



v/d Grond: Onions
Dutch journal for the agricultural sector

Better distribution of onion sets in rows

“Calculators are clearly underused”, says Pim Sturm of Contracting firm Sturm Jacobs in Wieringerwerf. That is because they can help to determine possible higher returns.

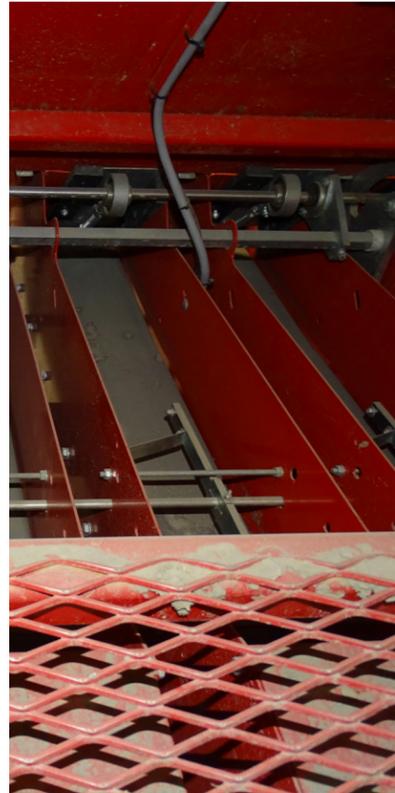
Text: Ulko Stoll

Using a calculator and a notepad, Sturm sets to work: eight rows on a 2.25 m wide bed of onion sets on a parcel length of 250 meters will produce 142 rows. Nine rows on a similar size bed will produce 160 rows. That is more than 12 per cent extra space for the onions. If 9 rows on a bed are still planted with 20 onions per metre, this also means 12% more yield per hectare.

Careful

However, the extra row of 2.25 on the bed is subject to an even distribution in each row. That is because only an even distribution in each row will result in maximum yield. And that is where the WIFO precision planter comes in. The precision planter is an advanced model of the so-called ‘Koningsplanter’, which was developed for planting seed potatoes. It is used for the careful placement of pre-germinated seed potatoes in the ground at regular intervals. The Koningsplanter was further developed into a precision planter for onion sets, based on the same principle: carefully putting onions in the ground at regular intervals. On the precision planter, the onion sets run from a bunker on a combination of a

singulation conveyer and a horizontal vibratory plate next to it. At right angles to the singulation conveyer is a width-adjustable vibratory plate. The width of this vertical vibratory plate is easily adjustable to neatly place the onions, one after the other, on the singulation conveyer. The fall height is limited because the singulation conveyer runs down to almost the level of the planting foot. In the downward direction, the onion is held by the hedgehog belt above it. The onion is not released until it has reached the planting foot. Planting occurs behind the machine, which makes it possible for the onions to lie still on the machine in relation to the ground. After all, the belts are running in reverse. Due to the low speed in relation to the ground, the onions are not rolling over but lie still where they are dropped.



Planted by means of the precision planter



Squeezed together

Contracting firm Sturm Jacobs has a long experience with planting onions and was approached by customers for improving the distribution in rows. And here, Sturm goes for the calculator once again. An uneven distribution results in onions being bunched up and getting in each other's way. As a result, they are squeezed flat or remain too small. Better distribution will reduce the percentage of deformed or undersized onions. And a high percentage of larger onions will always yield a better price.

Demands

WIFO's Gauke Kuiken talks about the role of the modern-day machine suppliers. “We do not sell two identical machines.” All our machines are put together in consultation with the customers. We have developed precision planters for growing shallots, garlic and mini-tubers. Machines for heavy clay require different pressure wheels than those for sandy clay. Conveyers can be driven by the wheels. Or it can be driven by hydraulics. It all depends on the use and on what customers demand.

Contradictory

‘v/d Grond’ joins the conversation of Sturm and Kuiken. The conversation moves towards growing onion sets, of course. Kuiken quotes an onion set grower as saying: “22 plants per metre and 1,500 kg/ha are needed for planting onion sets.” The conversation points at a contradiction in these figures. It can only be achieved by narrowly sorting the planting lot. But not for coarse gradings with longer distances in the row. Finer grading requires more onions per metre. Coarse onions are also planted deeper in the ground than fine onions. By using the precision planter it would make much more sense to also sort the plant material more accurately. Due to the precision distribution in the row, the machine can be adjusted to the number and depth of planting for small grades. Pre-sorting may result in extra costs, but that would be a matter of weighing one thing against another.

Traditionally planted



Space

The onion field planted by means of the precision planter is visited and compared to an adjacent parcel planted by means of the traditional planting machine, of course. By and large, they contain the same amount of onions per metre, but the traditional planting method results in many onions ‘bunched’ together and inevitably they are in each other's way during the growing process. In addition, there are many empty spaces in the row where nothing is growing at all. The parcel on which the precision planter was used shows no signs of ‘bunched’ onions. There is also a much more even distribution within the row. The distribution in the row raises the question that perhaps more could have been planted. Better distribution does indeed create space. Martijn Laan of Contracting firm Sturm Jacobs is the man running the tractor for the precision planter. After calibration, the machine requires no further adjustments during the planting process. The machine can reach a speed of approx. 5 km/hour. That is sufficient.

Onion sets are a substantial part of onion growing. According to the Netherlands Bureau of Statistics, the area planted with onion sets in 2018 is more than 9,000 ha, an increase of 1,200 ha compared to 2017. And that is more than a quarter of the total onion acreage in the Netherlands. The Netherlands Bureau of Statistics does not specify the amount of 1st year onion sets and shallots. It is therefore hard to determine the exact area of 2nd year onion sets. However, the figures clearly show that onion set cultivation is growing and makes up a substantial part of the onion market. It comes therefore as no surprise that new techniques have been and will be developed for onion set cultivation. An excellent example is the precision planter. And those who can work a calculator will soon come to the conclusion that a better distribution in the row will result in a higher yield.