

Stakes for Kameleon(-High) and Woodpecker



Netafim supplies a complete package of different stakes for fully assembled driplines with Kameleon(-High) and Woodpecker stakes. Each stake has different properties. The most suitable stake is best to be chosen according to the user's insight and cultivation type.

Rapier stake

The Rapier stake has been outselling all other stakes by far for over 20 years. This angled stake offers the optimal combination for use in large-scale substrate cultivation systems.



Rapier Smooth

The angled Rapier Smooth stake is particularly notable for its insensitivity to root growth; so-called anti-root intrusion. In addition, less cultivation medium remains on the stake. Because this affects water guidance in particular, this stake is the preferred option in specific cases.



Rapier Light

The angled Rapier Light is specially designed for starting in a sterile environment after crop rotation, as the stakes are simply replaced with every crop rotation. This stake has similar properties as the successful Rapier, but is lightweight and therefore more competitively priced. This stake can only be supplied separately, not pre-assembled.



Prevo stake

Usually, an angled stake is preferred, but in some cases a straight stake can be useful: the Prevo. This stake is, for example, easier to remove from above from a fully grown crop.



TECHNICAL DATA

	Model	Length	Diameter	Max. flow rate	Connection	Material	Colour(s)
Rapier stake	angled	16 cm	7.6 mm	8.5 l/h	Barb 5 x 3 mm	PP	black, blue, (red)
Rapier Smooth	angled	15.5 cm	6.8 mm	8.5 l/h	Barb 5 x 3 mm	PP	black
Rapier Light	angled	14.5 cm	6.3 mm	12 l/h	Barb 5 x 3 mm	PP	black
Prevo stake	straight	14 cm	7.0 mm	6 l/h *	Barb 5 x 3 mm	PP	black, blue

* maximum flow rate of 12 l/h for the Prevo stake with a Woodpecker dripper

Features of the Rapier stake

The properties of each stake, such as water guidance, vary to a greater or lesser extent. These properties can influence each other and may reinforce each other or even work against each other in some cases. For example, a stake that is highly resistant to root in-growth may perform worse in terms of water guidance.

Stake properties

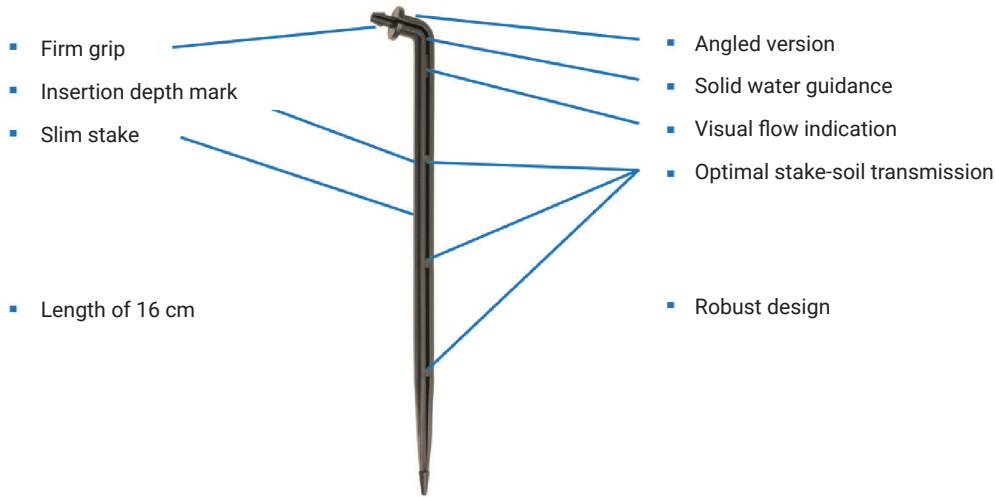


Diagram of mutual influences

The stake properties and their mutual influences are depicted in the table below

	Water guidance	Machine assembly	Large water passage	Robust design	Anti root-intrusion	Insertion depth marks	Visual flow indication	Optimal stake-soil transmission	Anti-dirt adhesion design	Seal-off plugging tip	Displacement of cultivation medium
Water guidance			Work against		Work against		Work against		Work against		
Machine assembly				Reinforce							
Large water passage	Work against										
Robust design		Reinforce									Work against
Anti root-intrusion	Work against						Reinforce	Work against	Reinforce		
Insertion depth marks											
Visual flow indication	Work against				Reinforce						
Optimal stake-soil transmission					Work against				Work against		Reinforce
Anti-dirt adhesion design	Work against				Reinforce			Work against			
Seal-off plugging tip											
Displacement of cultivation medium				Work against				Reinforce			

Work against each other Reinforce each other

Water guidance

In today's irrigation practice, water guidance is perhaps a stake's most important property. If irrigation water does not follow the stake's water passage, but is falling next to the cultivation medium, it will immediately cause crop damage. Every stake guides water to a greater or lesser extent. If a stake guides water well, it will still run down it if the stake is at an angle or in almost horizontal position. This applies in every direction; sideways, backwards and forwards. It is important to place stakes with poor water guidance in an upright position, and make sure they remain in this position throughout the whole cultivation cycle.

Machine assembly and robust design

Not all stakes are suitable for handling with assembly machinery. In this case we are referring to the availability of machines that can handle a certain stake, and if the stake is sufficiently robust to remain straight during the process of rolling up and stacking assembled driplines.

Large water passage

A large water passage is important to prevent blockages at the stake. However, water guidance can deteriorate significantly if the water passage is too large. This results in leakages at the stake, causing the irrigation water to no longer reach the plant but instead end up on the ground next to the growth medium or pot. This can lead to various problems, such as a soft ground surface, algae, and weed growth.

Anti root-intrusion

Roots seek water; it is the very reason for their existence. However, roots must be prevented from growing into the stake and the microtube, because then they can block the irrigation water supply. All stakes are designed to restrict root-intrusion to a greater or lesser extent. In general, the smoother the stake, the lower the risk of root-intrusion. However, the water guidance of a smooth stake is lower.

Insertion depth mark

Not all stakes have insertion depth marks. Even if a stake does have these marks, it may be necessary to ignore them in practice due to different growing approach or choice of cultivation medium. However, these marks are often used to determine the insertion depth, such as inserting the stake 2 cm below the mark.

Visual flow indication

This means that the flow rate can be observed on the stake without temporarily removing it from the cultivation medium, which could cause contamination. However, clear visibility of the water flow compromises the stake's water guidance capability. If you can watch the water droplet falling through the 'eye' of the stake, tilting the stake slightly will prevent the droplet from running along the stake, potentially causing it to drip down beside the cultivation medium. Additionally, the irrigation cycle is often very short, and with the large number of stakes involved, it is impossible to determine which plant is receiving water just by visual observation.

Assessment based on properties

	Water guidance	Use of assembly machinery	Large water passage	Robust design	Anti root-intrusion	Insertion depth marks	Visual flow indication	Optimal soil-stake transmission	Anti-dirt adhesion design	Seal-off plugging tip	Displacement of cultivation medium
Rapier	++	yes	+	++	+/-	yes	+/-	++	+/-	yes	low
Smooth	+/-	yes	+	+/-	++	no	+	+/-	++	no	low
Light	++	no	+	+/-	+/-	yes	+/-	++	+/-	yes	low
Prevo	+/-	yes	+	+	++	no	++	+/-	++	no	low

+/- normal

+ good

++ best

Optimal stake-soil transmission

It is important that the irrigation water is transferred from the stake to the top level of the cultivation medium as efficiently as possible. After all, getting moisture into the bottom level of the medium is not that difficult, but getting it into the top level actually is.

Anti-dirt adhesion design

To prevent disease from being transferred from an old crop to a new crop, the stake is designed to minimise cultivation medium sticking to it when the stake is removed and replaced. The smoother the stake, the less medium will stick to it. However, a stake that is too smooth also has poor water guidance.

Seal-off plugging tip

To (temporarily) close a water emitting point, some stakes have a plugging tip for seal-off. Inserting the stake the other way around into the microtube blocks the water flow.

Displacement of cultivation medium

Every stake displaces the cultivation medium when it is inserted. However, the goal is to keep the cultivation medium as tight as possible next to the stake so that the irrigation water can be transferred to the medium as quickly and as efficiently as possible. Unnecessary displacement of the cultivation medium delays the transfer of irrigation water into the medium and transfers water to the bottom level. This can lower the moisture content at the top of the cultivation medium and compromise the rooting environment.

Angled or straight

In general, an angled stake is preferred. This guides the microtube as flat as possible towards the Kameleon(-High) dripper, reducing the chance of damage when crops are cut or clipped, and minimizing the risk of anything getting caught behind the microtube. However, in situations where it may be necessary to remove the stake by pulling the microtube from above, a straight stake is a better solution.

Colours

Most stakes are available in different colours. These colours can be used to indicate different irrigation systems, such as one for a new crop planted between the old crop.



INSTALLATION AND MAINTENANCE

- ✓ Always insert the stake as upright as possible
- ✓ Insert the stakes at the same depth
- ✓ In very exceptional cases with the application of new stakes, the water may not run along the stake during the first irrigation cycle. This is always a short-lived problem. After a few irrigation cycles, the water will be guided along the stake well.

Cleaning

To ensure that a new crop starts to grow in a sterile environment, stakes are disinfected when the crop is rotated. This often involves removing the stakes from the microtube, cleaning them mechanically and chemically. Stakes can also be replaced; the Rapier Light is specially designed for this.

A solution of nitric acid is often used to clean chemical deposits from stakes (2-3 litres of nitric acid per 100 litres of water)

A solution of hydrogen peroxide is often used to clean biological deposits from stakes. Ask your supplier about the right concentration. Rinse the stakes thoroughly with clean water. Make sure cleaning agents do not reach the crop.