



## The asparagus plant, a rechargeable battery.

The behaviour of asparagus plants is very similar to an ordinary or rechargeable battery. When the plant produces fronds above the ground the battery is being charged, the dynamo can be compared to sunlight, water and minerals. If this process proceeds well, the battery is bursting with carbohydrates at the end of the autumn. The battery starts to run down when the elements that charge it have disappeared. During the winter months the plant uses the reserves it has built up to survive. This energy store is also used when the first stems start to appear again in the spring. When the harvesting season begins the capacity of the battery is tested to the full and as the season progresses the battery capacity becomes lower and lower. With early varieties in particular, farmers may be tempted to keep on harvesting for longer - certainly if prices are high. However, don't forget that part of the plant's energy is still required to establish a good fern canopy later on in the season so the plant can start recharging its battery again. Apart from measuring the assimilate store, the development of spear thickness is a practical and excellent indication. Thinner spears later in the season mean that the plant's fuel indicator is in the red zone - in other words a clear warning to stop harvesting.

Try to stop before this critical stage. Choose favourable weather conditions so that the first and most crucial ferns can grow develop strongly. This will give the best guarantee of fully recharging the power store and ensuring good production levels in the following year. A rule of thumb for a healthy field in full production is 55 harvesting days. A two-year-old crop can be harvested for 30 days, and in the first year stick to an approximately 20-day harvest. However, this guideline can be deviated from if the circumstances (hot weather so higher production) dictate.

photo: Peter Strobl,  
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**Limseeds®**  
the asparagus breeding company

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## 100% male with berries?

As widely known, all the varieties marketed by Limseeds are 100% male. The disadvantages of female plants, approximately 20% low production, tendency to lodge, shorter life span and storage of plants is avoided. However, and rightly so, we are sometimes asked about berry producing plants. Male plants aren't supposed to bear berries, after all. This occurrence is not as rare as it would seem. Its scientific name is hermaphroditism and it also occurs in other varieties of plants. A

hermaphrodite is defined as any individual organism that possesses both male and female reproductive organs. This can cause confusion as to the true sex. The berries that appear on the male asparagus plant are often smaller and not as spherical as the berries on female plants. The seeds in these berries are small, white and irregular in shape, plus they have hardly any potential to germinate. It is assumed that stress factors encourage berry formation on male plants.

# White asparagus shouldn't be pink.

The tips of asparagus turning a faint pink is a problem that occurs in the last phase of growing in the beds and post harvesting. Asparagus with pink tips is graded in a lower class and therefore realises lower market prices. Temperature and light are two factors that greatly influence the occurrence of pink tips. All the measures taken to minimise the influence of these two factors will reduce pink discoloration, improve keepability and promote a higher quality product.

Measures to prevent pink discoloration start right at the beds by adapting the harvesting frequency to suit the weather conditions and good management of the plastic mulch. If thermal plastic is used then harvesting twice daily is absolutely vital to help limit pink discoloration (caused by light). If light excluding plastic mulch is used, then the temperature causes the problem, so harvest at least once every 2 days in this case. With temperatures above 23 °C, this frequency must also be increased to once a day.

Good post harvest care begins immediately the asparagus has been

picked by placing the spears in water and protecting them from sunlight and dehydration to prevent pink discoloration. Ensure you are well equipped; provide ample containers and water (the colder, the better) and good material to cover the asparagus. Remember the first hours after picking are the most important ones of the entire post harvest procedure.

Keep the time the asparagus spends on the fields after picking as short as possible, bring the spears to the packing shed as quickly as possible but certainly within 2 hours after harvesting.

A reliable and proven method of post harvest treatment in the grading and packing station is to use a pre-washer to shock cool the asparagus and then store them in a cold store which can be humidified at 1-3 °C with an RH of minimum 95%. Cooling without shock cooling is possible but the temperature of the spears drops much slower, so the ageing process continues for longer. Another good method is to keep the asparagus under water at a temperature no higher than 12 °C for about 6 hours, before storing them in a cold store. Although this method of cooling is more gradual, both storage methods deliver



good results Plunging the asparagus into water also serves to delay the dehydration that occurs during storage.

Pink discoloration can be prevented provided working practice during and post-harvest is properly organised. However, high quality can only be achieved if all links in the production chain are equally strong. As far as the choice of variety is concerned, Grolim and Backlim have the least susceptibility to pink discoloration.

## To plough or not to plough?

In recent years there has been a growing trend towards leaving the beds untreated after harvesting has finished. The beds are fertilised and treated for weeds, but then left intact. The main reason is to protect the developing roots and shoots from damage, which is quite a logical motive. However, in a number of cases it can be more beneficial to plough the beds. Ploughing has the advantage that the

vertical growth of the asparagus plant is retarded as the head of the plant is placed in a more oxygen rich environment. In fields which experience greater problems with physiological rust, ploughing may serve to reduce the problem occurring next year. This effect can also be achieved by ploughing the bed to a level just above the head of the plant in the late autumn.

## Company information

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