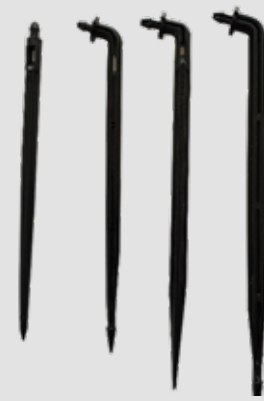


Stakes for Kameleon/ Kameleon High



Netafim supplies a complete package of different stakes for fully assembled driplines with Kameleon/ 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 type of cultivation.

Rapier stake

The Rapier stake has been outselling all other stakes by far for over 20 years. This right-angled stake ticks all the boxes when it comes to large-scale substrate cultivation systems.



Rapier Smooth

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



Rapier Light

The right-angled Rapier Light is specially designed for sterile starts after crop changes, as the stakes are simply replaced with every crop rotation. This stake has similar properties to the successful Rapier, but is lighter and therefore more competitively priced. This stake can only be supplied single, not pre-assembled.



Prevo stake

Usually, a right-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 a fully grown crop, from above.



TECHNICAL DATA

	Model	Length	Diameter	Max. flow rate	Connection	Material	Colour(s)
Rapier stake	right-angled	16 cm	7.6 mm	8.5 l/h	Barb 5 x 3 mm	PP	black, blue, (red)
Rapier Smooth	right-angled	15.5 cm	6.8 mm	8.5 l/h	Barb 5 x 3 mm	PP	black
Rapier Light	right-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 conductivity, vary to a greater or lesser extent. These properties can influence each other, and sometimes they can even work against each other. For example, a stake that is very resistant to root in-growth may perform worse in terms of water conduction.

Stake features

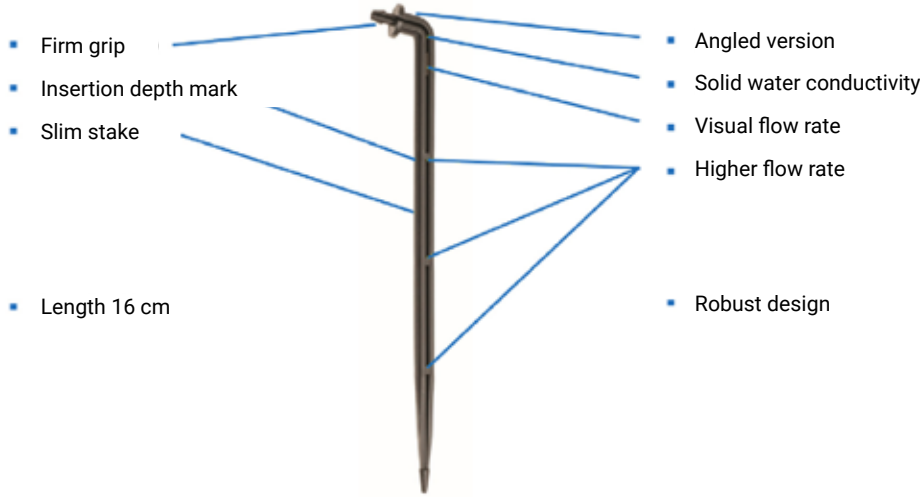


Diagram of mutual influences

The properties and how they influence each other are shown in the table below

	Water conductivity	Machine assembly	Large nominal size	Robust design	Anti root-ingrowth	Insertion depth marks	Visual flow rate	High flow rate	Anti-fouling design	Closure barb on the tip	Displacement of cultivation medium
Water conductivity			Work against		Work against		Work against		Work against		
Machine assembly				Reinforce							
Large nominal size	Work against										
Robust design		Reinforce									Work against
Anti root-ingrowth	Work against					Reinforce	Work against	Reinforce			
Insertion depth marks											
Visual flow rate	Work against				Reinforce						
High flow rate					Work against			Work against			Reinforce
Anti-fouling design	Work against				Reinforce			Work against			
Closure barb on the tip											
Displacement of cultivation medium				Work against				Reinforce			

Work against each other Reinforce each other

Water conductivity

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

Machine assembly and robust design

Not all stakes are suitable for handling with machinery. Here we are talking about whether machines exist that can handle the stake concerned, and if that stake is sufficiently robust to remain straight during the process of rolling up and stacking assembled driplines.

Large nominal size

A large nominal size is important to prevent blockages at the stake. However, water conductivity can deteriorate significantly if the nominal size is too large. This leads to leaks at the stake, and the irrigation water no longer reaching the plant but ending up on the ground next to the mat or pot. This can cause all kinds of problems, such as a soft surface, algae, and weed growth.

Anti root-ingrowth

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

Insertion depth mark

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

Visual flow rate

This means that the flow rate can be seen on the stake without temporarily removing the stake from the cultivation medium, which could cause contamination. However, clear visibility of the flow rate compromises the stake's water conductivity. This is because if you can see the drop falling through the "eye" of the stake, then tilting the stake slightly will prevent the drop from running along the stake, and it could end up dripping down beside the cultivation medium. In addition, the watering time is often very short, and the large number of stakes means it is impossible to determine which plant does or does not receive water just by observing "by eye".

	Water conductivity	Use of machinery	Large water nominal size	Robust design	Anti root-ingrowth	Insertion depth marks	Visual flow rate	High water flow rate	Anti-fouling design	Closure barb on the 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

High flow rate

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

Anti-fouling design

To prevent disease 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 is also a poor water conductor.

Closure barb on the tip

To turn a watering point off, some stakes have a closure barb. Inserting the stake the other way around in the microtube turns the irrigation off.

Displacement of cultivation medium

Every stake displaces the cultivation medium when it is inserted. However, the idea is to keep the cultivation medium next to the stake as tightly as possible, so that the irrigation water can be transferred to the medium as quickly and as much as possible. Unnecessary displacement of the cultivation medium means that the irrigation water is only transferred to the medium later/ lower. This can reduce the moisture content at the top of the cultivation medium, and compromise the rooting environment.

Right-angled or straight

In general, a right-angled stake is preferred. This guides the microtube as flat as possible towards the Kameleon/ Kameleon High dripper, and reduces the chance that the microtube will be damaged when the crops are cut, clipped, etc., or that something can get caught behind the microtube. Sometimes, it may be desirable to remove the stake by pulling the microtube from above. In such a case, a straight stake is a better solution.

Colours

Most stakes are available in different colours. These colours can be used to indicate different water 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 new stakes, the water may not run along the stake during the first watering. This is always a short-lived problem. After a few watering sessions, the water will run along the stake well.

Cleaning

To ensure that a new crop has as sterile a start as possible, stakes are disinfected when the crop is changed. This often involves removing them from the microtube, then 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 correct concentration. Rinse the stakes thoroughly with clean water. Make sure cleaning agents do not reach the crop.