Product Name	Keora Jelly
Brief Description	A nutritious, natural jelly produced from the ripe fruit of *Sonneratia apetala* (Keora), a mangrove species native to the Sundarbans and coastal belt of Bangladesh. The process utilizes modern processing technology with agar and pectin to create a healthy, low-sugar jelly rich in vitamin C, dietary fiber, and essential minerals, with natural preservative qualities and a shelf life of up to one year without artificial preservatives. 
Problem Being Addressed	Traditional jellies are often high in sugar, additives, and preservatives, raising concerns about nutritional value and health implications. Conventional production methods may result in loss of essential nutrients during processing. Consumers increasingly demand products made with natural ingredients, minimal additives, and sustainable practices. Keora fruit offers a natural, healthier alternative rich in antioxidants, vitamins, and dietary fiber, addressing food security and malnutrition in coastal Bangladesh while providing a nutritious alternative to traditional processed foods.
Primary Applications	Commercial jelly production, health food market, coastal community food products, export-oriented processed fruit products, institutional food supply, and value-added mangrove fruit utilization.
Target Users & Buyers	Food processing companies, health-conscious consumers, coastal communities in Bangladesh, export markets (India, Africa, Southeast Asia), government food security programs, NGOs working on livelihood development, and retail supermarkets and grocery chains.
Development Status	The process is fully developed and standardized, with laboratory-scale production validated, an industrial-scale production method established using a 500 kg automatic jelly making machine, shelf life studies completed (up to 1 year), and sensory evaluation conducted with a 10-judge panel. It is ready for commercial technology transfer and licensing, developed by a 7-member inventor team from BCSIR, Dhaka.
Testing & Quality Validation	**Physicochemical Properties:** pH 3.14; Acidity 0.71% (BSTI std ≤0.90%); TSS 68.8% (above 60% standard); Moisture 15.70%; Ash 3.25%; Total Sugar 54.3%; Reducing Sugar 43.0%; Non-Reducing Sugar 11.3%; Pectin 3.6 mg/kg; Vitamin C 7001.37 mg/kg. **Mineral Profile:** Na (40,926.86 µg/kg), K (3,541.81 µg/kg), Ca (34.89 µg/kg), Mg (15.25 µg/kg), Fe (67.25 µg/kg), Mn (18.01 µg/kg), Cu (2.58 µg/kg), Zn (7.03 µg/kg), P (442.07 mg/kg). **Proximate Analysis:** Protein 2.84%, Fat 5.99%, Fiber 19.98%, Carbohydrate 52.24%, Energy 287 kcal/100g. **Microbiological Safety:** *Total Heterotrophic Bacteria; Total Coliform; Fecal Coliform; E. coli, Salmonella, Shigella, Vibrio* all are absent; Toxic metals (As, Cd, Pb, Hg, Cr) all within safe limits. **Sensory Evaluation:** Overall Acceptability (7.70–7.75) and all rated Good.
Core Technical Advantages	Using underused mangrove fruit to support coastal livelihoods, this sustainable jelly combines agar and pectin for ideal texture and health benefits. Its low pH (3.14) and organic acids naturally ensure a 12-month shelf life without preservatives pathogen-free (no *E. coli, Salmonella, Shigella, Vibrio*). Standardized

	production delivers consistent sensory quality, while the low-sugar formula offers 7,001.37 mg/kg vitamin C, 19.98% fiber, and essential minerals.
Raw Materials & Supply Chain	*Sonneratia apetala* (Keora) fruit; Sugar; Salt (NaCl); Lemon Juice; Sodium Benzoate: (food grade preservative, 98–100% purity, Sigma Aldrich, Germany); Agar and Water.
Key Machinery	Automatic Jam Making Machine: 500 kg capacity (industrial-scale production); Frying Pan/Steam Jacketed Kettle: For cooking at 80–105°C; Blender/Mixer; Sieve: 100–150 mesh for filtration; Analytical Balance; Glass Jars; pH Meter, TSS Refractometer, Viscometer; Autoclave/Sterilization Equipment and Storage Facility.
Indicative Economics	Raw materials stay cheap Keora fruit is abundant across Sundarbans coasts, with sugar and salt at commodity prices. Each batch yields 1,000g on 500kg-capacity machinery, using only 0.05g sodium benzoate plus low-cost agar (2g) and vinegar (2g). Shelf life reaches one year, cutting waste and storage costs. This value addition monetizes an underused mangrove fruit, generates coastal income, and targets the premium natural/health jelly segment with export potential and high ROI.
Market Evidence & Readiness	Standardized formulation protocol developed at BCSIR is ready for commercial technology transfer, industrial scale-up, and license agreements.
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