



ADVANCED
AGROTEXTILES
&
TECHTEXTILES

AGROTEXTILES & TECHTEXTILES

ARRIGONI
1936  ®



This canvas by Lorenzo Marini tells about Arrigoni ...

THE GROUP

Arrigoni group has been in the technical textile sector since 1936. In 1959 it started the manufacturing of polyethylene nets. It has more than 50 years of experience in the field of technical textiles.

Arrigoni conceives, manufactures and distributes:

innovative agrotextiles for better climate control and a healthier and safer food production; other outdoor technical fabrics for technical and / or environmental uses.

Today it is the European leader in technical textile applications for agriculture.

The group is located in Italy. The head office is in Uggiate Trevano (Milan area) next to Linate and Malpensa airports. The three production plants occupy a total area of 110,000 square meters; The covered area is 39,000 square meters. Direct employees are 160, the production capacity is of more than 6,000 tons a year of nets, which corresponds to about 75 million m² (7,500 hectares) of average weight textiles.

The great range of nets and fabrics produced by Arrigoni group includes accessories and other articles as well, which are manufactured by important companies and always guaranteed, based on quality and reliability tests both performed in lab and in the field. Arrigoni's team is skilled, expert and competent. It is characterized by a deep passion for product and process innovation; an energy full of talent is dedicated to the quality and reliability of the product.

The group is financially solid; extrusion, weaving and converting equipment are in the vanguard of technology. R & D activity and Quality Control are the main focus of the Company.

ARRIGONI is present in 72 countries throughout the world, thanks to its distributors. In Italy its presence is really important: it is actually the leader in this field and its brand is a guarantee of high quality products. Arrigoni's relationship with selected distributors is very close and is managed through a network of qualified and professional agents.

FOCUS



Uggiate Trevano (Milan – Italy): Head office

The Agrotextile sector is the main application of Arrigoni's technical textiles.

Demand is growing and is driven by different trends:

- Climate change (« tropicalisation » and extreme weather phenomena) with consequently higher need for crop protection
- Presence / attack of new insect species from other continents
- Change in eating habits (increasing consumption of fruit and vegetables, even out of season)

- Greater sensitiveness toward organic food and safe food
- Modernization of agriculture and maximum attention to environmental sustainability (eg the reduction of water requirements and the sharp reduction of chemical treatments of crops)
- Tendency to replace plastics in fruit and vegetables production with textile screens to preserve fragrance and shelf-life of the product.





Putignano (Apulia – Italy): Factory and Laboratory for Research & Development

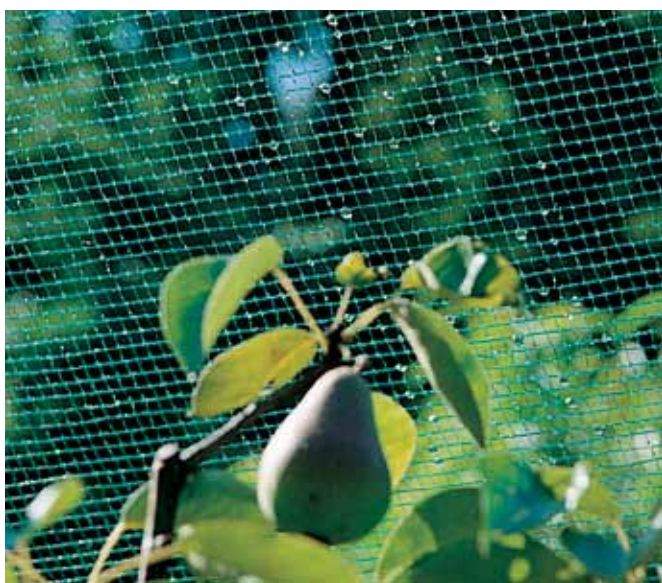


Schio (Veneto – Italy): Factory, specialists of the anti-hail and tailor-made production



Târgu Mureș (Mureș district – Romania): Factory

TWO SECTORS



The **AGROTEXTILES** sector offers innovative agrotexile screens for climatic and biological control of crops such as:

- BIORETE® – anti-insect screen with high air permeability.
 - PRISMA®/ROBUXTA® – thermo-reflective screens.
 - PROTECTA® – Rain control systems.
 - PROTECTIVE NETS such as anti-hail, windbreak, shading and anti-frost nets.
- The range is completed by utility nets (for crop support, fruit harvesting, mulching).

The gardening range **Eco Garden** is added to the professional sector.

Our Mission: Advanced Agrotextiles for safe food and sustainable agriculture.



The **TECHTEXTILES** sector satisfies different needs:

- Industry – nets for technical use. Anti-dust barriers in the steel and mining industry. Insertion in multi-layer composite materials.
- Construction – nets for the protection and safety of the building sites: for scaffolding, delimitation, security, load protection, for plastering.
- Outdoor – elegant, useful, polyhedral and essential fabrics for shading structures, shielding, outdoor furniture and scenographic effects.

Our mission: Techtextiles for a better life.

MISSION



Until a few years ago, they were called “protective nets”. Now they are “green healthcare solutions”.

This evolution bears the signature of Paolo Arrigoni, CEO of the Arrigoni group.

“The intuition comes from my experience - Arrigoni explains - I am son of a weaver and a pharmacist, I have a humanistic education and I love nature. In short, from the beginning I had to do with health, nature and ... looms!”. How can you combine these elements, so different from each other?

“Everything starts from a reflection on harmony – the entrepreneur continues – For any crop, harmony means growing and developing in a favorable environment.

This can be created through innovative agrotexile screens that allow the plant to dialogue and relate to the environment. Thus, absorbing the power of nature – air, water, sun – but at the same time enjoying protection from external climatic events and insect attacks”. The environment and the favorable microclimate make the plant healthier and stronger. It therefore has less need for treatments and pesticides”.

“Not having to defend against climate adversity – Arrigoni notes – plants can invest their energies in fruiting, increasing the healthiness and content of polyphenols and contributing to modern and sustainable agriculture.

STRENGTHS

ARRIGONI brand: it means seriousness and high quality. The products are strictly controlled and are the result of:

- a) careful selection of raw materials: only virgin granules from leading European producers
- b) a high-tech manufacturing method
- c) an experienced and qualified production team.

Excellence in quality: the comparative tests of accelerated aging, carried out both on our products and on those of our competitors, show that the ARRIGONI networks are high-strength and long-lasting: Arrigoni product is not a purchase but an “investment”. The ARRIGONI textiles are, for the user, an investment valid for many years. Not price but TCO (Total Cost Ownership)! Our quality control laboratory guarantees the consistency of rigorous standards.

the DNA of the net: Arrigoni screens contain a chemical tracer that allows them to be recognized: Arrigoni guarantees and signs the product.

Research and Development: ability, competence and investment to research and implement new products and a constant improvement of the process.

Production plants: Arlene HT® high-tenacity yarn production lines are ultra-modern high-tech, equipped with sophisticated mixing and control systems. This makes it possible to obtain carefully UV-stabilized yarns, which are highly resistant and durable. Textile machines are manufactured by leading manufacturers (Sulzer Rütli - CH and Karl Mayer - DE) and guarantee uniformity and dimensional accuracy of fabrics.

The range of products and service: ARRIGONI offers a very articulated product range that includes monofilament and flat filaments screens (both woven and knitted).

A warehouse of over 10 millions square meters of finished product is available to customers. The packaging and presentation of the product are accurate in appearance and functionality.

ARRIGONI, a present and credible partner always ready to assist the customer before and after sales.



Sales (2017)	€ 32 million / year	
Total surface	m ² 110.000	
Covered surface	m ² 39.000	
Total investments before 31.12.2017	€ 38 million	
Investments Budget 2018 - 2021	€ 10,5 million	
R&D Investments Budget 2018 - 2021	€ 1,5 million	
Collaborations with Universities / Research Institutions	12	
Employees and staff	160	
Yarn manufacturing lines	9	
Looms	Sulzer	100
	Rachel	20
Active customers	2.600	
Countries of operations	72	
Participation at trade fairs	last 5 years	32
Production capacity	6,000 tons of fabrics and technical screens, equal to 600 complete trucks or 7,500 covered hectares	

EXPERIENCES IN **AGROTEXTILES**



Ivan Barcella - with over than 25 years of experience in the field – uses Arrigoni products for the protection of “baby leaf” salad crops by the negative effects caused by excessive sunlight. Arrigoni thermo-reflective screens PRISMA® are installed on 25 hectares of greenhouses and tunnels.



Open field cultivations of leek in the Netherlands: Arricover protects crops from frost in open field creating a dry microclimate under the net that increases the resistance of plants to frost.



Fructus net on wine grape for hail protection. Its textile scheme allows good tension even for long distances.



Cultivations of tomatoes, peppers, cucumbers and more in Mexico: net house created with BIORETE® 50 AIR PLUS to protect crops.

EXPERIENCES IN **TECHTEXTILES**



During the restoration of the Royal Palace in Naples, the net 5031AV EDILIA EXTRA ivory color was used to screen scaffolding.



The steel company ILVA in Taranto selected the net Arrigoni LIBECCIO 70 to prevent the dispersion of fine dusts in the surrounding areas of mining camps.
www.antidustmesh.net



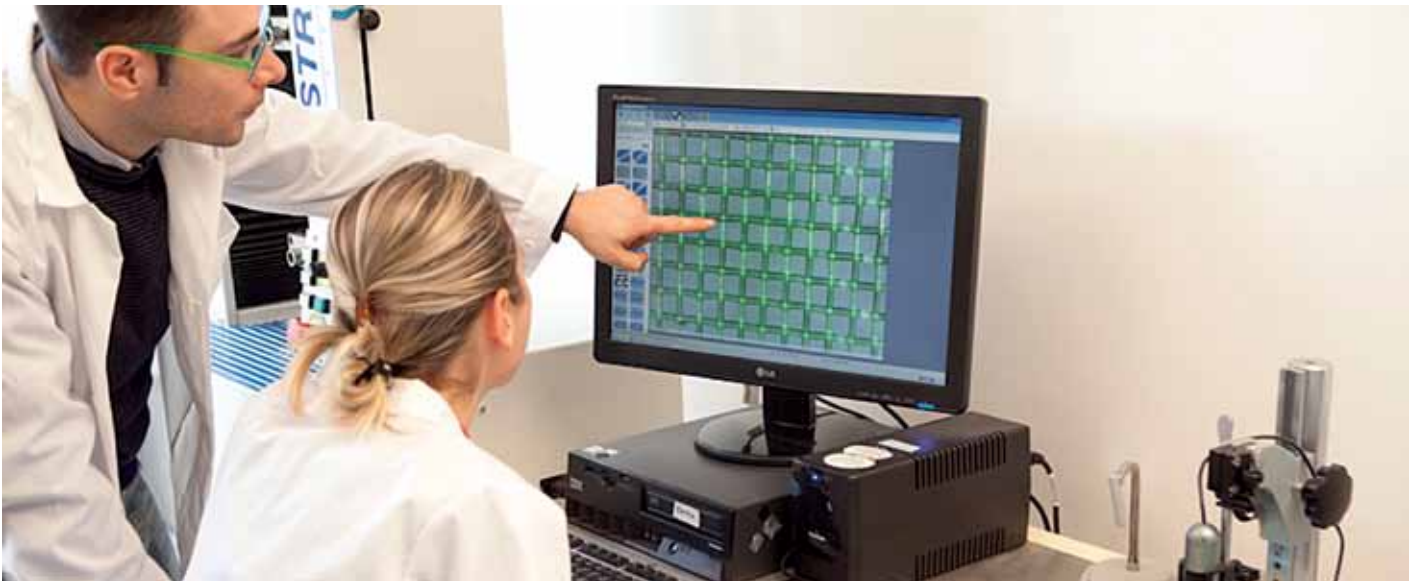
During the restoration of the Louvre Palace in Paris, the net 5021BL EDILIA has been selected to protect scaffolding for its transparency features and elegance.



During the restoration of Milan Cathedral, the net 5031BL Edilia Extra was used to screen scaffolding.



RESEARCH AND DEVELOPMENT



Main R&D aims and scopes

- Characterizing Arrigoni's products (yarns and technical textiles):
 - air permeability of fabrics;
 - investigation of the behavior of textiles when exposed to rain;
 - measurement of the interaction with solar radiation (transmission, reflection, light diffusion);
 - measurement of the standard shading coefficient;
 - evaluation of the stress / deformation curve - elongation over time and following exposure to sun, rain and humidity;
 - assessment of the environmental impact (eg energy content of the product, reduction of water requirements).
- Improving process performance:
 - Designing a new production environment for new and optimized strategies;
 - The reduction of manufacturing defects, intervening on devices and processes;
- Developing innovative and performing products
 - defining properties with a strong link to product performance;
 - measuring when conditions are perfectly known and devices are accurately chosen or designed to each purpose;
 - collaborating with highly skilled players (universities, research institutes, companies)

Arrigoni method:



Tests carried out in the lab.

What happens to nets ...

... when exposed to sun and moisture

Both nets and single yarns go through an accelerated weathering tester (UV exposition, rain intensity and moisture content-controlled cycles) to test their ageing.

... when crossed by wind

Nets are characterized with 3 purposely designed devices. They create defined flow condition to investigate fluid dynamic interactions (forces and reactions, pressure differences across the net, flow reduction compared to wind intensity, air permeability index related to porosity) with flow at different slopes (0÷90°).

... when either heated up or cooled down

Nets are positioned in a climatic chamber to measure their real behavior in terms of shrinkage when exposed to variable temperature regimes to predict their performance.

... when requested to shadow

Nets are classified with respect to their capacity to reduce light transmission in a shading test device compliant to EU standards measurement.

... when stretched

Both nets and yarns are brought to rupture by a strength tester and the stress/strain curves are drawn.



Arrigoni collaborates with:



Politecnico di Milano - Dipartimento di Chimica



Università Federico II di Napoli – Dipartimento di Agraria



Università del Salento - Dipartimento di Ingegneria dell'innovazione



Università di Bari - Dipartimento di Scienze agro-ambientali e territoriali



Università di Foggia - Dipartimento di Scienze Agrarie, degli Alimenti e dell'Ambiente



Istituto Scientifico di Chimica & Biochimica G. Ronzoni (Milano)



Università della Basilicata - Dipartimento Tecnico Economico Per La Gestione Del Territorio Agricolo-Forestale



Consiglio per la Ricerca in Agricoltura e l'analisi dell'economia Agraria di Pontecagnano (SA)



Fondazione MACH (S. Michele all'Adige (TN))



University of Belgrade – Faculty of Agriculture

TEN **REASONS** to choose Arrigoni

EXPERIENCE

Arrigoni group has been in the technical textile sector since 1936. In 1959 it started production of nets in polyethylene. Over more than 30 years Arrigoni nets are installed in 50 countries with the most different climates.

STRENGTH

Capital and reserves are more than 9 million euro worth. Assets (plants / equipments / factories) are 37 million euro worth. Production capacity of 75 million sqm / year (7.500 hectares).

ETHICS

Arrigoni pursues the aim "KALÓS KAI AGATHÓS": beauty is also good. Beautiful, useful, innovative products. Respect for the environment (EMAS certification) and for people: employees, customers, suppliers. Offices and factories are bright and surrounded by greenery. Profits are reinvested in the company.

E.F.A. Environmentally Friendly Acts

Arrigoni takes the greatest care to reduce its environmental footprint, carefully managing all phases of the product manufacturing and investing in a cause in which we really believe. Reduction of emissions in the production stage. Higher quality means longer life and therefore less waste. Responsibility for the final step of the life cycle of the product (Conai, Polieco). 30% of the energy needed for the production process comes from renewable sources.

TECHNOLOGY AND PRODUCTION

Extrusion, weaving and conversion plants are of high technology and ensure quality. Extruders MACCHI (I) - Looms KARL MAYER (D) and SULZER (CH). Arrigoni buys raw materials from the leading suppliers of granules (LIONDELL BASELL) and additives (CLARIANT).

LABORATORY AND RESEARCH

The laboratory for analysis and quality controls our production in all stages. Among other devices, it includes:

- a climatic chamber (to verify nets performance at both high and low temperatures [-10÷70°C])
 - Q.U.V. Machine to carry out aging tests on the nets. Arrigoni is always in contact with Universities and Research Centre's in a burst of constant innovation.
 - devices for air permeability measurement; new high technology test benches measure the quantity of air flowing through the nets.
-

PRODUCT RANGE

A varied, complete and competitive range of fabrics designed to meet every need: monofilament and tape nets, woven or knitted nets

QUALITY AND BRAND

High quality and long lasting: our brand has always been recognized in the market for these characteristics. The product Arrigoni is not a purchase, it is an investment that is amortized over the years. Not price but TLC – TOTAL COST OWNERSHIP. Certified production: ISO 9001:2008, ISO 14001:2004 and EMAS Reg. CE 1221/2009. Cared and attractive packaging - Made in Italy.

SERVICE AND RESPONSABILITY

Attention to customer needs, listening and dialogue one to one. Warehouse with more than 10 million of square meters of fabrics. Order processing in a very short period of time. Post-sale dialogue with the customer. Product liability and warranty. DNA of the net: Arrigoni nets contain a chemical tracer that allows this recognition.

STAFF

Women and men in Arrigoni are skilled, attentive, enthusiastic and dedicated to work. A “smart” attitude allows to follow (and often predict) market trends. The staff is in love with beauty and proud to manufacture useful products.

	
CRIBIS attesta che	
In data	23 GENNAIO 2018
la Società	ARRIGONI SPA
ha ottenuto il	
CRIBIS	
Prime Company	
il riconoscimento di massima affidabilità commerciale	
Il riconoscimento è basato sul CRIBIS Rating, un indicatore dinamico e costantemente aggiornato sulla affidabilità dell'azienda	
 Sales Leader	 Amministratore Delegato

PRESS REVIEW

Une résistance à l'épreuve du temps

Jean-Luc Peyramaure, arboriculteur en Corrèze, est un adepte du filet tricoté qu'il utilise depuis quinze ans. La longévité, la résistance et la souplesse, sont les trois points forts de ce filet paragrêle, remis au goût du jour par la société Emis France.

« En quinze ans, j'ai grillé six fois, sans constater le moindre dégrat sur mes vergers. J'ai également été confronté à des chutes de neige à deux reprises, sans oublier la tempête de 2000. Là encore, mes filets ont parfaitement joué leur rôle de protection. Ceux de mon voisin, pourtant achetés deux ans auparavant, n'ont pas résisté », témoigne Jean-Luc Peyramaure, producteur de pommes à Beyssemaur en Corrèze. Du coup, lorsqu'il a fallu les renouveler après quinze années de services sans faille, ce dernier n'a pas hésité une seconde. « J'ai racheté pour la seconde fois des filets tricotés de fabrication Emis France pour mes 14 hectares. Certes, leur coût est supérieur à celui des filets tissés, mais leur longévité est doublée. En termes d'amortissement, le calcul est vite fait », poursuit l'arboriculteur.

« La solidité de nos filets tricotés, conçus et réalisés avec notre associé Arrigoni SPA (la-



La solidité du fil tricoté à la protection des gourmands. Mais si un arrosage ou givrage, le tissu ne s'abîme pas.

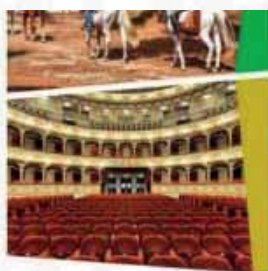
de surface du filet tricoté est supérieure de 20 % à celle du tissé (60 g/m² au lieu de 50 g/m²) en raison d'un nombre de fils supérieur. Cette solidité crée une barrière efficace contre les gourmands qui ont tendance à frotter sur les mailles provoquant des déchirures. « Sur certaines variétés très vigoureuses ou sur des zones poussières, on comptabilise jusqu'à 30 à 40 gourmands traversant tous les 10 mètres, si le filet n'est pas suffisamment solide : on



Les mailles du fil tricoté sont de forme triangulaire avec un renfort du fil de trame sur une autre chaîne tous les trois centimètres. Un fil noir à l'endroit des cordons permet de bien positionner le fil au moment de la pose.

d'une largeur de 5 cm consolident la structure sans entraver le déchargement. « Lorsque la grille arrive sur le bord du fil, le renfort se soulève permettant une vidange rapide », observe Jean-Fris d'Argaignon, de la coopérative La Périgourdine qui distribue les filets Emis France.

OPEN DAYS
ESTATE 2013
Puglia



Seguici su
#pugliaopendays

XVII Edizione 2013 Un'emozione chiamata libro - Os
10 Luglio - 11 Agosto

Corriere Del Mezzogiorno • Bari • Crinaca • Come Cambia Il Volto Dell'Ilva La Rete Di 21 Metri E 2 Chilometri

IL SIDERURGICO DI TARANTO

Come cambia il volto dell'Ilva La rete di 21 metri e 2 chilometri

*Prende forma la struttura che arginerà le polveri
E all'acciaieria 2 rinasce la parete granata*



La recinzione

moloc fumante si stesse rifacendo il look e avesse bisogno di presentarsi all'esterno con un abito diverso. La sintesi del teorema ha la sua traduzione pratica, visibile, appena alle spalle del quartiere Tamburi. Lungo una direttrice angolare di 1.700

TARANTO — Lavori in corso, e si ravvisano a occhio nudo. Cambiando dentro, adeguandosi ai severi parametri introdotti dalla nuova Aia, l'Ilva cambia anche fuori. Come se, per essere in linea con le regole anti-inquinamento imposte dall'affondo della magistratura, il



NOTIZIE CORRELATE

- Taranto, seggi aperti fino alle 22 per il referendum sulla chiusura dell'Ilva (14/04/2013)



Arrigoni: hi-tech, light and high-performance agro-textiles

An increasing number of high-tech solutions find application in the professional agricultural sector. In the agro-textile field in particular, the need to improve existing solutions focuses on some specific trends: increasing the resistance of protection nets while reducing fabric weight and improving air permeability so crops can be healthier.



Announcements

- Click here to receive this news directly in your inbox



Stampato: 24 settembre 2017

INCARICHI & TECNOLOGIE

Arrigoni: «Green healthcare solutions, la storia di un'intuizione»

Quasi una trentina di anni fa erano chiamati "net protettivi" ora sono le "green healthcare solutions", le soluzioni verdi per la salute dei frutti, delle piante e dell'ambiente. Un'evoluzione che porta la firma di Paolo Arrigoni. Capo del gruppo omonimo Arrigoni spa, leader europeo nelle applicazioni tessili innovati per l'agricoltura.

L'intuizione venne dal mio visio - spiega Arrigoni a *farmernews* - Sono figlio di un tessitore e di una farmacia, ho una formazione classica e amo la natura. Insomma, dentro ho auto a due file con salute, natura e... *farm*!"



"Less pesticides, better cropping for healthier crops and people"

Plant growth and development is a complex process, influenced by different biotic and abiotic factors. If we exclude the genetic basis of the plant, we can say that the state of plants, yield and quality of crops is highly influenced by plant environment.

Milena Poledica, PhD

Every improvement in crop yield and quality is based on strength and ability of plants to defend against environmental stress and other factors. If we consider that plants cannot move to a better habitat in stress conditions, the good agricultural practice and plant protection become important task to overall crop, achieve quality and ensure a profitable production.





COMMUNICATION

TRADE FAIRS & TECHNICAL MEETINGS



Arrigoni S.p.A. It has long been spreading an innovative message in the field of technical textile applications and in agriculture. However, a message is innovative only if conveyed by innovative tools: for this reason, we keep all our customers updated through a modern website and thanks to the main Social Networks through which we disclose all our innovations. We love to meet professionals and enthusiasts periodically at the main trade fairs all over the world.





TRADEMARKS AND DIDACTIC POSTERS

HEALTHY FOOD FOR HEALTHY PEOPLE

AGROTEXTILES & TECHTEXTILES
ARRIGONI
1954

DROSOPHILA SUZUKII

AGROTEXTILES & TECHTEXTILES
ARRIGONI
1954

ADVANCED AGROTEXTILES

REAL PROTECTION

AGROTEXTILES & TECHTEXTILES
ARRIGONI
1954

ARRIGONI INNOVATION FOR ACTIVE PROTECTION

LA NOSTRA NATURA È PROTEGGERLA

Ogni anno si spargono 7.500 ettari di campi in tutto il mondo alle nostre cure. La tecnologia dei nostri schermi protegge le piante da condizioni climatiche avverse, dall'aggressione di insetti e patogeni nocivi. Consentendo ai coltivatori di limitare i rischi e ottenere il massimo valore commerciale al proprio raccolto.

www.arrigoni.it

SOLANACEAE CROPS

AGROTEXTILES & TECHTEXTILES
ARRIGONI
1954

TABLE AND WINE GRAPES

AGROTEXTILES & TECHTEXTILES
ARRIGONI
1954

ARRICOVER FIELD TRIALS

AGROTEXTILES & TECHTEXTILES
ARRIGONI
1954

SALAD AND BABY LEAF

AGROTEXTILES & TECHTEXTILES
ARRIGONI
1954

ARLENE HT
BIORETE
DELIMITA
D-SCREEN
ELIX-NET
PRISMA
PROTECTA
ROBUXTA

All information about our products can be found in brochures and in-depth catalogs that are easy to consult. Our expert staff is always available to answer any need.



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