Kitchen waste Processing system

Langrui Machinery's kitchen waste recycling system is designed under the principle of "High Efficiency & Energy Saving, Innovative & Practical". It follows harmless reduction, resource utilization, and intelligent management principles.

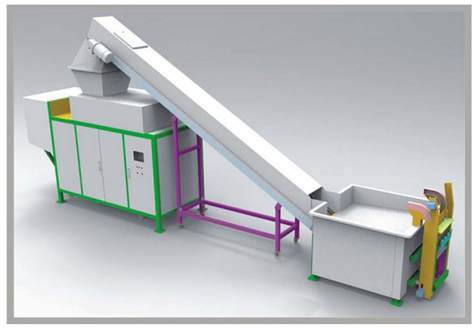
Using the process of Pretreatment → Biological Treatment → Wastewater Treatment (Waste Oil Extraction) → Exhaust Gas Treatment, it comprehensively processes organic waste such as food waste, fruit/vegetable waste, garden waste, and manure, turning them into a valuable solution.

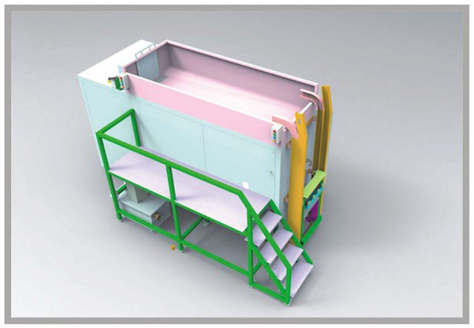
langrui's kitchen waste treatment equipment features full automation, intelligence, and modular operation. We can match the most cost-effective products according to different environments and working conditions, offering you a VIP tailored solution.

I Kitchen waste treatment equipment

Volume Reduction Equipment

This integrated equipment adopts sorting + crushing & dewatering process to reduce kitchen waste volume. It includes automatic lifting, weighing, sorting, crushing & dewatering, intelligent washing, material lifting, and oil-water separation, achieving intelligent and automated integration. With a daily processing capacity of 100kg/h to 20t/h, it supports modular design, and Hangkai can customize it according to different material compositions and customer needs.





Integrated Treatment Equipment

This equipment integrates weighing, sorting, crushing, material lifting, biological treatment, and exhaust deodorization for kitchen waste reduction, harmless disposal, and resource utilization. With microbial high-temperature aerobic fermentation, it mixes waste with auxiliaries at the right ratio. Adjusting moisture, C/N ratio, pH, and oxygen accelerates organic matter decomposition. High-temperature fermentation kills pathogens to produce quality organic fertilizer, while exhaust gas is purified before discharge.

II Pretreatment system

Collecting & Conveying Equipment

Consists of receiving hopper, discharge screw, hydraulic unit, draining/dewatering, and control parts. Waste is collected in the hopper and conveyed by the screw, while wastewater flows to the collection tank after filtration.

Sorting & Washing Equipment

Separates non-biodegradables (plastic, glass, metal) and large debris. Available in automatic sorting and trommel sorting versions, with washing, oil removal, and self-cleaning functions.

II Pretreatment system

Conveying & Lifting Equipment

Driven by motor to move materials. Common types: belt, scraper, and screw conveyors. Customized solutions for different working conditions and materials.

Crushing & Dewatering Equipment

Combines crusher, press, hydraulic unit, washing mechanism, and controls. Cuts and shreds waste into fine particles, then dewaters it to reduce volume. Adjustable pressure for different moisture outputs.

III Aerobic fermentation system

High-Temperature Biochemical Treatment Equipment

Rapid composting via aerobic fermentation + high-temperature drying, with integrated heating, oxygen supply, stirring, deodorization, and waste heat recovery. Reduces, harmlessly treats, and recycles kitchen waste into organic fertilizer.

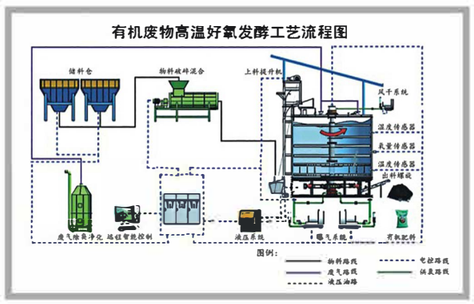
Cycle: 1–3 days, customizable based on waste composition.

Features: PLC control, safety protections (overload, overheating), exhaust gas deodorization.

Intelligent Aerobic Fermentation Equipment

Vertical fermentation tank with stirring, aerobic fermentation, dehumidification, and dust removal. Automatically runs through mesophilic (microbial propagation) and high-temperature stages to decompose organic matter and kill pathogens.

Cycle: 7–10 days, fully customizable intelligent control.



Waste oil Extraction System

Steam Heating System

Produces steam via electric/fuel heating to heat and clean waste. Consists of water softener, steam generator, and control valves.

Heating & Mixing Equipment

Top-mounted stainless steel mixing tank with heating, temperature control, and stirring functions. Ideal for small-scale use without steam supply, fully enclosed structure available.

Sludge-Oil-Water Separator

Fully automatic three-phase separator with functions including automatic oil removal, water circulation, and intelligent control.

Horizontal Decanter Centrifuge

High-speed rotating centrifuge for efficient three-phase separation of oil, water, and solids. Features dual vibration damping and wear-resistant components for stable operation.

V Exhaust gas treatment system

IntelligentSpray Deodorization

Microbial spray system decomposes odor gases, eliminates bacteria, and reduces odors effectively.

Spray Tower Deodorization

Gas-liquid contact absorption process, removes dust and odors via countercurrent washing with chemical solutions.

Photocatalytic Deodorization

UV light + ozone oxidation decomposes organic pollutants, achieving purification and sterilization.

Activated Carbon Adsorption

Adsorbs odor molecules using activated carbon's high adsorption capacity for deodorization.

Biofilter Deodorization

Microbial decomposition converts odors into harmless, odorless substances via biological filtration.

VI Wastewater treatment system

Adopts a combined process of water quality adjustment → air flotation → UASB anaerobic treatment → AO biological treatment → deep filtration for kitchen wastewater purification and discharge compliance.

Removes suspended solids, oil, and organic pollutants through multi-stage treatment.

Anaerobic + aerobic processes degrade organic matter, followed by filtration to meet discharge standards.

VII Intelligent Split Garbage Compression Station

This horizontal compression station reduces and volumes domestic waste via containerized compression and closed transfer. The split design allows one press to serve multiple containers, maximizing cost-effectiveness.

Key Features:

High-strength, wear-resistant steel construction for long service life in corrosive environments.

Fully enclosed compression & transfer process, no odor/leakage or secondary pollution.

Modular unit design with stable performance, aligned with international advanced standards.

Horizontal feeding, high compression ratio (3:1 to 4:1), high efficiency & safety.

Fully automatic intelligent control with safety interlocks and emergency stop functions.
Easy feeding via dump trucks, low labor intensity.

VIII Bulky Waste Disposal System

Adopts the "Crushing + Sorting + Dust Removal" process, integrating mechanical, electrical, hydraulic and intelligent control technologies. The system consists of metal conveyors, bulky waste shredders, magnetic separators, enclosed belt conveyors, pulse dust collectors and control systems.

Process Flow: Bulky waste is fed into the shredder for size reduction. Ferrous metals (iron nails, etc.) are sorted out for recycling. The remaining materials are conveyed to incineration plants as fuel.

Advantages: High capacity, stable performance, low maintenance, fully enclosed design to prevent dust leakage, suitable for harsh environments.