

SUCCESS STORY

WAKAYAMA NOKYO FOODS

JAPAN



ORWAK BALERS PLAY A VITAL ROLE BEHIND THE SCENES IN JAPANESE BEVERAGE COMPANY

Wakayama Nokyo Foods, a leading beverage manufacturer in Japan, produces 700 million bottles of beverage every year. The premium Orwak balers 5070-HDC help solving the waste management challenges related to discarded PET bottles and improve the operational efficiency.

WAKAYAMA HAS BEEN A PIONEER IN THE BEVERAGE INDUSTRY IN JAPAN SINCE THE 1970S, WHEN STARTING TO PRODUCE BEVERAGES AND PROCESSED FOODS utilizing the abundant agricultural products, such as plums and mandarins, in the Wakayama region. It was the first company in Japan to introduce an aseptic filling PET bottle line. Through proactive capital investment and continuous technological development, the company has been improving and innovating both its production system and quality, resulting in one of the highest beverage production volumes in Japan. The wide variety of products can be found in convenience stores and supermarkets all over the company.

700 million beverage bottles per year

Currently, Wakayama Nokyo Foods Industry operates four factories in the region. The Hainan Plant produces approximately 36 million cases, or about 700 million pcs of PET bottles filled with beverages, annually. The production line operates at high speed, almost 24 hours a day, to meet demand throughout Japan. However, the beverage production process generates a large amount of discarded PET bottles. Storing and disposing of them as they are would not only strain factory space but also directly increase



industrial waste disposal costs. Therefore, efficiently and safely reducing the volume and storing discarded PET bottles has become a critical challenge on site.

Orwak balers play a vital role

To address these challenges, they invested in Orwak's multi-chamber baler 5070-HDC supplied by Orwak Japan. The same model is also used in the Chiba factory. "HDC" in the model designation stands for "Heavy Duty, Cross-binding", which are excellent product features for bottle compaction. PET requires strong compaction and cross-binding prevents flattened bottles from falling apart.



New generation effective balers

The current equipment is the second generation, replacing the aging first-generation balers installed in 2009. When considering the replacement, the model 5070-HDC was selected based on safety, work efficiency, and reduction of environmental impact.

After the replacement, the onsite staff gave positive feedback: "The bales are very stable and perfectly square-shaped, which makes stacking on pallets easier and safer." and

"The compaction speed has been optimized, allowing for a faster pace of work than before."

Additionally, due to the increase in production volume at the Kainan factory, the compaction processing volume in 2025 increased by approximately 1.7 times compared to the previous year. However, thanks to the dedicated work of the assigned staff, the increased volume is being handled without delay.





Tangible advantages and operational effectiveness in figures

The processing volume and collection conditions

- + Processing volume: Approx. 9-13 bales per day
- + Monthly collection volume: 5,500 kg/month on average
- + Collection frequency: Once a month using a 10-ton wing truck

Increased storage capacity

- + Pallet dimensions: 1100mm x 1100mm = 1.21 m²/pallet
- + Loading conditions: 4 bales x 3 layers per pallet = 12 bales
- + Estimated storage space: Approx. 6 m² ÷ 1.21 m² ≈ 4.95 pallets
- + Estimated actual operational capacity: 5 pallets
- + Quantity that can be stored: 12 bales x 5 pallets = Approx. 60 bales
- + PET bottles compacted to approx. 1/6 of their original size
- + Storage capacity increased 5 to 6 times (maximum storage capacity: equivalent to approximately 1,800 kg PET bottles)

Reduced costs during collection and transportation

- + Improved transportation efficiency

Reduced workload

- + The compact and lightweight bales (about 30 kg) can be handled by one person, resulting in improved safety and reduced workload



A dedicated team: Mr. Enoki, Mr. Niiyama, Mr. Hayashi, and Factory Manager Yabuta



More sustainable beverage production attained

Wakayama Nokyō Foods Co., Ltd. has achieved sustainable beverage production by combining its advanced technological capabilities, exemplified by the introduction of Japan's first PET bottle beverage and aseptic filling PET bottle line, with environmental technologies such as solar power generation, cogeneration, and biomass boilers.

- + Stable supply of safe and secure beverages
- + Waste reduction and resource recycling
- + Challenges toward achieving carbon neutrality

Orwak Japan is honored that the 5070-HDC balers support these sustainability initiatives: "We will continue to provide environmentally friendly solutions by creating workplaces that "never stop," "never accumulate," and "never waste," together with our customers, including beverage and food factories."

What happens to PET bottles after collection?

Typically, PET bottles collected in Japan are recycled in various ways depending on their use and quality. One method that is attracting attention is "horizontal recycling," which returns used bottles to beverage bottles. While this requires advanced sorting and washing technology, it is considered the most ideal method from a resource circulation perspective. Meanwhile, "cascade recycling," which transforms PET bottles into other products such as fibers and sheets, and "chemical recycling," which chemically decomposes them back into raw materials, are also important options. By appropriately combining these methods, progress is being made towards realizing a circular economy that maximizes the resource value of PET bottles.

Horizontal recycling in the beverage industry

The beverage industry has seen a rapid increase in "horizontal recycling," which involves recycling used PET bottles back into new PET bottles. Unlike traditional recycling for textiles and other uses, this method significantly contributes to reducing the use of petroleum-derived raw materials and CO₂ emissions by circulating resources for the same purpose. Major beverage manufacturers in particular are investing in advanced technologies at each stage of collection, sorting, and recycling. Horizontal recycling is becoming the new standard in the beverage industry as it contributes to the realization of a circular economy.