

CHINA TURNS TO TRACTORS

Acute labour shortages in the winegrowing regions of China are forcing owners to innovate, says Jim Boyce. The result is mechanisation that may also improve the quality of the vineyard itself.



China's wine industry faces an acute labour shortage in the years ahead.

Li Demei raised some eyebrows when, at a meeting of government officials, winery personnel and visiting wine experts in Xinjiang this summer, he talked about the difficulty of finding seasonal labour. China's remote but expanding wine regions face a labour crisis.

Consider nearby winery Wang Zhong, maker of the label Tiansai, where Li Demei is a consultant. As in most of northern China, which accounts for the bulk of wine production in China, vines must be covered in winter and uncovered in spring to survive the harsh and dry winters. At Wang Zhong, this means piling on 60cm of soil and removing it a few months later, a task that represents over 30% of total expenses. Finding workers to do it, along with other seasonal tasks such as picking and pruning, is increasingly difficult.

Why? Wang Zhong is an hour drive from the city of Kuerle, which is a six-hour drive from the regional capital of Urumqi, which is a four-hour flight from the capital Beijing. This winery defines the word remote. The urbanisation of China's population also means an increasingly scarce rural work force, with young workers likely to head to the cities with little thought of returning home. On top of this, wineries

need those increasingly scarce workers for picking grapes at the same time as tomato and cotton operations, which further drives up costs. Finally, Tiansai has 150 ha in a 3000-ha government-backed project, which means more operations, and the need for more workers, are on the way.

Shortage looming

At the moment, Wang Zhong can still get enough workers. Co-owner Chen Lizhong says it requires 200 to 300 people to bury the vines. In the spring, for example, the operation uses a combination of machines plus manual labour to remove the soil at a cost of RMB260.00 (\$42.00) per row. But finding those workers, especially locally, is increasingly difficult and the cost is going up some 10% a year. At some point, there will be a shortage of workers. Li Demei estimates that will happen within a decade.

What Wang Zhong has going for it is foresight. When the vines were planted in 2010, they were placed in channels to make burial easier and spaced far enough apart to allow machinery in and out. Even the row posts carry signs that indicate which side the tractors should drive on. And the tractor that is the showpiece of this operation is no ordinary one. It is specially made to perform as much of the covering and uncovering work as possible while doing a minimal amount of damage to vines. "We came up with the design, tested it in the field, and then changed some parts," says Li. "It's a project by me and a tractor specialist named Tang Zunfeng from the China Agricultural Machinery Institute."

As well as alleviating labour shortages, the tractor can increase the speed and consistency of the work. Speed is crucial. Covering and uncovering vines generally falls within a two-week period. In the autumn, bury too soon and the vines are too green; wait too long and the

ground is frozen. In the spring, uncover too early and the ground could refreeze; wait too long and you could get bud break while the vines are underground, an event Li describes as a "disaster".

"Increasing burial speed will create enormous benefits," says Ma Huiqin, a professor at China Agricultural University in Beijing. "The biggest issue is timing. If you can reduce the process from a week or more to a few days, then you gain a lot of flexibility."

When considering wine in the larger picture of agriculture in Xinjiang, one obvious question arises: If there is so much labour pressure, aren't larger sectors such as those for tomatoes and cotton also experimenting with mechanisation to reduce the need for workers, and won't that make it easier for the wine sector?

Viticulture ahead

Li says mechanisation is actually easier for those crops since the equipment already exists for tasks like planting seedlings and harvesting. The problem: small landholders still find it cheaper to use manual labour given economies of scale. In fact, it is the larger scale of wineries such as Wang Zhong that allow for experimentation. "Operations like Wang Zhong have more money," says Li. "For example, we went through three tractors when developing our fertilizing equipment [which uses an oil industry grade drill to penetrate to 75 cm]. The first one was not powerful enough. We got a second one. It was more effective but still did not reach our standards. The third one was even bigger and we are using it now."

Professor Ma notes that as dozens of new vineyards are being planted in Ningxia, one of the country's most promising regions, they are done with mechanisation in mind. "The managers are aware that a shortage of workers is possible and are preparing for it," she says.

And those owners might well soon be heading for Wang Zhong. For even as this new operation as already producing good wines, it's most popular product might turn out to be one that can save its competitors a lot of money: the tractor. ■