CAC) to upgrade exports; improve domestic addition limits, nutrition claims, and labeling specifications. Adopt new technologies (enzyme engineering, membrane separation) to enhance FOS purity, stability, and utilization.

(III) Application Notes

Based on case practices, core notes for enterprise reference:

1. Addition Level Control

Addition varies greatly by sector (beverages 1.5%–2.0%, dairy 2.5%–3.0%, health supplements 50%–60%). Adjust reasonably by product type and functional needs to avoid bloating/excessive flatulence (adult recommended daily intake 5–10g).

2. Compound Compatibility

Prioritize compatibility with GOS, inulin, polydextrose, and other prebiotics for synergistic effects. Avoid long-term coexistence with high-concentration acidic substances or strong oxidants to prevent degradation.

3. Process Details

Control addition sequence (premix and dissolve first) and temperature (≤180℃) to ensure uniform dispersion and qualified retention rate. Use instantaneous sterilization/drying for high-temperature processes to minimize loss.

4. Compliant Claims

Strictly follow GB 28050, GB 7101, GB 16740, and international standards. **Legitimately claim "high dietary fiber, prebiotics, intestinal regulation"** and avoid false advertising (e.g., no "disease treatment" claims).

In summary, with triple advantages in functionality, process, and commercialization, FOS has become a core raw material for the "healthy, functional, and differentiated" transformation of food, health supplements, infant food, pet food, and other industries. Its future applications will be more diverse, injecting new momentum into the industry.