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Kale: Farmers’ know-how paves way to wealth



Kale is used as an ingredient to create a wide range of products, including kale noodles, dumplings, pastries, yogurt and vegetable juices.  
PHOTOS PROVIDED TO CHINA DAILY

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“It’s all thanks to eating kale,” she said with a hearty laugh when someone complimented her on her vitality. Wang attributes the transformation in the taste of her kale to the use of bio-organic fertilizers. She proudly refers to her kale as “pregnancy and infant-grade food”, safe for even the most vulnerable consumers.

Journey of growth

“I’m a farmer, and I’ve been working the land since I was a child. Growing crops and vegetables is second nature to me,” Wang said. In the 1990s, many young people in her village left their farms to seek work in cities. Seeing vast stretches of abandoned land, Wang grew concerned. “If everyone leaves to work in the cities, what will we eat?” she thought. In 1995, she leased over seven hectares of land from 13 households in her village and began growing wheat and corn.

In addition to growing these crops, in 2000 Wang started cultivating spinach for export. “The soil and water in Shandong are perfect for growing vegetables, so I started with spinach and secured steady export orders,” she said. This success led to a new opportunity in 2005, when a client in the United States requested that Wang grow kale.

At first, Wang saw this as a lucrative business opportunity. She imported kale seeds from the Netherlands and began cultivating the crop.

“Back then, we had never tasted kale, but growing vegetables is something we Shandong farmers know how to do. I figured it out through trial and error,” she said.

What she didn’t anticipate was that this trial-and-error process would take seven years. “We experienced heat waves, floods, droughts and almost every possible disease,” she said. Finally, in 2012, she achieved success.

Over those years, she learned the crop’s “temperament”.

“It thrives in cool climates, and can withstand temperatures as low as minus 10 degrees Celsius, and isn’t particularly picky about soil, making it suitable for large-scale cultivation,” she said. “We had no manuals or experts to guide us. It was all based on our own experience and wisdom as farmers,” she said.

Despite her success, Wang initially found the taste of kale unappealing. “When I first grew it, I tasted it and thought it was terrible — bitter and astringent,” she said. For years, she didn’t even mention that she was growing kale, fearing that the demand for such an unpalatable vegetable would eventually dry up. But to her surprise, orders kept increasing year after year. By 2016, her farm exported 1,000 metric tons of kale annually.

It wasn’t until she did some research that Wang discovered kale’s reputation as a “superfood”. Rich in dietary fiber, vitamins and minerals like calcium, iron and phosphorus, kale also contains antioxidants and anti-cancer compounds such as sulforaphane, she said. What truly convinced Wang of kale’s potential was a personal discovery. One day, she accidentally left a bag of kale in a corner and forgot about it. Six months later, she found the leaves hadn’t rotted.

“They had simply dried out and turned yellow,” she said. “This was completely different from other vegetables. I realized it must be due to its antioxidant properties. That’s when I became convinced that kale, as a healthy and nutritious vegetable, had a bright future,” she said.

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Domestic markets

The global vegetable juice market is expected to grow at a compound annual growth rate of 5.8 percent from 2024 to



Left: A juice containing kale sold by the tea chain Naixue. DU LIANYI / CHINA DAILY



Right: A worker uses kale to make cakes at a workshop in Gaomi, Shandong province. ZHAO RUIXUE / CHINA DAILY

2034, according to Precedence Research.

Consumers are increasingly seeking out natural and nutrient-rich foods, and juice producers have turned their attention to niche ingredients. From avocados to chia seeds, from black mulberries to goji berries, “superfoods” have taken their turn in the spotlight.

Kale, once dismissed as “unpalatable”, unexpectedly became one of the hottest beverage ingredients over the last year.

In July 2024, the tea chain Heytea launched a drink featuring kale as the main ingredient, combined with apples, lemons, chia seeds and green tea. The product, which tied in with the health boom, quickly became a sensation, selling 1.6 million units in just a few days.

In September, the retail chain Hema introduced its not-from-concentrate kale mixed vegetable juice. The product blends kale with pineapple and green apples to reduce bitterness while retaining a high fiber content.

Priced at 13.9 yuan (\$1.9) a bottle, the product achieved an online repurchase rate of over 40 percent.

A 2023 consumer trends report highlighted that 81 percent of consumers are willing to pay for healthy food and beverages. Factors such as “high fiber” have become key drivers of consumer choices.

Kale fits health-conscious consumers’ demands perfectly.

“Kale contains very few calories, but has a high 3.6 grams of dietary fiber per 100 grams,” said Wang Fengde, deputy director of the Institute of Vegetables at Shandong Academy of Agricultural Sciences.

As kale-based beverages have gained in popularity, demand for the leafy green vegetable has surged.

Before 2024, all of Wang’s kale was exported. But in the second half of last year, domestic buyers, including Heytea, began purchasing the vegetable from her farm. During the second half of 2024, Wang sold 1,000 tons of kale in the domestic market.

“We used to operate on export orders, where foreign clients would place orders first, and we would grow accordingly. But with domestic buyers, it’s the opposite — they want as much as we can grow,” Wang said.

At a kale-growing base in Zhangdian district in neighboring Zibo, the leafy green vegetable is also highly sought after. “Supply falls short of demand, and buyers have to wait for the kale to grow,” said Hu Yanxia, the farm owner.

To meet the growing demand, Wang has temporarily converted 60 greenhouses, covering over 13 hectares, to grow more kale. From planting to harvesting, the process takes about 60 days.

Wang plans to expand her kale cultivation by 66 hectares this year. She is confident that demand for the vegetable will continue to thrive, driven by the growing emphasis on healthy eating.

“Some people have warned me that new tea drinks usually only stay popular for three to four months, and that’s just the nature of the industry. Products come and go,” Wang said.

“But my belief in kale is as strong as my belief in the importance of growing food. No matter the cultural or dietary differences, the need for healthy vegetables is universal,” she said, adding the increasing export orders for kale are proof that it has stood the test of time.

“Twenty years ago, I wondered why foreigners wanted kale. Now, domestic beverage companies are using it to make vegetable juices and tea drinks. That’s progress,” Wang said.

During a visit to a tea shop in Gaomi, Wang observed that out of every 10 drinks sold, four were kale-based, reinforcing her confidence in the vegetable’s future.

Innovation, expansion

Wang has taken her commitment to kale a step further by developing a range of kale-based products. Her family farm has partnered with several large processing companies to create over 40 kale products, including noodles, dumplings, pastries, yogurt and vegetable juices.

“These products have been well-received by consumers. I want more Chinese people to enjoy this healthy vegetable,” Wang said.

She refers to her kale as “pregnancy and infant-grade food”, meaning it is safe for pregnant women and babies.

Her farming practices adhere to strict standards, and she does not use herbicides, chemical fertilizers and pesticides. Instead, the farm relies on physical pest control methods, such as insect traps, and uses bio-organic fertilizers made from soybeans and peanuts.

“Kale contains an insect-resistant element, so it’s not easy for the vegetable to attract insects, making it safe from the need to use pesticides,” said Wang Fengde from the Institute of Vegetables.

“There was a time we cultivated cabbage and kale in the lab, and after some time, we noticed that the cabbage was infested with aphids, while the kale remained unaffected,” he added.

The bio-organic fertilizers that farmer Wang uses for her kale are easy to produce. On the 400 hectares of farmland run by her, she grows wheat, corn and soybeans, which supply enough materials for making fertilizers.

“We have the materials and skills, so we make bio-organic fertilizers on our own,” she said.

The farm is currently collaborating with the institute on establishing a kale research base this year. The research team includes eight PhD and master’s holders.

“The institute will focus on developing new kale varieties and improving growing techniques,” said Wang Fengde.

“We are working on growing kale that is also rich in selenium,” he added. Selenium is believed to further boost the health benefits of kale.

Wang Cuifen’s farm is also working with the Weifang Academy of Agricultural Sciences to draft industry standards for the entire production chain of pregnancy-safe and infant-grade kale.

“This is the first in the kale sector. I hope to promote these standards so that more people can access healthy vegetables,” she said.

Inspired by Chen Zhenlong, a merchant said to have introduced sweet potatoes to China in the 16th century that helped alleviate a food crisis, Wang aspires to make a similar impact.

“I want to improve the dietary habits of the Chinese people,” she said. “Just as Chen Zhenlong changed the way we eat, I hope kale can become a staple in our diets.”



Left: Farmers pick kale in Gaomi in May. ZHANG TAO / FOR CHINA DAILY



Right: Farmers harvest kale in a greenhouse in Gaomi in March. ZHAO RUIXUE / CHINA DAILY