Chinese ginger shows better crop development and improved yield with Qrop® KS

China's ginger cultivation area is about 30.000 hectares, with a total yield of harvested produce of more than 2 million tons. The main planting area in the Shandong province accounts for roughly 66% of the total area, while the yield accounts for 75% of China’s ginger production.

Weifang district (Shandong province) is targeted to introduce SQM’s Qrop® programme. This market is developed by the Qrop® Mix team: Li Zhaobao (team leader), Wang Guoqiang and Li Guodong. To gain synergy, the SQM Beijing team is also involved.

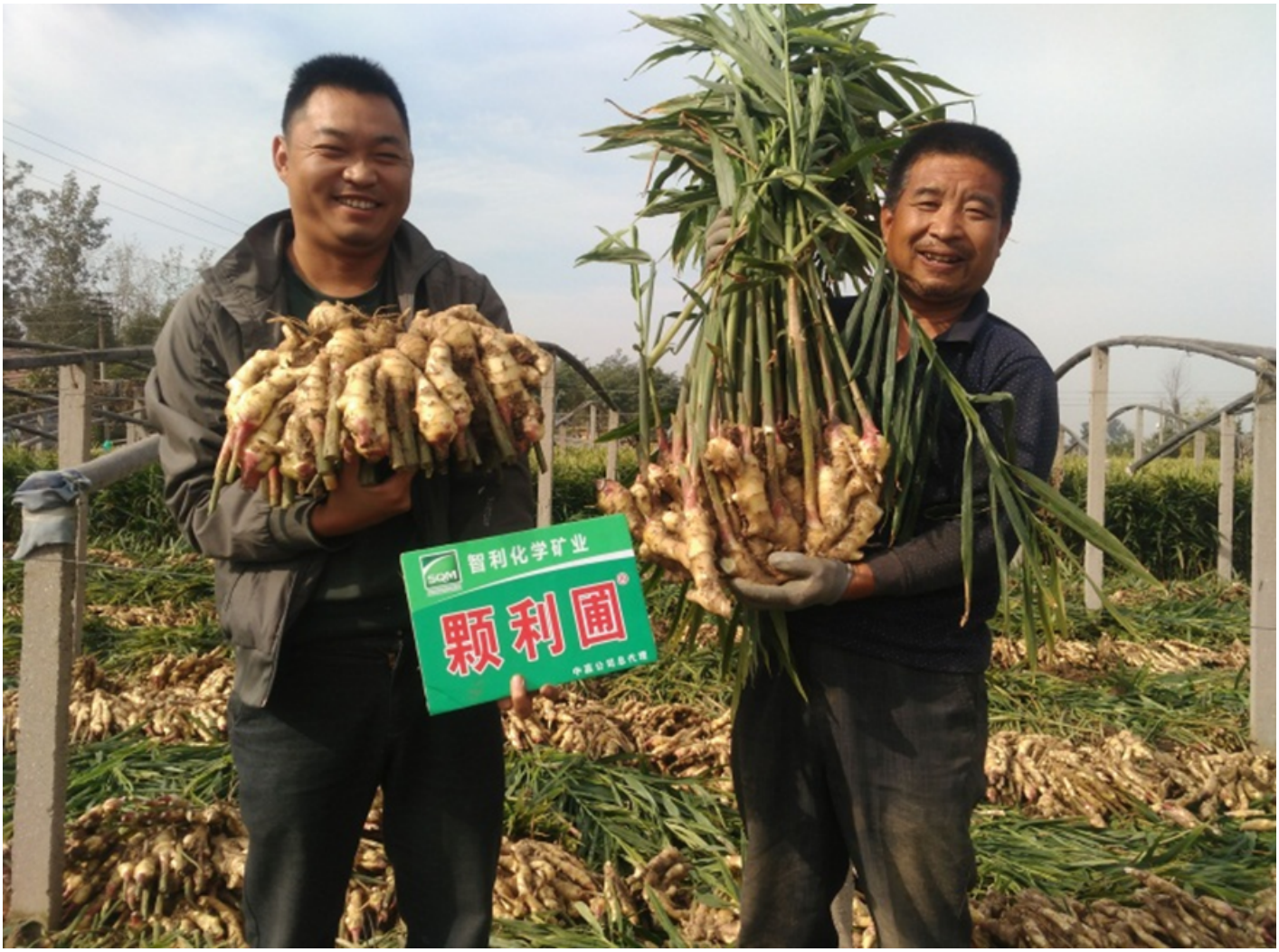

Image 1. Happy farmer (right) and dealer's sales person (left).

In a demonstration trial in ginger in China, all crop development parameters benefited from the SQM programme based on Qrop® Mix Production and Qrop® KS over the farmers programme.

The bigger plants were base for an 11% increase in fresh weight of the harvested ginger rhizomes.

Li Guodong, a member of SQM China's Qrop® Mix team, conducted a trial to test the replacement of two traditional granular NPK's by Qrop® formulas on a farmers field.

The SQM programme is calculated to provide balanced nutrition to meet the crop needs. With SQM, the farmer applies less fertiliser at equal costs, but with the benefit of a higher quality of fertiliser used in the SQM programme.

Replacement of two of the farmer's granular NPK applications with Qrop® formulas was tested on a farmer's field on ginger cultivated under plastic tunnels. The protected cultivation was chosen as it enables to perform the trial in the early season, speeding up the development of the programme. The farmers field was divided into two plots of each 333 m^2: on one plot the SQM ginger programme was adopted, and on the other the farmer's own programme was applied (Table 1).

Table 1. Fertiliser applied in the test.

Application Aplicación	Formula Fórmula	SQM kg/ha	Farmer / Agricultor kg/ha
Base dressing before planting April 5 Tratamiento base antes de plantar el 5 de abril	15-15-15	450	450
Soil application June 25 Aplicación al suelo el 25 de junio	Qrop® Mix Production 13-0-23+8Ca	375	–
	NPK 12-12-17	–	528
Soil application June 5 Aplicación al suelo el 5 de junio	19-19-19	75	75
Soil application August 5 Aplicación al suelo el 5 de Agosto	Qrop® KS 12-0-46	563	–
	NPK 12-12-17	–	793
Soil application August 20 Aplicación al suelo el 20 de Agosto	13-5-38	75	75
Soil application August 30 Aplicación al suelo el 30 de Agosto	13-5-38	75	75
Total fertiliser $N:P_2O_5:K_2O$ Fertilizante total		1613 218:89:484	1996 260:248:363

Table 2. Crop development and gross ginger rhizome yield in averages of 10 plants/treatment.

Treatment Tratamiento	Leaf length Longitud de la hoja (cm)	Leaf width Ancho de la hoja (cm)	Leaf thickness Grosor de la hoja (mm)	Stem perimeter Perímetro del tallo (mm)	Weight of single plant Peso de la planta individual (kg/plant) / (kg / planta)
SQM	30	17	1,1	15	3,0
Farmer Agricultor	28	15	0,9	12	2,7
Benefit of SQM programme **Beneficio del programa SQM**	2	2	0,2	3	0,3
	7%	13%	22%	25%	11%

Results Highlights

The visual benefits of the SQM programme were very convincing: improved crop development, enlarged leaf size, and increased height and thickness of the ginger stem. The bigger plants were base for an 11% yield benefit in gross rhizome weight (Table 2).

This programme facilitates application of a balanced ratio of nitrogen and potassium, together with sufficient supply of calcium. The SQM programme also improved the sustainable cultivation of ginger, by reducing the application of phosphorous by more than 60%.

The communication of the results from this trial is focused on the increased plant size and improved crop development rather than on yield in MT/ha. The crop was grown in a plastic tunnel greenhouse where yield is higher than in the conventional open field cropping systems. Moreover, yield was determined as gross fresh ginger weight. In practice, freshly harvested rhizomes are stored after harvest, and will around 40% of weight when farmer sells.

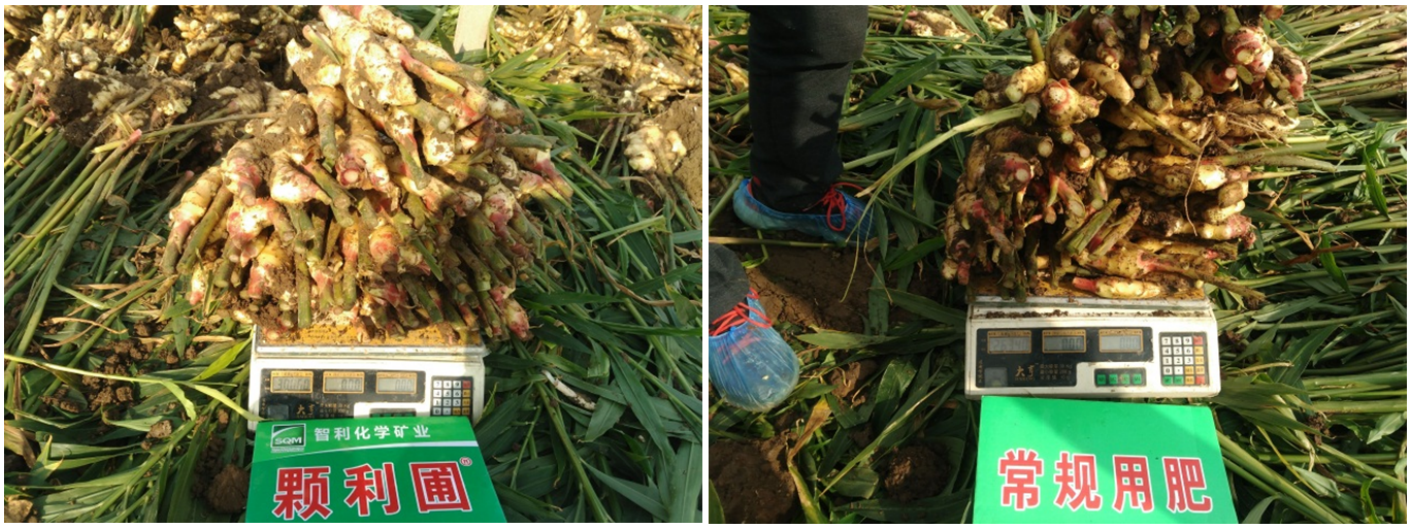

Image 2. Performance test: on the left SQM Qrop® Mix, on the right the farmer's usual practice.

Image 3. Li Guodong of the Qrop® Mix team conducted the test and followed up. In the photo he is holding a freshly harvested ginger plant.

What is next?

Both farmer and dealer's sales people are satisfied with the performance of the SQM programme, and the results inspire confidence to further explore the benefits that Qrop® formulas can bring to ginger farmers in China.