



**Advice&Consulting®**

FROM SEEDS TO SMILES



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"Ever since I was little, when I used to walk through fields full of the scent of the first peaches or run towards the ripening cherries, I have felt a sense of fulfilment and recognised the importance of farming for all of us.

**Bringing an orchard to fruition, building it up the way Advice&Consulting intends, is of great importance. It means respecting nature, harvesting the fruits it offers, using the earth carefully, choosing the most suitable plants and working with care and respect. All of this helps make the world a better place.**

Our recipe for a successful project lies in the study of the environment – water, soil and climate – and the dreams of the fruit grower, whose words guide us as we work.

Careful planning, the right choice of rootstocks and varieties, as well as planting schemes and agronomic management – all of this allows us to harvest the first fruit just a few months after putting the plants in the ground.

And it's not just about business, even though we do succeed in covering costs and making a profit more quickly than anyone else. For all of us at Advice&Consulting, fruit farming is all about creating something Good, a Sense of Wellbeing and a Future.

My wish is that everyone who puts their hopes and commitment into fruit growing, finds the motivation and strength necessary to pursue their goals. Advice & Consulting will be by your side, as a reputable and reliable ally, making your dreams come true".

From seeds to smiles.



**Alexandra Caminschi**

Managing Director  
Advice&Consulting

*A Caminschi*





## Welcome to Advice&Consulting, where competence, quality and innovation are at the service of fruit farming/fruit growers

Advice&Consulting is an Italian company that is passionately and actively committed to the **improvement** and **development** of the **fruit sector** around the world. It implements projects using **high quality standards**, with products strictly made and manufactured in Italy and its own agronomic consultancy, to **optimize all work processes** and the cultivated product.

Advice&Consulting is able to meet the specific needs of its customers, assisting them every step of the way, not only during the design but also in the management of each phase of the supply chain, up to the final, market-ready product. In partnership with the **foremost Italian companies in the agricultural sector**, it guarantees maximum efficiency in the most innovative technical solutions.

Specialized skills and accurate assistance are the main tools that guarantee the smiles of our customers, who see their investments materialize in functional projects, which in turn bear wonderful fruit to win the hearts of the end consumers.



# The fruit farming industry produces wealth, wellbeing and growth, all in harmony with Nature

At Advice&Consulting we design and custom-build businesses for agricultural entrepreneurs with the aim of guaranteeing a **profitable investment** in the shortest time possible.

**Italian quality** is the outstanding feature that distinguishes and offers added value to each project we carry out: cutting edge materials and manufacturing, professionalism and precision, timeliness and reliability are just some of the qualities we stand for.

**Know-how** is essential at every stage of the process, from the design and development to the management of intensive orchards, because it ensures the right choices that lead to the best results.

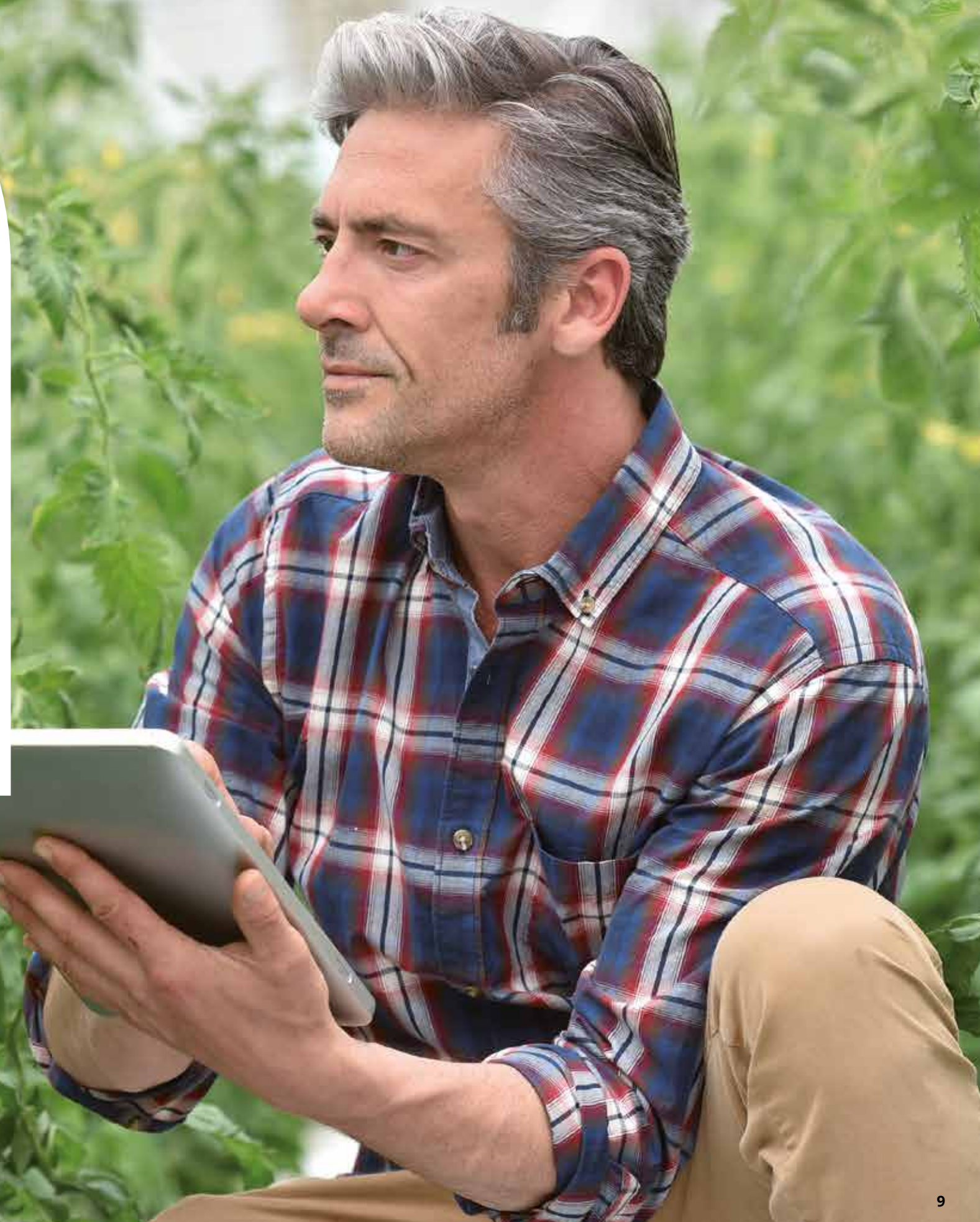
Advice&Consulting will accompany you along the road to bigger, better business, building lay solid foundations for ambitious new goals.





## Agronomic and specialized technical consultancy: know-how is the added value that Advice&Consulting gives to fruit growers

To achieve ambitious production objectives, in terms of both quality and quantity, it is essential to apply **agronomic skills and specialized techniques** at **every stage of orchard management**, from planting to the harvesting and storage of the fruit, which must keep all its organoleptic qualities intact, in order to reach the consumer's table in perfect condition. Advice&Consulting agronomists assist your company and take care of your orchard, through **online consultancy, regular onsite visits** and the theoretical and practical training of your internal staff. Our specialized technicians also follow you in the subsequent, post-harvest phases (preservation, sorting, packaging and sale).





# 1

## Feasibility study

Market analysis  
Terrain selection  
Analysis of the soil  
and irrigation water



# 2

## Cultivars and planting schemes

Choice of rootstock  
Choice of variety  
Planting density

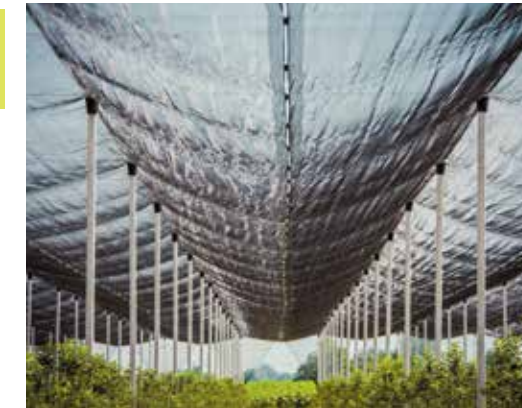


# Agronomic skills and Italian-made technology for the entire agro-food chain and the development of successful fully operational projects

# 4

## Management and maintenance

Agricultural machinery  
Work tools  
Fertilization and pest and disease control strategies



# 3

## Engineering

Support structures  
Protection structures  
Irrigation systems



# 5

## Preservation



# 6

## Sorting







# 1 | Feasibility Study

MARKET ANALYSIS

CHOOSING THE LOCATION AND THE TERRAIN

ANALYSING THE SOIL AND IRRIGATION WATER

Deciding to invest in agriculture and to create an **intensive modern orchard** to **Italian standards** is an extremely worthwhile endeavour. Not only because of the potential profits, but also the key role that the agricultural sector plays in the development and evolution of a country.

Such a project generates both wellbeing and work, but you always need a reliable partner to help you make the right choices and carry out an **in-depth preliminary analysis**.



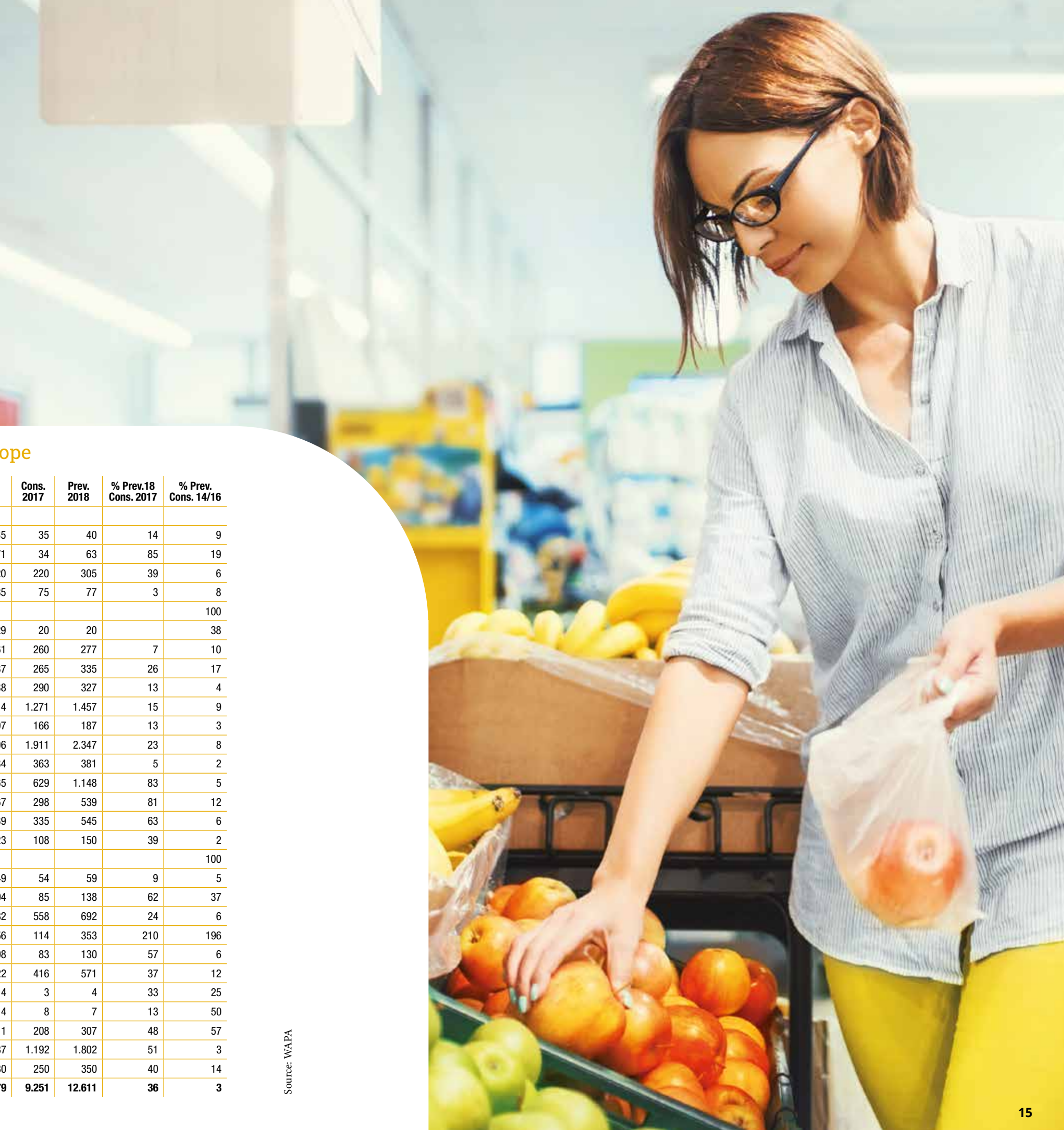
# MARKET ANALYSIS

Why set up an intensive orchard? Developing a new orchard is first and foremost a project aimed at making profits and in order to do so it has to meet the **market demands** for fruit.

*Which types of fruit are the most profitable? What colour apple do consumers want? Do they prefer a polished or matt surface? Does the market demand early or late ripening stone fruits? Do consumers want a sweeter or more sour flavour?*

These are just some of the questions to ask when deciding what **fruit type** and **variety** to plant, which **cultivation method** to use and how to implement the **agronomic management** of the orchard. The answers to these questions and the ensuing choices will determine the success of the project.

The aim is to achieve **maximum production, high quality**, in the **shortest time possible** and to *satisfy the consumer*, following the changes, tastes and trends of each new generation.



## The best-selling apples in Europe

EU - 28 Tons.X 1000	Cons. 2013	Cons. 2014	Cons. 2015	Cons. 2016	Cons. 2017	Prev. 2018	% Prev.18 Cons. 2017	% Prev. Cons. 14/16
Annurca	35	40	35	35	35	40	14	9
Boskoop	58	85	77	71	34	63	85	19
Baeburn	302	322	327	320	220	305	39	6
Bramley	70	83	84	85	75	77	3	8
Cortland	25	25	26					100
Cox Orange	42	33	34	29	20	20		38
Cripps Pink	187	249	244	261	260	277	7	10
Elstar	346	431	399	387	265	335	26	17
Fuji	311	321	338	288	290	327	13	4
Gala	1.204	1.327	1.382	1.314	1.271	1.457	15	9
Gloster	196	201	183	197	166	187	13	3
Golden Delicious	2.535	2.677	2.534	2.406	1.911	2.347	23	8
Granny Smith	361	383	405	384	363	381	5	2
Idared	1.069	1.192	1.129	965	629	1.148	83	5
Jonagold	500	644	633	567	298	539	81	12
Jonagored	341	491	519	539	335	545	63	6
Jonathan	178	193	143	123	108	150	39	2
Lobo	30	30	31					100
Morgenduft	57	74	46	49	54	59	9	5
Pinova	62	79	119	104	85	138	62	37
Red Delicious	597	675	643	632	558	692	24	6
Red Jonaprince	53	98	104	156	114	353	210	196
Renette	121	126	134	108	83	130	57	6
Shampion	457	494	513	522	416	571	37	12
Spartan	6	6	6	4	3	4	33	25
Stayman	18	14	14	14	8	7	13	50
Varietà nuove	152	168	207	211	208	307	48	57
Altre	1.358	1.808	1.713	1.737	1.192	1.802	51	3
Ligol	260	290	303	330	250	350	40	14
TOTALE	10.929	12.510	12.265	11.779	9.251	12.611	36	3

Source: WAPA





## CHOOSING THE LOCATION AND THE TERRAIN

To set up any kind of fruit orchard, you have to think about the terrain it is going to occupy, because it will stay there and need maintaining for the next 20 years or more.

The **location** is fundamental: it should be in a sunny, well-aired position with easy access, especially for transporting the freshly harvested fruit, in order to keep it in the best possible condition even in unfavourable seasons. Water of a sufficient quantity and quality must be available to carry out irrigation during the summer months (fruit is made up of about 90% water).

The terrain is not only the **base for anchoring and supporting** our plants, but also the **source of nutrition** needed, first of all, for the development of the roots and consequently all the parts above ground. For example, the branches that will produce and grow the fruit, which has to go on and meet the demands of an increasingly sophisticated market for foodstuffs in general and fruit produce in particular.



## ANALYSING THE SOIL AND IRRIGATION WATER

After identifying the area where the plants will grow, you have to carry out a full analysis of the soil and irrigation water, to make sure it is compatible with the fruit bearing plants we want to cultivate. The presence or lack of **nutritional elements** is important, but even more important is the **PH** result, the presence of **salts** and **carbonates**, because if these values are high, they limit the growth and development of the plants.

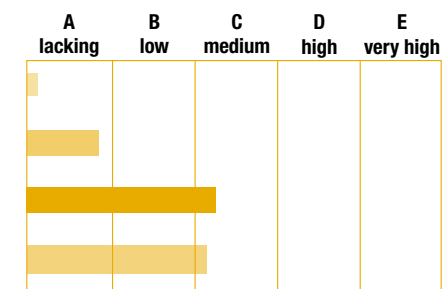
Soil analysis is an indispensable tool for:

- identifying any lack of nutritional elements that could affect yield;
- deciding how to carry out the agricultural processes (preparation, irrigation, choice of variety and rootstocks);
- quantifying the availability of nutritional elements in the soil in order to reduce fertilizing.

Every soil has its own characteristics and is endowed with **mineral elements** and **organic matter**. When planning intensive orchards on dwarfing rootstocks, soil samples for analysis must be taken at a **depth of 30-40 cm**, because that is where the root system carries out the greatest absorption of nutrients (the root system divides into anchoring roots and absorption roots). Each plant has its own nutritional needs according to the stages of its development and the changing climate. A **"rational fertilization"** method allows us to make the best use of production factors, using an optimal dose of fertilizer and avoiding excess, which would lead to a negative impact on the environment as well as economic losses.

### Example of a soil sample report

* Soil type VDLUFA Methodenbuch I D 2. 1:1997	Silty loam
Organic carbon expressed as humus ISO 10694:1995 Fattore conv. 1.72	3.1%
pH (in CaCl <sub>2</sub> ) DIN EN 15933:2012	6.3
*Test for carbonates 5.04MI401 REV. 1 2016	+ low – sufficient carbonates
*Limestone requirement (correction) VDLUFA Methodenbuch I A 5.2.2:2002	21 dt/ha CaO
Phosphorus in CAL solution expressed as P <sub>2</sub> O <sub>5</sub> ONORM L 1087:2012 A.5	< 3 mg/100 g
Potassium in CAL solution expressed as K <sub>2</sub> O ONORM L 1087:2012 A.5	< 3 mg/100 g
*Magnesium (Mg) in CAT solution VDLUFA Methodenbuch I A 6.4.1:2002	17 mg/100 g
*BORON (B) in CAT solution VDLUFA Methodenbuch I A 6.4.1:2002	



Parametro Test Method	Value	Unit of measurement	Average interval from Tab.27 Boden und Pflanzenmemahrung 2004
*Manganese (Mn) in CAT solution VDLUFA Methodenbuch I A 6.4.1:2002	298	mg/kg	30 – 50
*Copper (Cu) in CAT solution VDLUFA Methodenbuch I A 6.4.1:2002	2	mg/kg	2 – 4
*Zinc (Zn) in CAT solution VDLUFA Methodenbuch I A 6.4.1:2002	< 1	mg/kg	2 - 4
*Nitrogen (N) total ONORM L 1095 (Combustione)	0.18	%	
*Ratio C:N For calculation	10		

### Soil classification according to pH values

Classification	pH	characteristics	crop
paracidic	< 5.5	almost sterile	blueberry
acidic	5.5 -6-0	poor	apple, apricot, raspberry, pomegranate
sub-acidic	6.0-6.8	not suitable for some plants	apple, pear, apricot, cherry, raspberry, grape, plum, blackberry, walnut, hazelnut, blackcurrant
neutral	6.8-7.3	best	apple, pear, apricot, cherry, raspberry, plum, blackberry, walnut, blackcurrant
sub-alkaline	7.3-8.0	suitable for most crops	apricot, apple, peach, strawberry, raspberry, cherry, walnut
alkaline	8.0-8.5	not suitable for some plants	olive
paralkaline	>8.5	poor	

### Crop tolerance by saline content

High tolerance from 10000 to 12000 uS/cm	Medium tolerance from 4000 to 10000 uS/cm	Low tolerance from 3000 to 4000 uS/cm
Date palm	pomegranate, olive, grape	pear, apple, plum, apricot, peach, strawberry





## 2 | Cultivars and planting schemes

Globalization and climate are two huge challenges for agricultural producers. Climate change has direct implications on intensive fruit growing and, to avoid suffering its effects, farmers can make specific choices related to irrigation, rootstock, varieties and orchard management.

Consumers are now used to finding their favourite fruit all year round. Thanks to **genetic experimentation**, **varietal innovation** and **preservation technology**, fruit growers can guarantee the supply of fresh fruit all year round.

The key to success is to really get to know what consumers want, in order to decide what, how and where to grow.

CHOOSING THE ROOTSTOCK

CHOOSING THE VARIETY

PLANTING DENSITY



CHOOSING  
THE ROOTSTOCK

To properly design the orchard, there are many factors to consider: the result of the soil and water analyses, the climate, the variety, the rootstock and consequently the planting layout and the training system.

The rootstock has to ensure optimal **adaptation of the variety to the soil** and contribute to the perfect **balance between growth and production** of the plant.

The selection of the most suitable rootstock is made on the basis of a full study of the parameters that emerge, in terms of vigour and tolerance to certain values (PH, permeability and carbonates).



Apple rootstocks

	ORIGIN	VIGOUR	ORCHARD LAYOUT	FIRST CROP	DETAILS	PHYTOPHTHORA	ROOT ASPHYXIA	SUCKERS
M9 PAJAM 1® Lancep*	CEP – CTIFL France	60%	high density	very productive, early, regular	irrigation required	low sensitivity	average sensitivity	low presence
M9 T337	NAKB Netherlands	65%	high density			low sensitivity	average sensitivity	low presence
M9 EMLA	East Malling UK	70%	high density			low sensitivity	low sensitivity	low presence
M9 PAJAM® 2 Cepiland*	CEP – CTIFL France	75%	high density			low sensitivity	sensitivity	presence
M26	East Malling UK	80%	average density	good productivity	better anchorage than M9 types	average sensitivity	high sensitivity	low presence
M106	East Malling UK	85%	average-high density behaves well with ‘Spur’ types	good productivity	high sensitivity to drought	high sensitivity	sensitivity	average presence



Pear rootstocks

	ORIGIN	VIGOUR	ORCHARD LAYOUT	FIRST CROP	ANCHORAGE	ROOT ASPHYXIA
cot./quince EMC	East Malling UK	50%	high density	very early	poor	high sensitivity
cot./quince ADAMS	Select. Quince Angers Belgium	60%	high density	early	poor	high sensitivity
cot./quince EMH* (QR 193-16)	East Malling UK	70%	average-high density	early	average	sensitivity
cot./quince SYDO®	Inra France	75%	average density	average-early	average-good	sensitivity
cot./quince MA	Selez. Cot. East Malling UK	78%	average density	average	good	sensitivity
cot./quince CTS 212	University of Pisa	80%	average density	average	good	sensitivity
cot./quince BA29	Select. Popolaz. Provence	85%	average density	average	good	sensitivity
FRANCO	From seed	100%	low density	late	excellent	very high sensitivity



Cherry rootstocks

	ORIGIN	GRAFTING AFFINITY'	INDUCED VIGOUR	ADAPTABILITY	POSITIVE CHARACTERISTICS	CONTRAINDICATIONS	DENSITY (trees/ha)
Colt®	P. avium* P. pseudocerasus	good	same as rootstock	all soils	can be used in stubble seeding	production start is slow	600/1200
MaxMa® 14	clonal selection of P. mahaleb* P.avium	good	average (-30% of rootstock)	all soils, susceptible to groundwater	high yield, early	poor fruit size on the highest yield varieties	800/1500
CAB6P	clonal selection of P.cerasus	good	average (-20% of rootstock)	fertile soils, including heavy soils	early first crop, good quality fruit	suckers	800/1500
Piku® 1	complex hybrid	good	average (-30% of rootstock)	fresh soils, needs irrigation	early first crop and very good yield	needs more irrigation than average	1200/2500
Gisela® 6	clonal selection of P.cerasus* P. canescens	good	poor-average (-30-40% of rootstock)	fresh and irrigated soils	early first crop, manageable from ground level (low height)	requires dedicated areas, vigorous varieties with average potential yield	1200/2500
Gisela® 5	clonal selection of P.cerasus* P. canescens	good	poor (-50% of rootstock)	fresh and irrigated soils	early first crop, manageable from ground level (low height)	requires dedicated areas, vigorous varieties with average potential yield	1650/6000





Apricot rootstocks

	ORIGIN	INDUCED VIGOUR	ADAPTABILITY	POSITIVE CHARACTERISTICS	CONTRAINDICATIONS
Mirabolano from seed	seedling of P.cerasifera	95 - high	all soils	affinity, vigour, tolerates active limestone and root asphyxia	heterogeneous plants, suckers
Mirabolano 29C	clonal selection of P.cerasifera	95 - elevata	per tutti i terreni	affinity, vigour, tolerates active limestone and root asphyxia	ridotta attività pollonifera
Ishtara® Ferciana*	complex interspecific	95 - high	all soils	early crop, fruit size and colour	fewer suckers
Adesoto® 101 Puebla*	selection of P.insititia	65 - average	replanting	tolerates A. mellea	low vigour in first years
Montclar® Chanturgue*	peach rootstock	90 - high	poor soils	affinity, high, even vigour, tolerates active limestone	only for varieties with poor-average vigour
Intermedio di pesco	grafted	100 - high	replanting, all soils	vigour, yield and quality	physical incompatibility



Plum rootstocks

	ORIGIN	INDUCED VIGOUR	ADAPTABILITY	POSITIVE CHARACTERISTICS	CONTRAINDICATIONS
Mirabolano da seme	seedling of P. cerasifera	high	all soils	affinity, vigour	heterogeneous, suckers
Mirabolano 29C	clonal selection of P. cerasifera	high	all soils and replanting	affinity, low vigour	suckers
Ishtara® Ferciana*	complex interspecific hybrid	low-average	fresh and fertile soils	early crop, fruit size and colour	active limestone
Adesoto® 101 Puebla*	Selection of P. insititia	average	for replanting	tolerates A.mellea	low vigour in the first years
GF677	P. persica*P. amygdalus	high	for replanting, all soils	high vigour and constant yield	
Montclar® Chanturgue*	peach rootstock	high	poor soils	affinity, vigour	only for low-average vigour varieties



Peach rootstocks

	ORIGIN	INDUCED VIGOUR	ADAPTABILITY	POSITIVE CHARACTERISTICS	CONTRAINDICATIONS
GF677	P. persica* P. amygdalus	high	all soils, even dry and with high active limestone content	affinity, vigour, high, constant yield	susceptible to groundwater, sensitive to Armillaria mellea and Agrobacterium tumefaciens
Cadaman® Avimag	P. persica* P. davidian	high	all soils	affinity, vigour, high, constant yield	few suckers, slow vegetative regrowth
Rootpac®-R	P. cerasifera * P. dulcis	high	ideal for replanting and asphyxiated and clay-rich soils	yield, early ripening and fruit size	
Rootpac®-90 Greenpac	(P. persica* P. davidiana)* (P. dulcis* P. persica)	high	all soils	yield, size tolerates chlorosis	susceptible to groundwater
Garnem®	P. amygdalus* P. persica	high	all soils, even replanting	resistant to ferric chlorosis and root knot nematodes	only for low-average vigour varieties; more resistant to groundwater than GF677
Montclar® Chanturgue*	peach rootstock	high	poor soils	affinity, vigour	only for low-average vigour varieties
Adesoto® 101 Puebla*	Selection of P. insititia	average (-20% GF677)	for replanting	tolerates A. mellea	low vigour in the first years
Rootpac®-70 Redpac	(P. persica* P. davidiana)* (P. dulcis* P. persica)	average (-20% GF677)	all soils	yield, size and early ripening (3-5 days before GF677); tolerant of nematodes	sensitivity to Agrobacterium tumefaciens
Rootpac®-40 Nanopac	(P. dulcis* P. persica)* (P. dulcis* P. persica)	low-average (-25-30% GF677)	all soils	yield, size and early ripening (3-7 days before GF677)	sensitivity to Agrobacterium tumefaciens
Ishtara® Ferciana*	(P. cerasifera* P. salicina)* (P. cerasifera* P. persica)	low-average (-25-30% GF677)	fresh and fertile soils	early crop, fruit colour and size	sensitivity to high active limestone content; susceptible to intense winter cold

LEGENDA/KEY TO SYMBOLS  
\*varietà brevettata, moltiplicazione vietata/Patent variety, propagation prohibited  
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## CHOOSING THE VARIETY

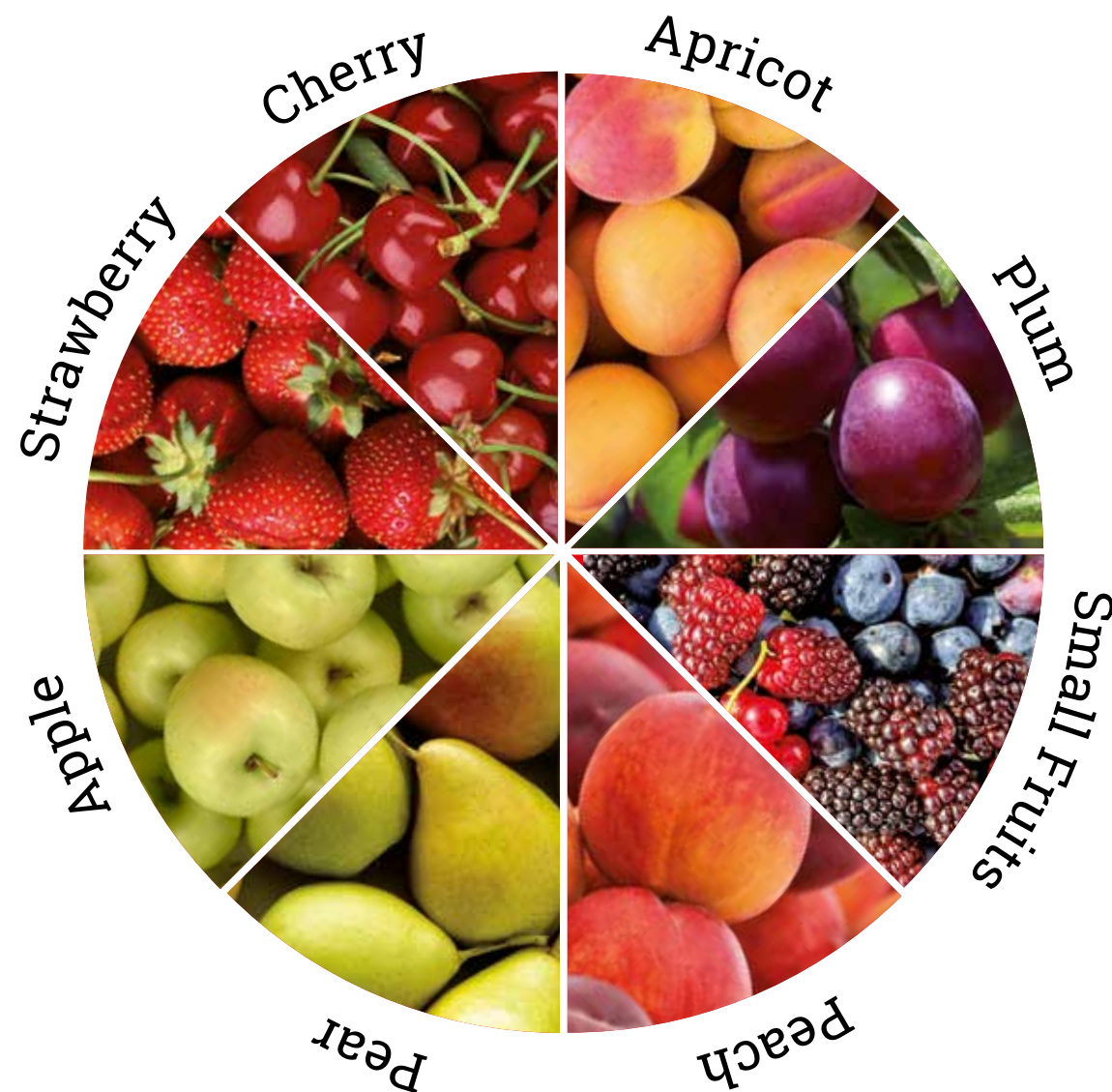
The key point for a farm is being able to choose **innovative varieties** and **diversify them strategically** in order to offer new discoveries while following demand and market trends. Advice&Consulting recommends **certified quality, virus-free plants**, cultivated in protected environments, where all the necessary controls are carried out, and with uniform pomological features for each variety and clone.

We can guarantee high quality plants in terms of rootstock diameter, height, a good root system, well developed, even branches and the presence of flower buds, which enable production to begin from the first year of the orchard's life.

There are various criteria to consider when choosing the right variety for a new orchard:

- **commercial demands:** varieties that will widen the range on offer in order to make it more diversified and suited to the needs of the market;
- **profitability of the variety** (€/kg and kg/ha);
- **suitability of the variety**, understood as how it is suited adapts to the pedoclimatic environment in which they are grown (for example some cultivars are not subject to damage from cold or rusting in colder areas);
- **the presence of sensitive areas** adjoining the orchard. In this case, "rustic" and/or resistant varieties which require fewer phytosanitary operations are preferred;
- **cultivation, constant productivity** with large, high quality yields;
- **farm requirements:** the choice of a variety which allows the farm to extend its harvesting window;
- **pollination:** the inclusion of cultivars capable of ensuring good cross-pollination.

Changing market needs and the introduction of interesting new varieties have contributed to the considerable diversification of fruit growing at an international level.





PLANTING DENSITY

The concept of a **modern intensive orchard** is based on a **higher number of plants per hectare** compared to a traditional orchard. Each row has to constitute a long **productive wall** without any empty spaces between the plants, while the distance between the rows must allow the safe passage of machinery. Equipment must be able pass without damaging the fruit, yet there should be no more than a 30 cm gap either side of the machine.

A production wall guarantees:

- the **mechanization** of certain agronomic practices such as thinning and pruning;
- **uniform exposure** to light across the entire crop, increasing the amount of fruit with optimal colour;
- **faster manual thinning and harvesting**;
- increased **effectiveness of phytosanitary treatments**.

To create the production wall, particular attention is required in the planting of the trees, which must be spaced precisely.



• For apple orchards

**Rootstock:** M9 T337

**Planting scheme:** 3.5 x 0.8 metres (distances can be reduced for some varieties)

**Planting density:** 3571 plants per hectare

**Pollinators:** about 300 planted outside the scheme, using a second, compatible productive variety or just a flowering apple tree.

**Tree training system:** spindle.

**Tree height:** no more than 2.7 metres.

**Yield:** from the 5th year, yield can reach 50-70 tonnes of fruit per hectare, depending on the variety chosen.

Pollinators

Cultivar	Fruit cv	Flower cv
Gala	Granny Smith	Evereste
	Golden Delicious	
Red Delicious	Golden Delicious	Evereste
Golden Delicious	Red Delicious	Evereste
Fuji	Granny Smith	Evereste
	Gala	
Restistenti alla ticchiolatura	Restistenti alla ticchiolatura	Evereste

Expected apple yield in tonnes per hectare

Rootstock	1st year	2nd year	3rd year	4th year	5th year	6th year	7th year
M 9	0	15	25	40	50-70	50-70	50-70
M 106	0	5	10	15	25	40	40

• For pear orchards

**Rootstock:** chosen according to the active carbonates found in the soil analysis.

**Planting scheme:** 3.5 x 0.8 metres

**Planting density:** 3571 plants per hectare

**Pollinators:** about 300 pollinators planted outside the scheme, for some varieties, using a another, compatible productive variety.

**Tree training system:** spindle, so that all parts are exposed to the sun.

**Tree height:** no more than 2.7 metres.

**Yield:** from the 5th year, yield can reach 30-50 tonnes of fruit per hectare.

Pear pollinators

Variety	Pollinators
Carmen	William
William (autofertile)	
Abate Fétel	William
Decana del Comizio	William

Expected pear yield in tonnes per hectare (with average vigour rootstocks and branched plants)

Rootstock	1st year	2°nd year	3rd year	4th year	5th year
ADAMS, MH, SYDO, BA 29	0	10	20	30	40-50

• For cherry orchards

**Rootstock:** Gisela 5 (low vigour) or Gisela 6 (average vigour) according to the active carbonates found in the soil analysis.

**Planting scheme:** from 3 x 0.5 metres to 3.5 x 1 metres.

**Planting density:** from 3000 to 6000 plants per hectare, depending on the rootstock.

**Pollinators:** in order to determine a productive variety which also functions as a pollinator, we can set up orchards by planting a replica of at least 2 varieties with a maximum of 4 rows for the self-fertile varieties and 2 rows for the sterile varieties. It is important to plant 2 varieties with the same flowering period as the chosen pollinating variety.

**Yield:** from 15-18 tonnes per hectare with fruit size of around 30 mm, with the use of the Gisela 5 rootstock from the fourth year and Gisela 6 from the sixth year.

Expected cherry yield in kg per plant

Rootstock	1th	2nd	3rd	4th	5th		
Gisela 5	year 0	year 0,5	year 1,5	year 2,5	year 3,5		
Rootstock	1th	2nd	3rd	4th	5th	6th	7th
Gisela 6	year 0	year 0,5	year 1,5	year 2,5	year 3,5	year 4,5	year 6,5

• For apricot, peach and plum orchards

These three different species can be grouped together in one productive system.

**Peach rootstock:** GF 677

**Apricot and plum rootstock:** Mirabolano 29 C

**Planting scheme:** 4 x 2 metres

**Planting density:** 1250 plants per hectare

**Tree training system:** three-way candelabra to allow the passage of machinery used for pruning and thinning the trees, operations which are fundamental for these species, which cannot be thinned chemically.

Thanks to this type of training and the increased use of machines, annual management costs can be reduced significantly. This facilitates, simplifies and speeds up the work processes, where unskilled labour is often employed.

**Yield:** from 30 – 60 tonnes per hectare, depending on species and variety.

Pollinators for apricot trees

To guarantee the pollination of apricots it is necessary to plant at least 2 varieties in replicas of 4 rows in the orchard, choosing varieties with the same flowering period.

For some varieties of apricot, it is essential to evaluate the need for a certain number of hours of cold, in order to ensure that the flower bud matures and the flowering is not at risk of failing. Because there is such a wide range of varieties, it is advisable to assess the specific characteristics and requirements of each variety in order to achieve a good yield.







#### Pollinators for plum trees

All Sino-Japanese cultivars are sterile and therefore require cross-pollination for a satisfactory commercial yield. A pollinating plant must be added every 10 metres (the Mirabolona fir is recommended). The European cultivars are self-fertile, with the sole exception of the President variety. The orchard has to be organised with at least 2 varieties in 4-row replicas (choosing varieties with the same flowering period).

Expected plum and apricot yield in tonnes per hectare

Rootstock	1th year	2nd year	3rd year	4th year	5th year
Mirabolano from seed 29C	0	5	15	35	40-50

#### Pollinators for peach trees

The peach tree is a self-fertile species, which therefore does not require pollinators. Large orchards of a single variety can also be created.

Expected peach yield in tonnes per hectare

Rootstock	1th year	2nd year	3rd year	4th year
GF 677	0	10	20	30



#### • For strawberry plantations

Strawberries are usually grown in the open field, using the **mulching** technique, in order to avoid contact of the fruit with the ground and make the crop more productive. Alternatively, they are grown in greenhouses.

The choice of the **planting scheme** is linked to several factors: fertility, the type of machinery available (e.g. transplanters), variety characteristics, the type of plant used (refrigerated-stored plants usually have greater vigour and therefore require wider planting layouts), the need for phytosanitary control (the greater the ventilation, the lower the development of various pathogens, especially those of fungal origin), production choices (plants aimed at an autumn and / or early spring harvest, on average require a greater planting density in order to balance lower productivity among the individual plants).

The **standard distances** (for banked cultivation or cultivation without the use of mulch) are about 35 cm between the rows of rows and 30-35 cm along the row, while the distance between the central axes of the rows is 115-125 cm. With simple rows, the distance along the row is reduced to 20-25 cm. The planting period is related to the variety choice, altitude, cultivation area, the type of seedlings used and production choices. The plantation is set up with less productive varieties and then continues with those that typically give a higher yield. Delaying the planting leads to less flower induction, greater vigour and larger fruit size; other things being equal, the smaller the number of individual strawberries, the bigger they are in size. Furthermore, with some varieties, late planting favours earlier ripening.

With regard to **altitude**, it must be taken into account that there is an approximately three-day delay in the development of the crop for every 100 metres above sea level.

The strawberry plant is particularly **sensitive to irrigation** for three reasons: it has poor tolerance of groundwater, high sensitivity to salinity and any water stress slows down the development cycle. The water requirements of a strawberry plantation must therefore always be kept under close control. As for **ripening**, we recommend picking strawberries when they are only 70% red on the surface of the fruit. Only if they are to be sold to nearby markets and soon after picking, can they be harvested when the surface is completely red.

#### • For blackberry plantations

The varieties of blackberry on the market are **uniform** and produce fruit on the previous year's branch. Cultivation involves **planting** in spring, when the danger of frosts has passed; when the branches have grown to a sufficient length, they should be tied to supports and left to grow (not cut even if they are very long). In winter they lose their leaves and in spring the plants must be pruned to a height of 170 cm, leaving 4-5 long branches and cutting the lateral ones to about 10-12 cm.

For warm or temperate areas, we recommend the **Lochness** cultivar, a variety that produces several medium diameter shoots. Flowering and fruit production is mid-season (harvest in early July). The berries are slightly elongated and dry. Its sweet flavour has made it today's most common variety all over Europe. The abundant yield reaches around 7 kg per plant. It is not suitable for climates with severe winters because of frost damage, which causes the shoots to dry out.

For areas with cold winters we recommend the **Chester** cultivar, a very vigorous variety with a good yield. The shoots are large and vigorous while the berries are medium in size, round and less sweet but lend themselves to long fresh conservation. Flowering is late, making it ideal for colder climates. Production is also late (from the end of August until the frosts) and yield can reach 6-7 kg per plant. The rows should be protected with **nylon sheets** to avoid the berries rotting and, bearing in mind the late harvest period, to protect them from rain or persistent dews.

The planting layout requires a **minimum distance between the rows** of 250 cm and between one plant and another of 100 cm.

#### • For blueberry plantations

Blueberries are a **multi-year crop** with plantations lasting a standard of twenty years, over which there is no significant drop in productivity. The fruiting blueberry is a perennial shrub, which grows upwards, reaching 2-3 meters in height. It has shallow roots and is very sensitive to drought, requiring particular care when it comes to irrigation. It does not tolerate soils with active limestone and high pH, yet it has a requirement for a certain amount of cold weather, which varies from cultivar to cultivar.

The blueberry does not need a deep soil, but it must be **rich in organic matter**. The species requires that the soil has an acid reaction since they are acidophilic plants, with an optimal soil pH between 4 and 4.5. With values above 5.56, growth and production are reduced and there may be deficiency problems (iron chlorosis). High levels of organic matter act as a buffer to changes in soil pH, humidity and temperature. With a regular autumn lignification process, the blueberry shows high resistance to cold (even up to -30 ° C). During ripening, on the other hand, high temperatures are required for good quality fruit and the right sugar content.

**Optimal exposure** is important because it favours flower induction and an increase in production. The typical **planting scheme** is 2.0-3.0 m between

the rows, by 1.5-2.0 m along the row, depending on the vigour of the variety and the fertility of the soil. Investments are therefore from 3,000 to 1,700 plants per hectare. The berries are produced from the flower buds formed the previous year. The blueberry bush has fibrous roots, devoid of capillary roots and with reduced capacity to absorb nutrients.

**Potential yield:** from 2-3 kg / plant from the third year, up to 5-6 kg / plant on mature plants. In optimal soil and climate conditions they can reach peaks of 10 kg per plant.



#### • For raspberry plantations

Raspberry bushes are divided into two groups: the **summer-bearing** raspberry and the **re-flowering** or ever-bearing raspberry.

Raspberries prefer **fresh, permeable soils** rich in organic matter, with a subacid pH (pH 6.5). They do not tolerate soils that are too clayey, compact or too humid, while soils rich in limestone should be avoided. They suffer in high temperatures and intense, prolonged cold, especially if accompanied by wind. The **preparation of the cultivation** soil is fundamental to ensure the success of the crop.


In identifying the plot it is important to choose land that has not previously hosted crops such as raspberries, blackberries, strawberries or Solanaceae plants to avoid the development of diseases. Pre-planting operations should be carried out in autumn. **Soil and water analyses** are essential, even for choosing the planting schemes to be adopted. The most common training system for raspberry bushes is **espalier**.

The **ripening** of the fruits is gradual and lasts for over 30 days for the summer-bearing varieties and 60 days for the ever-bearing varieties. Harvesting is done by hand and begins towards the end of June for the former type, and continues until the first autumn frosts for the latter.

The **quantity produced** depends on the type of variety. There is no production for summer-bearing varieties in the first year, about 7-10 tons per hectare for the second year, about 10-15 tons for the third and following years, in good soil conditions and with the right cultivation technique.

For ever-bearing varieties, **production** is about 5-7 tons in the first year, about 7-12 tons in the second year, and continues similarly for the third and following years.





# 3 | Engineering an intensive orchard

- SUPPORT STRUCTURES
- PROTECTION STRUCTURES
- IRRIGATION SYSTEMS

The planning process starts with an analysis of the farm location, the water supply for irrigation and the north-south position to line up the rows of the orchard. To create modern intensive systems, you need not only quality plants but also a **solid support structure**, a **cover to protect** against weather conditions, and last but not least, an **adequate irrigation and fertigation system**, which meets the nutritional needs of the various phases in the plants' life cycle.

In collaboration with the best companies on the Italian market, Advice&Consulting offers the **most efficient, long-lasting solutions** for the development of intensive orchard structures. These structures are designed to last longer than the normal lifespan of an orchard.

All the products which make up the system are **100% made in Italy**, with top **quality** materials and are guaranteed by the manufacturer to withstand the weight of the plants and adverse weather conditions.

Our irrigation systems are also fundamental for plant growth and are custom-designed to distribute the water and root fertilizers **automatically**, homogeneously over the entire surface and **without waste**.





## SUPPORT STRUCTURES

Choosing the right materials and correct installation of the support structures is key to ensuring the stability of the new orchard.

As far as posts are concerned, the most common material in use at the moment is **pre-compressed concrete**. This is a winning choice because concrete posts are long-lasting, have higher mechanical resistance and are relatively cheap, especially if used for multiple production cycles.

There are various types of support structure, each of which has its own accessories (clamps, clips, hooks, wires, cables and so on) and can be custom built according to the plant being cultivated.

The support system is therefore a **tensile structure** made up of concrete posts, connected to one another with steel wires and cables, held taut by special anchors fixed into the ground.

The type of anchoring is carefully chosen depending on the type of terrain and can be either:

- **anchoring with a concrete base** measuring at least 40 cm in diameter (suitable for all types of terrain);
- **anchoring with simplified or screw access** (only for compact, stone free terrains and necessary where all the perimeter posts are to be anchored, in order to reduce laying times).



## PROTECTION STRUCTURES

Protecting orchards from weather conditions or insects is essential if you do not want to risk the crop being compromised irreversibly and therefore wasting all your investment and work.

The only way to reduce this risk to a minimum is to **protect your plants** with effective cover systems, all of which are **multifunctional** and can safeguard against sun, rain, hail, wind and insects.

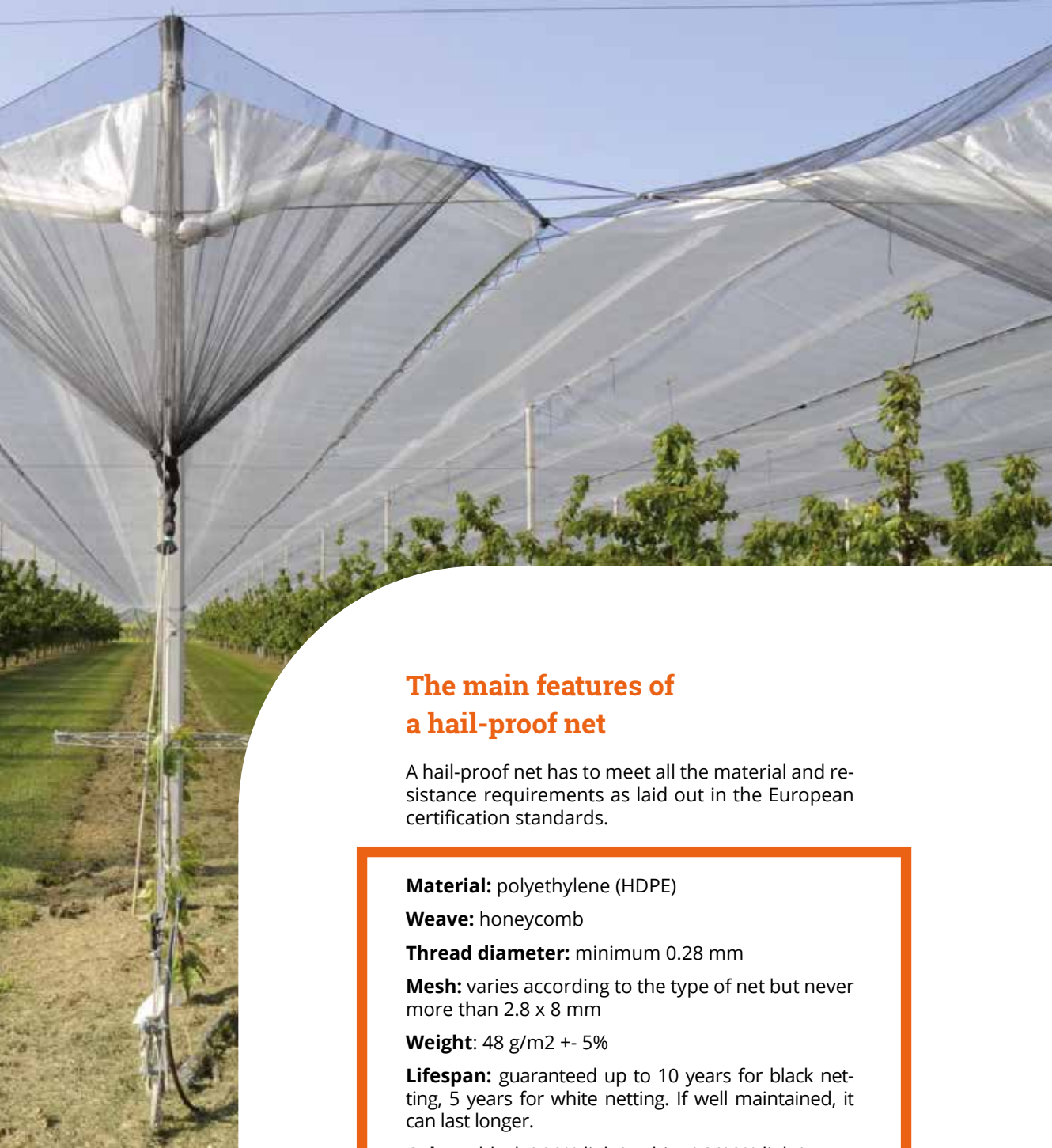
Apart from the functional characteristics that all the nets share, each type also has its own special feature that makes it particularly suitable for a specific type of protection.

Our protection structures can be divided as follows:

- **hail-proof**
- **rain-proof**
- **sun-proof**
- **insect-proof**







### The main features of a hail-proof net

A hail-proof net has to meet all the material and resistance requirements as laid out in the European certification standards.

**Material:** polyethylene (HDPE)

**Weave:** honeycomb

**Thread diameter:** minimum 0.28 mm

**Mesh:** varies according to the type of net but never more than 2.8 x 8 mm

**Weight:** 48 g/m<sup>2</sup> +/- 5%

**Lifespan:** guaranteed up to 10 years for black netting, 5 years for white netting. If well maintained, it can last longer.

**Colour:** black (-20% light), white (-8/10% light), grey (-12% light)

The **honeycomb weave ensures** better resistance and excellent value for money. When it comes to other types of weave, such as knotted or printed, the former are too expensive while the latter are not flexible or resistant enough.

All our cover fabrics are made with high quality materials including **polymer, master** and other additives that are among the best on the market.



### IRRIGATION SYSTEMS

Advice&Consulting recommends high tech irrigation systems, with **an auto-compensating drip or sprinkler system**. They are made to measure, **according to the requirements of the plants and the amount of water** that is available for use on site.

The irrigation systems include pumping stations, filters and fertigation. They are fitted with a control station and, where there is internet coverage, remote control too. They guarantee ideal irrigation, perfectly suited to the needs of the orchard, with the purpose of improving efficiency and making maximum water savings.

**Drip irrigation** brings notable **agronomic advantages**:

- it has the highest level of efficiency, at over 90%
- it can easily be made into an automatic, programmable system so it can work 24 hours at a time, allowing either shorter shifts or almost continuous irrigation.
- the humidity of the soil can be maintained at the perfect level for the plants
- it allows for fertigation operations

Both installation and servicing are carried out by experienced technicians who also provide after-sales assistance.







# 4 | Management and maintenance of the orchard

- AGRICULTURAL MACHINERY
- WORK TOOLS
- STRATEGIES FOR DISEASE PREVENTION AND FERTILIZATION

Orchard management is a very important activity which requires agronomic and organizational skills. The **technical choices** and **work strategies** adopted must lead to optimal harvests in terms of quality and quantity.

It is therefore essential to choose **efficient agricultural machinery**, which optimizes the use of manpower, offers an advantage in the timing of the phenological phases of the plants and helps to make the most of pesticides and fertilizers.

Advice&Consulting always **selects the best machinery available on the market** and the technical tools necessary for the care of the orchard, at every single stage, from the planting of the trees to the harvest of the fruit. It also supports farms in their choice of the most suitable and effective strategy **against fungi and parasites**, and the **fertilization** of the orchard.





## AGRICULTURAL MACHINERY

Advice&Consulting recommends certified machinery for orchard management. Everything is produced in Italy, from the manufacture of components to their assembly. We select the best machines on the market, in terms of **performance, solidity, stability** and **safety**:

- with the best product distribution for plant treatments
- with low noise pollution
- with low power consumption
- with reduced fuel consumption
- with reduced emissions

We provide efficient after-sales assistance and supply spare parts for every piece of machinery.

**Tractors for primary and secondary** procedures such as anti-parasite treatments, mowing, wood chopping, harvesting, spreading granular fertilizer, weed control and towing of fruit harvesting trailers.

**Fork lifts** for loading/unloading produce, with crate clamps.

**Hydraulic harvesting lifts/platforms** for setting up and fitting support and protection accessories, thinning and pruning (for up to 4/6 people).

**Sprayers** for optimal distribution of leaf treatments, con steering rudder, electric controls and patented **tank**.



**Mowers** with automated arm extension.

**Sprayer booms for weeding** between the rows, with electro-hydraulic movement and anti-drift bells fixed on the front of the tractor.

**Fertilizer spreaders** for localised distribution on orchard rows between 2 to 5 metres, can also be used in open fields.

**Wood chopper** for pruning with hydraulic movement, adjustable rear offloading, reinforced rotor, can cut up to 8 cm in diameter.

**Rakes** for moving pruned branches from beneath the plants for chopping, front loading with single or double brush.

**Harvesting trolleys** for speeding up the harvest and reducing bruises to a minimum.

**Hydraulic rear mounted elevators** for moving crates of crops from the platforms, with electric controlled crate clamps.

**Pruning compressors** (can be attached to the tractor) + pneumatic shears for pruning from the fourth year onwards.

**Vertical rotary tillers** for filling holes, with a toothed rear roller.

**Transplanters** for digging and filling the furrow when planting.

**Washers** (hot water) for washing the machinery and bins before harvesting the fruit.







## WORK TOOLS

Advice&Consulting also provides support to its clients through the supply of high quality Italian technical tools required at the various stages of orchard management.

### Tying back the plants

**Agricultural binding twine:** used for tying the plants to the wires of the orchard support structure. Made of PVC, it stretches to allow the plants to grow and is weather and frost resistant. Knots last at least 5-6 years. Advice&Consulting recommends a diameter of 5 mm.

**Cutting ring for binding twine:** used to speed up cutting of the binding twine, made of aluminium and available in various sizes (20, 22, 24 mm in diameter).



### Pruning

**Lightweight ergonomic shears:** practical and easy to use, these shears weigh only 170 g and are ideal for pruning younger plants, for cuts of up to 22 mm. The ergonomic handle and the curved blade mean that the user's wrist is kept in a natural position and is subject to less pressure while pruning. The blade is made of hot-forged steel and is fully interchangeable and adjustable.

**Professional branch cutters, Tucano model:** these are recommended for effortless cutting of branches measuring between 22 and 50 mm and pruning fast growing orchards, especially stone fruit trees. The aluminium handles are pressure-resistant. The blade and tie-rod are made of steel, with a high percentage of carbon, hot-forged and surface-treated with a life-time guarantee against breakage. It is fully interchangeable and adjustable.

**Professional folding saw:** practical, easy to use and safe, this is recommended for cuts over 50 mm. The teeth have a long-lasting, three-level sharpening on a blade made of carbon steel that has been treated to reduce friction. The ergonomic handle snaps closed and every part is fully interchangeable.

**Knife for incisions:** for making incisions in the trunk of the plant (recommended for cherry trees) in order to aid the growth of new branches.

### Harvesting

**Ring gauge:** for measuring the size of fruit over 30 mm, with 13 rings. Made of aluminium, it is lightweight and pocket-sized.

**Brix refractometer:** for measuring the sugar concentration of the fruit in order to determine the potential alcohol content of the must, from 0 to 18% on the Brix scale. Thermo-compensated (automatic temperature compensation), made of alloy, with crystal prisms and lenses.

**Penetrometer:** for measuring the hardness of the fruit, in order to decide when to harvest and to control the ripening process (softening of the fruit pulp) in cold storage. Index reading in kg/cm<sup>2</sup>. Comes with the following stainless-steel accessories: rods, splash guard and peeler.

**Rain gauge:** plastic tool for measuring rainfall, with a fixed support, 80 mm in diameter and 200 mm in height. This can be used to decide how to manage irrigation after rain and is essential in anti-parasitic treatments for disease prevention.

**PH meter + digital conductometer:** for liquids and soil, a pocket-sized tool for measuring the PH and salt levels in water, to prepare fertilizers and anti-parasite treatments. Measures on a scale of 0-14 p, with precision to  $\pm 0.2$  PH, resolution 0.1, automatic temperature compensation, manual calibration to one point.







## Reference parameters for harvesting

Reaching a high level of quality and long-lasting fruit preservation is dependent on harvesting the fruit at the right moment.

### APPLE

VARIETY	BRIX	FIRMNESS* (kg/cm <sup>2</sup> )	STARCH (1-10)	TOTAL ACIDITY (meq. NaOH)
Golden D.	+ 12	6.5 – 7.0	6-7	5.5 – 7.5
Red Delicious	+ 10	7.0 - 7.5	4 - 6 **	4 – 5.7
Gala	+ 12	7.0 - 7.5	5.5 - 6.0	4.5 - 6.5
Fuji	+ 13	7.5 - 8.5	7.5-8.5	5.2 - 6.4

\* Values given by 11 mm rod; \*\* Conservation in A. T.

### APPLE STARCH DEGRADATION TEST

TYPE	CULTIVAR
Circular C	Gala Group, Red Delicious Group
Radial R	Golden Delicious Group
Intermediate	Fuji Group



\*Eseguito con soluzione Iodio - Ioduro di potassio

### PEAR

VARIETY	BRIX	FIRMNESS* (kg/cm <sup>2</sup> )
Abate Fétel	13,5	6.0
Decana C.	12,5	4,5 - 4,8
William's	12,0	6,5

\* Values given by 8 mm rod

### PEACH

The only harvest index to consider is the firmness of the pulp. For markets where medium-long term storage is required, it ranges from five to six kg for peaches and nectarines.

### PLUM

Approximate values, for certain areas of Italy.

VARIETY	BRIX	FIRMNESS* (kg/cm <sup>2</sup> )
Angeleno	12 -13	4 -4.5

\* Values given by 8 mm rod

## STRATEGIES FOR DISEASE PREVENTION AND FERTILIZATION

Fruit farming is facing new challenges due to climate change and the need to reduce the environmental impact of production, caused by the use of pharmaceuticals for agriculture. The only way to move forward is to place your trust in **innovation**, planning field operations in an increasingly precise way, thanks to the support of **expert agronomy consultants**.

Advice&Consulting recommends an **effective line of defence**, selecting the best products on the market and ensuring the **natural balance** is maintained.

We base our prevention strategy on in-depth knowledge of the biology of diseases, whether caused by **fungi** or **insects**, while safeguarding the useful insects that help agriculture and getting the most out of every single chemical product.







## Criteria for mineral fertilizing

(N - P - K)

Advice&Consulting recommends fertilizing crops on the **principle of replacement**, in other words introducing a quantity of mineral fertilizers equal to that taken away by production, bearing in mind that the leaves and wood leftover from pruning should be broken up and left in the field.

This principle can be adopted for all cultivars, right from the first year of planting, considering that the young plant increases in weight and productive volume 15 to 20 times in the first three to four years, to reach the maximum volume of production from the fourth year onwards.

## Improvement of the organic substance content

During the first two years, we recommend the use of **humic acids**, which can be distributed via drip irrigation. After that, it is sufficient to cut and mulch the grass between the rows and leave it in situ.

## Micro-elements

Advice&Consulting recommends the use of **B-boron**, **Zn-zinc** and **Mn-manganese** for on-leaf treatments, and Fe-iron in fertigation.

## Chemical fertilization of the soil: criteria and quantity

Always bearing in mind the concept of fertilization based on the principle of replace, the amount of fertilizer should be **proportionate** to the elements taken away by production, after the return of the fallen leaves and broken up pruned cuttings to the ground.

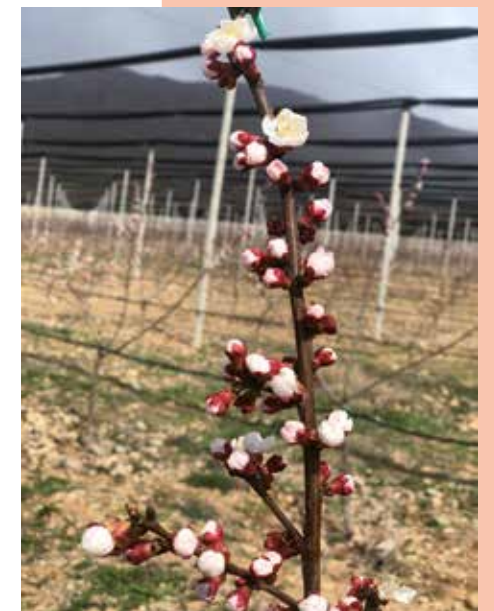
## Chemical fertilization via fertigation with drip irrigation

Fertigation makes it possible to take full advantage of the drip irrigation system. If we consider the soil as a simple support for the plants' roots, it is necessary to provide the nutritional requirements via the irrigation system using **soluble fertilizers**.

Fertigation is therefore preferable to granular soil-based fertilizing because it uses about **25-30% less fertilizer**.

Advice&Consulting recommends fertigation because:

- it is more efficient since the **roots better absorb the nutrients** from the water solution circulating in the soil;
- it is possible **to administer the fertilizer in smaller doses** throughout the season, according to the needs of the plants;
- the risk of fertiliser being washed away by **rainfall is diminished**;
- soluble crystal fertilizers permit a **higher fertilizing nutrient content** compared to liquid fertilizers, whose relatively high water-content (around 60-70%) increases transport costs unnecessarily.







# 5 | Preservation

As a result of the latest preservation technology, it is possible to maintain **the organoleptic qualities** of the fruit intact, **without the addition of chemical products**, thus ensuring that the produce is completely **healthy** and **safe** to eat.

Advice&Consulting, in partnership with leading Italian companies, designs and develops ready to use refrigerated storage spaces featuring **thermal insulation, complete system requirements** and **controlled atmosphere** technology featuring **ULO, DCA**, etc.

Great care is taken over the 100% Italian components and the quality of the materials used. We use thicker than normal insulating panels that offer **better low temperature** control and **energy saving**.





## SAFE PRESERVATION OF ORGANOLEPTIC QUALITIES

The highly sophisticated refrigerated units use the **controlled atmosphere method**, as well as nitrogen generators, specifically for rapid attainment of the initial oxygen stress value, which is then followed by the ULO phase.

The concentration of carbon dioxide in the cell must be carefully controlled with specific tests on the produce.

The values installed for the carbon dioxide absorbers are adjusted according to the variety being kept in storage.

As a result of this technology the **shelf-life** can be extended up to:

- 12 months for apples
- 9 months for pears
- 3 months for peaches
- 3 months for cherries

The freshness of the produce is maintained for the whole preservation period, ensuring the desired **characteristics of appearance, firmness and flavour**.

The unit can be managed using automatic programming, both for the fridge and controlled atmosphere. This allows the **parameters to be controlled remotely**, even from a smartphone or tablet, and the preservation details can be memorized to create a data bank.

We offer staff **training** on the use of the units as well as free remote **technical assistance**, which allows us to check on any malfunctions and adjust the preservation parameters.



## FRUIT PRESERVATION FIGURES

	TEMP.	STORAGE TIME	R.H.	C.A. O <sub>2</sub>	C.A. CO <sub>2</sub>
APRICOTS	0/5°C		90/95 %	2/3 %	2/3 %
BLUEBERRIES (5)	2/5°C			1/2 %	0/5 %
AMERICAN BLUEBERRIES (5)	0-5°C			5/10 %	15/20 %
WILD BLUEBERRIES (5)	0-5°C			5/10%	15/20 %
CHESTNUTS (7)	0°C			3 %	10 %
CHERRIES (SWEET) (5)	-1/0°C		95-97° C	3/10 %	10/15 %
STRAWBERRIES (5)	15/0°C			5/10 %	15/20 %
FIGS (5)	0/5°C		60-70 %	2/5 %	15/20 %
GRAPES (5)	0/5°C	3-4-months		sulphuration	
KIWI FRUIT (5)	0/5°C		95-97 %	1/2 %	3/5 %
NECTARINES (5)			90-95 %	1/2 %	3/5 %
OLIVES (5)	7 °C			2/3 %	0/1 %
PEACHES (5)	-0,5/0 °C		90-95%	1/2 %	3/5 %
PERSIMMONS (6)	1-2°C (ripe)	2-3 months	90-95 %	2/3 %	5/8 % (non astring.)
PLUMS (5)	-0,5/0°C		90-95 %	1/2 %	0/5 %
Var. Stanley	0°C		90-95 %	1,5-2 %	8-10 %
Var. President	0°C		90-95 %	1,5-2 %	15-18 %
Var. Angeleno	0°C		90-95 %	1,5-2 %	2-2,5 %
POMEGRAMATES (8)	5°C	5-6 weeks	90/95 %	2 % (avoid scald)	
RASPBERRIES (5)	0-5°C			5/10 %	15/20 %
NON ITALIAN VARIETY STRAWBERRIES (1)	0°C	5-6 days	90-95 %	24-48 h with 20-30 % CO <sub>2</sub>	
FUJI APPLES (5)	+0°C	7-8 months	95 %	1.5-2.0 %	0.5-0.8 %
GALA APPLES (4)	0°C	5 months	90 -95%	1-2 %	1/2 %
GOLDEN (2)	1/2° C	7-8 months	87-92 %	2/3 %	2 %
DELICIOUS APPLES A B C	1/2° C	7-8 months		1 %	2 %
	3° C	5-6 months		8/10 %	3 %
	0/0,5 °C	8-9-months		1 %	1 %
	0/1 °C	7-8 months		2/3 %	2 %
RED DELICIOUS APPLES (2)	0/0,5°C	7-8 months	87-92 %	2/3 %	3 %
	0/1 °C	8-9 months		1 %	1 %
ABATE FETEL PEARS (5)	0°C	4-5 months		3/4 %	4/5 %
ABATE FETEL PEARS (2)	-1/0°C	4-5 months	90-95 %	2 %	0,8 %
DECANA DEL COMIZIO PEARS (2)	-1/0°C	5-6 months	90-95 %		0,8 %
DECANA DEL COMIZIO PEARS (2)(5)	-1/0°C	5-6 months	90-95 %	2/3 %	5 %
KAISER PEARS (2)	-1/0°C	6-7 months	90-95 %	1,2-1,5 %	0,8 %
KAISER PEARS (2)(5)	-1/0°C	6-7 months	90-95 %	2-3 %	4 %
WILLIAM PEARS (2)	-1/0	4-5 months	90-95 %	2-3 %	4-5 %

(1) "La frigoconservazione dei prodotti ortofrutticoli" - Fausto Gorini - 1979  
(2) Tables from CRIOF Bologna - 1992  
(3) "La salvaguardia della qualità degli ortaggi dopo la raccolta" - Fausto Gorini - 1991  
(4) "Conservazione controllata di frutta ed ortaggi" - Gorini, Heccher Zerbini, Testoni - 1988  
(5) "International controlled atmosphere research conference" vol. 2 - Other commodities and storage recommendations - June 14-16, 1989 Washington, USA  
(6) Article by Gorini - Text taken from "Agricoltura Ricerca", no. 95 - Ismea, Roma  
(7) Article in Frutticoltura May '91 "Parametri tecnici per la conservazione degli ortofrutticoli", Visai.  
(8) "Aspetti della conservazione e utilizzazione dei frutti esotici" - Gorini Annali IVTPA 1987 vol. XVIII





## 6 | Sorting

Advice&Consulting, in collaboration with leading companies in the sector, offers cutting edge technology for the **processing, calibration** and **quality selection** followed by the packing of every kind of fruit.

The aim of the calibration line is to increase **market competitiveness**, reduce labour costs and improve the processing quality. These results are guaranteed by the quality of the lines we design and by the **tracing system**.





## DELICACY AND PRECISION IN FRUIT SELECTION



All our automatic systems are designed and produced in Italy by a partner company of Advice&Consulting. This ensures **quality control**, the correct functioning of the systems and, last but not least, rapid **after-sales assistance** and the immedi-

ate availability of **spare parts**.

The video cameras, which are also produced internally, are precise, very high **resolution** and guarantee the most effective possible detection of flaws in the fruit.

Our designs can be customised according to the variety, quantity required and the needs of the client. All the systems used in the calibration lines are **patented**.

The brushing and aligning systems operate very gently in order to ensure that the fruit is not damaged. The **lubrication of the chains** and the **washing of the rollers** are also fully **automatic operations**.

The calibration lines can be integrated with a packing **system** and automatic pallet loading to take you up to the final stage of processing.

For cherries and blueberries, we can offer a new, extremely hi-tech classification system, which efficiently and delicately views the surface of every piece of fruit, thus avoiding human error and unnecessary waste.

Upon request, the processing line can include other, fully automatic technological devices, to carry out procedures such as **emptying/filling of bins with or without water, labelling, case filling, weighing and washing**.



## RELIABLE AFTER-SALES ASSISTANCE

Before delivering your processing line, we **test** it to make sure it works perfectly.

At this stage we can also organise a **visit** and **training** session for you at our headquarters. In addition, we offer **after-sales assistance** to deal with any technical issues either remotely or on-site via our local branches.

## PACKAGING

Special card and paper packaging for fruit in various formats, colours and sizes, a vast assortment of bags for packaging and storage, accessories that maintain the freshness of the fruit, absorb ethylene and extend the shelf life of the produce.

Corrugated cardboard or recycled plastic packaging that is ideal for packing fruit, keeping it protected, intact and fresh.



60x40x18 cm



50x30x11 cm



60x40x11 cm



50x30x18 cm



## AUTOMATIC PALLET LOADING

The automatic pallet loaders enable the **palletization of different types of crate**.

The pallet loading technology is directly connected to the packaging phase and allows the crates to be transferred onto a roller conveyor which stacks them using a gripper with self-centering sides, guaranteeing a **safe and secure grip on crates**.

These systems are constructed with sturdy up-rights which accommodate the self-centering gripper. Each piece of technology is equipped with a touch screen operating panel which facilitates the operator's tasks in the various phases of processing and programming.

## MANUAL PALLET LOADING

If you prefer to load the fruit onto the pallets manually, Advice&Consulting offers a wide range of specialist products for transporting the fruit in total safety, without risking any damage to it during the long journeys or periods of storage, while **preserving its freshness** and guaranteeing the **maximum stability of the pallets**.

These are **resistant, flexible** and **lightweight** products, which allow a 20% reduction in packing materials with up to 30% better performance. They are also **water repellent and 100% recyclable**.



Some of our References



Armenia

GreenCo.

Moldavia

- Alfa-Nistru
- Alina Sargu
- Plaiul Birladean

Kazakhstan

- Amal Bio
- Arnau Agro
- Dala-Fruit.kz
- Rinat Raficof
- Sad Citic

Kirghizistan

- KFH Kazy-bek Agro
- IP Abdyrakhmanov

Russia

- Angelinskiy Sad
- Sad Gigant
- Tzentralinoe
- Veydelevskoe
- Zao Loris
- Znamya Lenina
- Kolos Kubani

Uzbekistan

- Agromir
- GDF Export
- Namangan Agro Logistic
- Mironkul Meva
- United Power Group

Turkmenistan

- Eziz Ulkam





**Advice&Consulting®**

**FROM SEEDS TO SMILES**

**ITALY | headquarter**  
Via della Cooperazione, 19  
Medicina (Bologna)  
Italy