

DALIVAL

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DALIVAL SCOPE



EDITO



Dear partners and stakeholders of our fruit industry, Now that winter has settled in and 2025 has begun, it is time to take stock of our

sector and the challenges ahead. The current economic environment remains unstable, but at Dalival we choose to turn these disruptions into opportunities for innovation and adaptation.

This is a strategic period: while the lifting of trees and grading are coming to an end, we are already preparing the future tree nursery for 2026-2027. This dynamic requires rigorous organisation to meet your expectations, and our sales team is more than ever ready to help.

In this Dalivalscope, we highlight our nursery expertise, with a focus on double-axis trees and a comparison of rootstocks suited to cider production. Dalival is also continuing to expand its range with new apple and pear varieties selected by IFO for their productivity, storage potential and adaptation to climate change.

Finally, we highlight our stone fruit range, a key segment in our history, always developed with rigour and passion.

We hope you enjoy reading this Dalivalscope and look forward to sharing our thoughts with you throughout the season!

All the best,
Thomas PIOUS

ORCHARD VISITS, TASTINGS AND TRADE FAIRS:



How can you discover our new products?

The best way is to come and visit us at harvest time. Our team will welcome you to our demonstration orchards (in Angers or Villers-Cotterêts for pip fruit, and in Montélimar for stone fruit), where you can compare several clones of the same variety, and see, touch and taste our new and soon-to-be-launched varieties*.



Is harvest time too busy for you to be away?

Contact our sales team and representatives to organise a variety tasting on our premises after the harvest or in your region, in our agents' trial orchards. And don't hesitate to come and meet us at trade fairs: we always exhibit our latest products and propose fruit for tasting.

**Please note that these visits only take the form of guided tours, and it is essential to make an appointment in advance with one of our representatives (see contacts on page 4). They will work with you to determine the best date for a visit according to your interests (early, mid-season, late varieties).*

THE IFO STONE FRUIT TRIAL ORCHARD

In 2022, IFO created an experimental orchard dedicated specifically to the study and evaluation of stone fruit species.

This orchard is located in the immediate neighbourhood of the DALIVAL Montélimar site, which is responsible for its maintenance and operational management.

Three species are being studied (apricot, peach and cherry), each with dozens of varieties coming from breeding programmes around the world.

The aim is to study the behaviour of these varieties in the Rhône Valley and to select the best new varieties to improve the existing range. The criteria observed

are blossom dates, ripening periods, productivity, colouring and hardness, in comparison with control varieties. Once this initial stage has been completed, the selected varieties are sent to other trial sites in other production areas.

If, after several years of observation, the feedback confirms the interest of the variety, it will be protected, named and made available to French and European fruit growers.

To date, this young IFO Stone fruit orchard counts 135 varieties, to which around ten new selections will be added each year.



DOUBLE AXIS TREE PRODUCTION

Trees have been grown in 2-, 3- or 4-axis orchards for several decades. Back then, it was the grower who trained his trees after planting. The change is that the tree with 2 axes is now trained by the nurseryman, who delivers a tree with 2 stems ready to be planted in the customer's orchard.

The advantages of the double axis:

With tree training no longer a barrier, the advantages of a double-axis orchard can be reconsidered. These advantages are amplified by the increased cost of labour and the lack of skills among the workforce.

Technical advisers recommend planting orchards with a narrow fruit wall, starting with double-axis trees, because :

- The fruit wall is made up of short branches, making pruning, manual thinning and harvesting easier, resulting in lower costs.
- The fruit will be better exposed to light, which will result in better colouring, a higher sugar content and therefore better quality fruit and a higher packing rate.
- As the trees are smaller, phytosanitary treatments are more effective.

Nursery production:

For several years, Dalival's nursery managers have been working on the production process for double-axis trees and have developed several methods for producing nice double-axis trees:

- The rootstocks dedicated to this production are carefully selected and above all they are planted in fields with different planting distances from the rest of the nursery.
- The teams working on these trees are dedicated to this production.
- The criteria for grading the finished trees have been refined.



Planting at the customer's:

The tree delivered is therefore pre-shaped and ready to be planted in the orchard, without any further training. Planting distances in the orchard are generally 1.2 m in the row between the trees (to be able to grow an axis every 0.6 m) with a row spacing of between 3.2 and 3.5 metres (i.e. 2,380 to 2,600 trees/ha). This distance is closely linked to the choice of variety, rootstock and the history of the land. Just before planting, the root system of the trees should be soaked for 24 to 48 hours.

Immediately after planting, all the axes should be well tied (the trellis should therefore be installed before planting) and well watered. Double-axis trees are by definition more vigorous than single-axis trees and will therefore need to be fed more generously.

Appropriate fertilisation should be considered to help them respond quickly to their high needs in terms of root and aerial development. This will depend on the soil analyses carried out before planting, so as to cover any deficiencies in the soil, paying particular attention to the phosphorus and nitrogen available in the soil in the first 3 years after planting.

Recommended rootstocks:

What is required of a double axis tree is to grow rapidly up to the top of the trellis so that the fruit wall can establish itself. The choice of rootstock is therefore essential, as it will not only enable the tree to grow quickly, but will also provide sufficient supply for the two production axes. We particularly recommend Geneva® G11, M200 and Geneva® G935 rootstocks for this type of tree.

Buying double axis trees from Dalival

Even more than for traditional trees, it is important to order your double axis trees 2 years in advance to ensure that you have the desired variety/rootstock combination and so that we can plan the land needed for this nursery.



Louison LAISSUS

(Technical advisor for SAS Tech'pom, France)



What is your experience with double axis trees?

We have had regular customers using double-axis trees for around 5 years now. We like this type of tree, which makes it easier to manage and start production faster. It is compatible with mechanisation (cutting blade, leaf removal machine...) and allows simple pruning instructions that are within the reach of unskilled labour.

At harvest time, the fruit takes on better colour and is much more accessible.

What qualities should a nursery tree have?

As with single axis, the more uniform the trees, the better! The aim is to have a tree with at least ten branches of uniform cross-section.

What should be considered when planting and how should the orchard be managed?

It is important to prepare the soil well before planting, and to trellis the trees well, respecting regular attachment distances and following a U shape. You also need to remove branches that are too strong or have closed angles. In narrow orchards, with 3 metres or less between rows, when we want to create a hedge, we cut back most of the branches to 25 cm, to encourage fruit buds to emerge. Depending on the variety and the spacing between rows, we can also keep a few longer branches at the bottom of the trees (which will not interfere with colouring).

Which rootstock is best for double-axis cultivation?

G11 meets many of our expectations (replanting, vigour, branching, etc.).



François RICHARD

(Technical Manager, Pomanjou Orchards, France)



What is your experience with double axis trees?

We have been planting double axis trees since 2021. The double axis is not an end in itself. However, it is part of an overall innovation system in which labour optimisation is the keystone. In this respect, combining a vigorous rootstock with this type of tree offers even more possibilities, depending on the situation of the land. This enables us to meet the challenges facing fruit growers, such as:

- limiting the cost of planting compared with a single axis for an equivalent planting density.
- Standardising harvesting, pruning and trellising tasks.
- Distributing vigour more evenly and bringing fruit closer to the trunk to increase its fruit size.

Which rootstock is recommended for double-axis cultivation?

At present, the rootstock G11 completes the double axis technique and offers fruit growers a wide range of solutions:

- G11 compensates for the lack of vigour induced by the double axis.
- The G11 generates a more open angle between the branches and the trunk with all varieties.
- G11 makes it easier to manage the tree growth.
- G11 is more productive than M9.

Note from Dalival: Louison Laissus and François Richard have little or no experience with the more recent M200 rootstock, which we also recommend for a double-axis orchard.

THE M116, MM111 AND M25 ROOTSTOCKS from the East Malling programme for apple orchards dedicated to processing

The choice of rootstock is a crucial stage in the success of apple orchards, particularly those dedicated to the production of apples for processing (cider, juice, compote and distillation). Rootstocks have a direct influence on the vigour, longevity, tolerance of soil and climatic stresses, susceptibility to disease and productivity of the orchard.

Origin and characteristics of rootstocks from the East Malling programme

The East Malling programme (United Kingdom), which began in the early 20th century, is famous for its systematic selection of

apple rootstocks. These rootstocks are classified according to their vigour and their ability to adapt to different types of soil and climate. MM 106, M116, MM111 and M25 stand out for their moderate to high vigour and are mainly used for semi-intensive orchards. They have excellent compatibility and affinity with most apple varieties. Their root systems are strong enough to withstand mechanical shaking of the trees, but also to provide very good anchorage, unlike most rootstocks used in intensive dessert apple orchards.

**ROOTSTOCK M116 :
VERSATILITY AND RESILIENCE**

Characteristics: among the rootstocks produced by the East Malling programme, M116 is a semi-vigorous rootstock, with the same vigour as MM106, but very tolerant to phytophthora. It is one of the most recent and has already replaced MM106.

Advantages

- Highly tolerant to phytophthora ('crown rot')
- Very good productivity and fruit set speed
- Very good compatibility with most apple varieties tested
- Regular production with fruit of uniform calibre
- No or very few suckers (rootstock rejection)
- Very smooth grafting point, very little susceptibility to burr knots (aerial roots)
- Suitable for a wide range of soils.

Disadvantages

- Slightly susceptible to chlorosis in soils with high levels of active limestone.

**ROOTSTOCK MM111 :
TOLERANCE AND FLEXIBILITY**

Characteristics: MM111 (listed in the 1967 catalogue) is a more vigorous rootstock than M116. It is better suited to soils with low fertility and to low vigour varieties. It is of interest when replanting with soil fatigue, as well as for grafting very low vigour varieties.

Advantages

- High vigour
- Tolerant to chalky soils
- Good anchorage
- Fairly low susceptibility (but not resistant) to phytophthora

Disadvantages

- Somewhat susceptible to suckering and burr knots
- Susceptible to root asphyxia

**ROOTSTOCK M25 :
VIGOUR AND HARDINESS**

Characteristics: M25 (listed in the 1967 catalogue) is one of the most vigorous rootstocks available, slightly less vigorous than common apple (*Malus communis*).

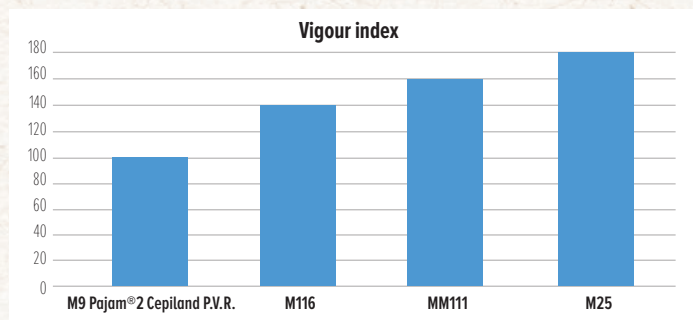
Advantages

- Very vigorous
- Not very susceptible to phytophthora
- Used for low vigour varieties in semi-intensive orchards
- Very good anchorage and affinity with varieties

Disadvantages

- Slower fruit set than MM106 and M116
- Lower productivity index than MM106 and M116
- May present difficulties in re-establishing after planting.

VIGOUR INDEX OF ROOTSTOCKS COMPARED WITH M9 PAJAM® 2 CEPILAND (BASE 100)



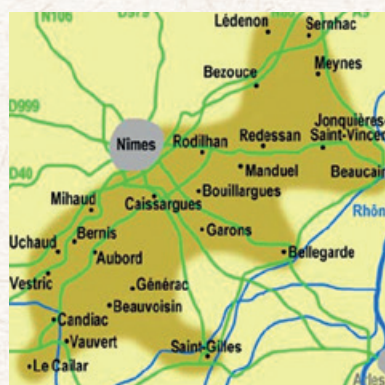
Conclusion

The M116, MM111 and M25 rootstocks offer diverse and effective solutions for apple orchards intended for processing. Choosing them depends on production objectives, soil and climate conditions, the vigour of the varieties used and planting densities. M116 stands out for its versatility and hardiness against phytophthora, while M111 is ideal for varieties with very low vigour or for less fertile soils. By combining these rootstocks with suitable apple varieties, growers can optimise the productivity of their orchards.

INFO STONE FRUIT

THE COSTIÈRES: A REGION OF PRODUCTION

Les Costières is a geographical region of France located in the Gard department, between the Camargue and the town of Nîmes. It forms a strip measuring around 40 kilometres by 15 kilometres in the south-east of Nîmes. Particularly well exposed, the Costières plateau is very gently sloping, with altitudes generally varying between 80 and 110 metres. The amount of sunshine and the proximity of the Mediterranean mean that the climate is not very frost-prone and the region is renowned for its early ripening. Comprising 24 communes, the Costières is a first choice area for fruit, wine and vegetable growing, characterised by filtering and very stony soils, ranging from ochre to red in places, giving a strong identity to the produce grown there. The region has a Mediterranean climate, hot in summer, mild in winter, sunny and regularly windy. This historic production region has 350 fruit farms, with a total of 6,800 ha of orchards. The main crop is apricots, which account for almost 20% of national production, followed by peaches and cherries.



Les Costières in figures:

- Average useful agricultural area for fruit farm: **19 ha**
- Average annual rainfall: **680 mm**
- Sunshine: **2 700 hours per year**
- Jobs generated by fruit growing: **1,770 ETP full-time equivalents**

Sources: Météo France; Agreste RA2020

THE VARIETY RANGE OF CRIPPS PINK MUTANTS IS EXTENDED*

2 new selections have been added to the range: Rosy Tess pvr and Rosy Sim pvr

• **Rosy Tess pvr** is a natural mutation of Rosy Glow pvr discovered in the Loire Valley in France in 2013. It sets colour early and has a slightly higher intensity and surface area than Rosy Glow pvr and Sekzie pvr. The 1st class rate is said to be higher, but this remains to be confirmed. Trees are available for sale from 24/25.

• **Rosy Sim pvr** is also a natural mutation of Rosy Glow pvr discovered in the Loire Valley in France in 2013. It shows earlier colouring, a more intense colouring surface and a more intense colouring than the other 3 clones (blushed mutant). The tree has fewer branches and appears to be less vigorous than the other 3 clones. The intensity of the colouring makes it an interesting candidate for testing in high-density orchards or in regions where colouring can be difficult to obtain. This mutant is still in the observation phase.

Reminder: **Rosy Glow pvr** is a natural mutation of Australian origin in the Cripps Pink variety discovered in the Adelaide region in 1995. The first mutation to be made available to European growers in 2005, it



has superior and more intense colouring potential than Cripps Pink, making it possible to improve the percentage of 1st class fruit.

Sekzie pvr is a natural mutation of Cripps Pink discovered in Hawkes Bay, New Zealand in 1996. This variety also has a higher level and intensity of colour than Cripps Pink. The absence of stripes is an advantage in certain regions and years when colouring is more limited.

Rosy Tess pvr and Rosy Sim pvr both set colour earlier and have a more intense final colour. These characteristics are

assets for increasing the rate of apples harvested in the first pick, meeting the demands of the most demanding markets in terms of colouring and improving the rate of 1st class.

**These varieties are protected by a Plant Variety Certificate (PVC), published by STAR FRUITS in partnership with EVI and distributed by approved nurseries as part of the PINK LADY® selective distribution network.*

NEW VARIETIES

STELLAR®

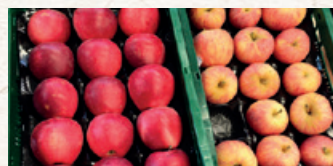


A variety specially developed for hot climates

After Tutti® Hot84A1, already planted on around a hundred hectares in Spain and England, Stellar® is the second apple variety to be developed under the HCP programme* (Hot Climate Programme). The HCP programme brings together New Zealand's Venture Fruit, responsible for marketing and licensing, IRTA (Catalan Institute of Agronomic Research) and Plant & Food Research (New Zealand Institute of Agricultural Research). Also known under the variety name HOT81A1, Stellar® is an apple variety specially developed to withstand high temperatures.

Stellar® is an early variety that can be harvested one week before Gala, giving an earlier start to the season. The fruit is balanced, neither too sweet nor too acidic, crunchy, juicy and easy to eat, just like Gala. This variety could be positioned in the same segment as Gala. The tree is easy to manage and the fruit has good storage qualities for an early variety (the variety stores at least as well as Gala according to storage data collected in Spain). Stellar® is distributed on an open access basis and is therefore accessible to all growers who request it. The first volumes of trees will be available from January 2026.

**The HCP programme was launched in 2002 at the request of the IRTA in response to the difficulties encountered by growers who could not find a variety suited to the climatic conditions in Catalonia - the region now has to cope with numerous heat waves and tropical nights, with temperatures not dropping below 25°C. The heat causes the fruit to ripen too quickly, leading to problems with colour, texture and yield. To date, few apple varieties are able to respond to the problem of global warming, so Stellar® is a real asset for growers in these areas.*



On the left Stellar®, on the right standard Gala, picked in the same orchard in Spain.

IORI pvr applied for

Iori is the result of a cross Topaz by Fuji carried out by the Swiss research station Agroscope. It is a bicoloured fruit with a tangy flavour at harvest, which softens after storage to produce a balanced, aromatic, crunchy and juicy taste.

It is one of our best varieties for eating after storage. The tree is productive and resistant to common strains of scab, with low susceptibility to powdery mildew. The fruit is harvested at the same time as Braeburn and the storage potential looks promising in all our trials.

Iori is freely available to all growers who request it. We recommend it for organic orchards or direct sales, in areas with good colour conditions, for spring sales, because of its eating qualities after storage.



NC4 MISTY ROSE® pvr

NC4 Misty Rose® is a new pear variety resulting between a Concorde crossed with Red Williams. The tree comes quickly into cropping, and over the years production has been regular and good, at a level similar to Conference and higher than Williams. The fruit is harvested 3 weeks after Conference, is purple-red at harvest but turns orange-red after storage. The flavour is good, with good Williams aromas. The fruit has good storage potential, but should preferably be stored at negative temperatures and ripened. Misty Rose® is a very interesting variety for its colour, eating qualities and yield potential.



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Your sales contacts



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