



# A.T Europe GmbH

[www.atgermania.com](http://www.atgermania.com)

**EXCELLENCE  
IN TOBACCO  
SEED & BREEDING**

**ADYAMIC & REACTIVE TEAM AT YOUR SERVICE YOUR PARTNER IN SUCCESS**







# R&D, PILLAR OF OUR STRATEGY



Key aspects inherent to tobacco cultivation and products are carefully taken into account in our variety selection:

- Leaf body, colour and industrial processing properties
- Nicotine levels and sugar balance (Flue-cured)
- Yield and yield stability
- Plant general health and resistances to main tobacco pests and pathogens
- Plant architecture for easier sucker control and mechanical harvest







Type		Variety	Leaf Maturity	Yield	Pest and disease Resistances						Potential for leaf		Chemistry		Page N°
					Black root-rot	PVY <sup>N</sup>	TMV	Nematodes <i>M. incognita</i>	Nematodes <i>M. arenaria</i>	Other	Tissue colour	Body quality	Nicotine	Reducing sugars	
FLUE-CURED	Early, filler	AT 683	Very early	<div></div>	R	R	S	S	S	EC	<div></div>	<div></div>	<div></div>	<div></div>	p.6
		AT 6191	Very early	<div></div>	R	R	S	S	S	ORO	<div></div>	<div></div>	<div></div>	<div></div>	p.6
		AT 6201	Very early	<div></div>	R	R	S	S	S	BM	<div></div>	<div></div>	<div></div>	<div></div>	p.6
		AT 6197	Early	<div></div>	R	R	S	R	S		<div></div>	<div></div>	<div></div>	<div></div>	p.6
		AT 6198	Early	<div></div>	R	R	R	R	S		<div></div>	<div></div>	<div></div>	<div></div>	p.7
		AT 6184	Early	<div></div>	R	R	R	R	S		<div></div>	<div></div>	<div></div>	<div></div>	p.7
	Early, semi-aromatic	AT 6180	Early	<div></div>	R	R	S	S	S		<div></div>	<div></div>	<div></div>	<div></div>	p.7
		AT 6118	Early	<div></div>	R	R	S	R	S		<div></div>	<div></div>	<div></div>	<div></div>	p.7
		AT 689	Early	<div></div>	R	R	R	R	S		<div></div>	<div></div>	<div></div>	<div></div>	p.8
		AT 678	Early	<div></div>	R	R	S	R	S		<div></div>	<div></div>	<div></div>	<div></div>	p.8
	Medium, semi-aromatic	AT 609	Early	<div></div>	R	R	S	S	S		<div></div>	<div></div>	<div></div>	<div></div>	p.8
		AT 6164	Early	<div></div>	R	R	R	R	S		<div></div>	<div></div>	<div></div>	<div></div>	p.8
		AT 6179	Medium	<div></div>	R	R	R	R	S		<div></div>	<div></div>	<div></div>	<div></div>	p.9
		AT 6154	Medium	<div></div>	R	R	R	R	S		<div></div>	<div></div>	<div></div>	<div></div>	p.9
	Late, filler to semi-aromatic	AT 6178	Medium	<div></div>	R	R	S	R	S		<div></div>	<div></div>	<div></div>	<div></div>	p.9
		AT 6194	Medium	<div></div>	R	R	R	R	T	NEM	<div></div>	<div></div>	<div></div>	<div></div>	p.9
AT 354		Late	<div></div>	S	R	S	R	S		<div></div>	<div></div>	<div></div>	<div></div>	p.10	
AT 6167		Late	<div></div>	R	R	S	R	S		<div></div>	<div></div>	<div></div>	<div></div>	p.10	
	AT 6176	Late	<div></div>	R	R	S	R	S		<div></div>	<div></div>	<div></div>	<div></div>	p.10	
	AT 6148	Late	<div></div>	R	R	S	R	S		<div></div>	<div></div>	<div></div>	<div></div>	p.10	
BURLEY	Filler	AT 5119	Very early	<div></div>	R	R	S	S	S	BM	<div></div>	<div></div>	<div></div>	-	p.12
		AT 2604	Medium	<div></div>	R	R	S	S	S		<div></div>	<div></div>	<div></div>	-	p.12
	Aromatic	AT 593	Early	<div></div>	R	R	R	S	S		<div></div>	<div></div>	<div></div>	-	p.12
		AT 501	Early	<div></div>	R	R	S	S	S		<div></div>	<div></div>	<div></div>	-	p.12
		AT 221	Early	<div></div>	R	R	S	S	S		<div></div>	<div></div>	<div></div>	-	p.13
		AT 5109	Medium early	<div></div>	R	R	S	S	S	BM	<div></div>	<div></div>	<div></div>	-	p.13
		AT 5118	Medium	<div></div>	R	R	R	S	S	BM/EC	<div></div>	<div></div>	<div></div>	-	p.13
		AT 562	Medium	<div></div>	R	R	R	S	S		<div></div>	<div></div>	<div></div>	-	p.13
		AT 574	Medium	<div></div>	R	R	R	S	S	BM/EC	<div></div>	<div></div>	<div></div>	-	p.14
		AT 5107	Medium late	<div></div>	R	R	R	S	S	BM	<div></div>	<div></div>	<div></div>	-	p.14
DARK	Paraguay	AT 1000	Medium	<div></div>	S	R	R	S	S	BM	<div></div>	<div></div>	<div></div>	-	p.16
		AT 420	Medium	<div></div>	R	R	R	S	S	BM	<div></div>	<div></div>	<div></div>	-	p.16
		AT 1105	Medium	<div></div>	S	S	R	S	S		<div></div>	<div></div>	<div></div>	-	p.16
	Dark Kentucky	AT 16410	Early	<div></div>	R	R	R	S	S		<div></div>	<div></div>	<div></div>	-	p.16
		AT 446	Medium	<div></div>	R	S	S	S	S		<div></div>	<div></div>	<div></div>	-	p.17
		AT 160	Medium late	<div></div>	R	S	R	S	S		<div></div>	<div></div>	<div></div>	-	p.17
	CW *	AT 180	Medium	<div></div>	S	S	-	S	S	BM	<div></div>	<div></div>	<div></div>	-	p.17

\*CW : Cigar Wrapper

Pathogens	Resistance described
Black root-rot	<i>Thielaviopsis basicola</i> (Chalara elegans)
PVY <sup>N</sup>	Potato virus Y, necrotic
TMV	Tobacco Mosaic Virus
Southern root-knot nematodes	<i>Meloidogyne arenaria</i>
Southern root-knot nematodes	<i>Meloidogyne incognita</i> races 1-3
EC, Powdery mildew	<i>Erysiphe cichoracearum</i> DC
BM, Blue mold	<i>Peronospora tabacina</i>
ORO, Broomrape	<i>Phelipanche ramosa</i> ( <i>Orobancha ramosa</i> )

Immunity - roots fully healthy with no lesion due to pathogen, at all plant growth stage.

Resistance to vein necrosis caused by common PVY<sup>N</sup> strains.

Resistance to TMV common strains.

Tolerance to *M. arenaria*

Resistance to *M. incognita* races 1-3.

Resistance with no infection at all plant growth stage.

Intermediate resistance (IR). Young plants are susceptible and must be protected when blue mold is a possibility. In the field, the resistance is typically expressed before flower initiation, starting at CORESTA growth stage 1112: 12 unfolded leaves (> 4 cm length), with no or only few spots due to blue mold on these leaves.

Intermediate resistance (IR). Plants are infected by *O. ramosa*, however later and at a lesser extent than in susceptible cultivars. In common situations, this allows the crop to develop.

**NEW!** Boomrape Tol.

**NEW!** Blue mold Tol.

**NEW!** Shisha Top Quality

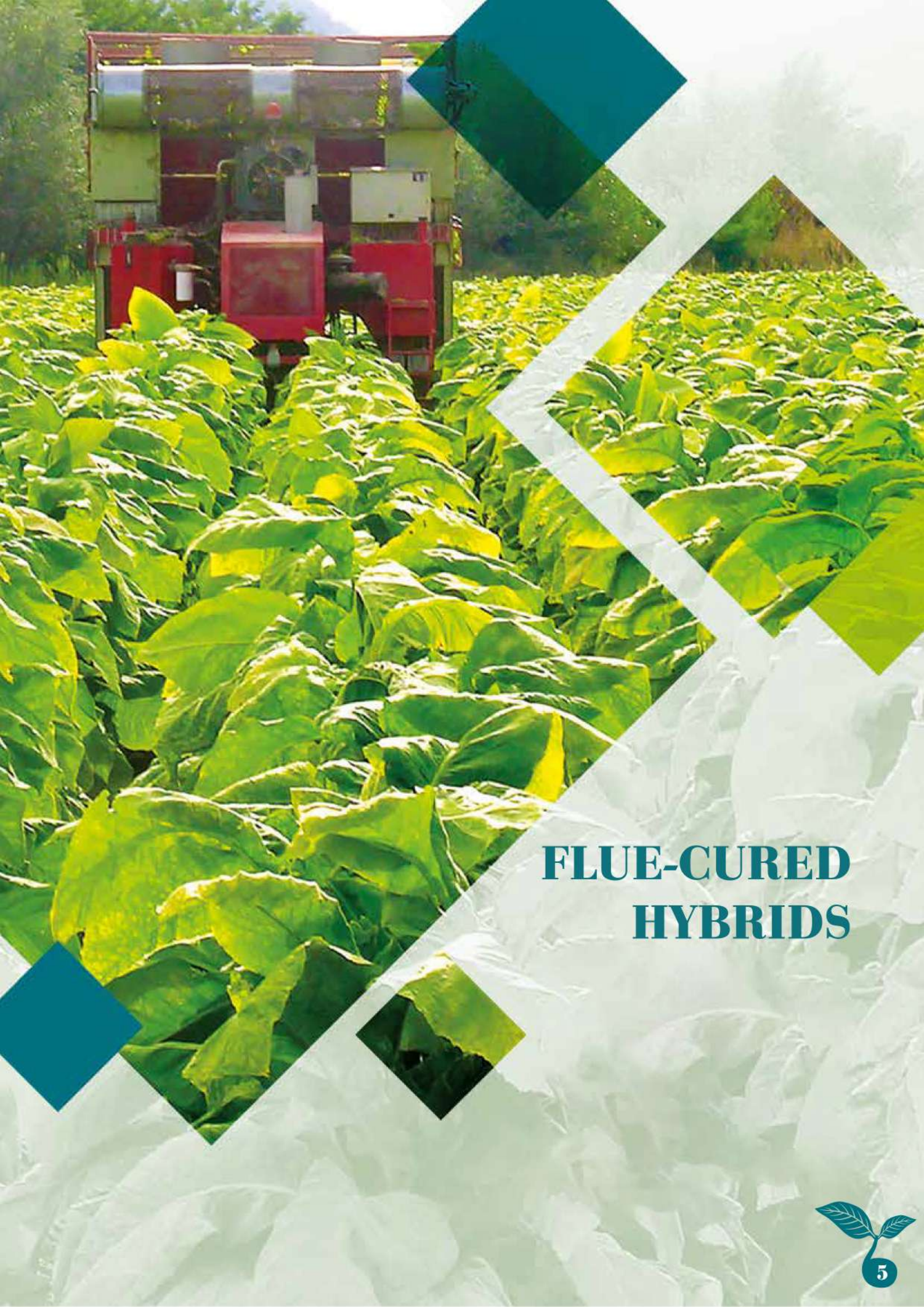
**NEW!** High Quality, TMV res.

**NEW!** Improved tolerance to *M. arenaria* nematodes

**NEW!**

This information is provided for guidance for the users in typical situations of tobacco growing. Plant pathogens not cited in the above table may cause diseases on the aforementioned cultivars. New strains of the above cited pathogens, of which existence is not known or not published at printing of this brochure, may cause diseases on the aforementioned cultivars. Unusual agronomic techniques to grow, treat or feed tobacco plants, and / or unusual soil or climatic conditions, are not concerned by this information, which may become irrelevant in these unusual situations.





## **FLUE-CURED HYBRIDS**





# FLUE-CURED EARLY FILLERS

## Shisha Adapted



N°1 Shisha  
Reference

### AT 683

Nicotine ■■■

R. Sugars ■■■

Very Early

**Resistances: Black root-rot, PVY<sup>n</sup>, Powdery mildew**

AT 683 is a very early hybrid selected for curability and high yield potential. It produces a typically clean, sunny light lemon to lemon filler flue-cured tobacco profile with very good body, moderate nicotine and high sugar to nicotine ratio. Ridging is advised.



NEW!  
Broomrape  
tolerant

### AT 6191

Nicotine ■■■

R. Sugars ■■■

Very Early

**Resistances: Black root-rot, PVY<sup>n</sup>, Broomrape IR**

AT 6191 produces a very light lemon filler tobacco, on a very early and short cycle of production. Wait for typical maturity signs for harvesting (white mid-rib colour and leaves that detach easily). A good fertilization balance will support the broomrape tolerance.



NEW!  
Blue mold  
IR

### AT 6201

Nicotine ■■■

R. Sugars ■■■

Very Early

**Resistances: Black root-rot, PVY<sup>n</sup>**

AT 6201 is a very early variety improved for blue mold tolerance and quality. It produces lemon yellow and easy to cure leaves, with a very low stem ratio. This variety is suitable for organic production.



NEW!

### AT 6197

Nicotine ■■■

R. Sugars ■■■

Early

**Resistances: Black root-rot, PVY<sup>n</sup>, Southern root-knot nematodes**

This variety has a high stable yield and quality potential. It produces luminous pale lemon colour matter with very good and hygroscopic tissue texture. Stand-up ability has been improved.





NEW!

## AT 6198

Nicotine

R. Sugars

Early

**Resistances: Black root-rot, PVY<sup>N</sup>, TMV, Southern root-knot nematodes**

AT 6198 is a resistant variety under strong pressure of TMV with high quality and easy to cure tissues. Stand-up ability is good and it can show adaptation in many different climatic conditions.



TMV R and  
high yield

## AT 6184

Nicotine

R. Sugars

Early

**Resistances: Black root-rot, PVY<sup>N</sup>, TMV, Southern root-knot nematodes**

AT 6184 is a filler flue-cured hybrid with good stalk stand-up ability, an important trait for mechanical harvest. Yield and leaf body quality potential are high. This variety will easily produce a uniformly coloured filler flue-cured with high sugar to nicotine ratio.



High yield

## AT 6180

Nicotine

R. Sugars

Early

**Resistances: Black root-rot, PVY<sup>N</sup>**

AT 6180 is an early hybrid with very high yield potential. The plant is strong and will have to be managed accordingly. Tobacco produced is light lemon and homogeneous with a moderate nicotine level.

# ..... FLUE-CURED SEMI AROMATIC



## AT 6118

Nicotine

R. Sugars

Early

**Resistances: Black root-rot, PVY<sup>N</sup>, Southern root-knot nematodes**

AT 6118 is a hybrid combining potential for a semi-aromatic style of tobacco and very fast leaf maturity. The leaf colour is lemon to lemon orange, with a low sugar to nicotine ratio. The plant is short and adapted to mechanical harvest.





## AT 689

Nicotine R. Sugars **Early**

**Resistances: Black root-rot, PVY<sup>n</sup>, TMV, Southern root-knot nematodes**

AT 689 is an early flue-cured variety, resistant to TMV, with good leaf body quality, recognised for its curing ability. ITB 689 produces tall plants, ridging is advised.



## AT 678

Nicotine R. Sugars **Early**

**Resistances: Black root-rot, PVY<sup>n</sup>, Southern root-knot nematodes**

AT 678 is a semi-aromatic hybrid with early leaf maturity and good yield. Its good holding ability facilitates the success of flue-curing to deliver a homogeneous and high quality result, lemon to lemon-orange in colour.



## AT 609

Nicotine R. Sugars **Early**

**Resistances: Black root-rot, PVY<sup>n</sup>**

AT 609 is a semi-aromatic hybrid, with early leaf maturity, adapted to short growing seasons, with good holding ability and potential for an evenly coloured, clean lemon semi-aromatic tobacco.



## AT 6164

Nicotine R. Sugars **Early**

**Resistances: Black root-rot, PVY<sup>n</sup>, TMV, Southern root-knot nematodes**

AT 6164 is a hybrid with early leaf maturity and high quality potential. The tall plant has good root system and stalk stand-up ability. Nicotine content is moderate.





## AT 6179

Nicotine R. Sugars **Medium**

**Resistances: Black root-rot, PVY<sup>n</sup>, TMV, Southern root-knot nematodes**

AT 6179 has a strong potential for yield, combined with a good holding ability. It produces a lemon to lemon orange tobacco. Top leaves architecture is well adapted to mechanical harvest with wide and horizontal top leaves.



## AT 6154

Nicotine R. Sugars **Medium**

**Resistances: Black root-rot, PVY<sup>n</sup>, TMV, Southern root-knot nematodes**

AT 6154 is a semi-aromatic hybrid with high productivity. It shows a proven ability to produce high quality raw matter in different climatic conditions.



## AT 6178

Nicotine R. Sugars **Medium**

**Resistances: Black root-rot, PVY<sup>n</sup>, Southern root-knot nematodes**

AT 6178 has demonstrated a strong potential for a superior leaf quality and high yield, with good curing and holding quality. Top leaves of ITB 6178 are wide and horizontal, facilitating mechanical harvest.



## AT 6194

Nicotine R. Sugars **Medium**

**Resistances: Black root-rot, PVY<sup>n</sup>, TMV, Southern root-knot nematodes *M. incognita* & *M. arenaria***

AT 6194 has been selected for its improved tolerance to gall nematodes *Meloidogyne arenaria*. It produces a clean and homogeneous lemon orange coloured flue-cured tobacco with good body and quality. Yield potential is medium.





# FLUE-CURED LATE MATURITY



Easy sucker  
control

## AT 354

Nicotine

R. Sugars

Late

**Resistances: PVY<sup>N</sup>, Southern root-knot nematodes**

AT 354 is a filler to semi-aromatic hybrid with a high yield potential. ITB 354 is easy to top and has a late sucker growth (relative to floral growth stages), which improves the efficiency of sucker control with contact products.



## AT 6167

Nicotine

R. Sugars

Late

**Resistances: Black root-rot, PVY<sup>N</sup>, Southern root-knot nematodes**

AT 6167 is a hybrid with intermediate to late leaf maturity and high productivity. It produces a clean and homogeneous raw matter, evenly lemon to lemon orange coloured with a high sugar / nicotine ratio. Stalk stand-up ability is good and facilitates mechanical harvest.



## AT 6176

Nicotine

R. Sugars

Late

**Resistances: Black root-rot, PVY<sup>N</sup>, Southern root-knot nematodes**

AT 6176 is a hybrid with late leaf maturity, comparable to standard K326. It produces an evenly lemon to lemon orange coloured flue-cured tobacco with good body and quality, moderate nicotine content, and a high sugar / nicotine ratio. Yield potential is very high.



## AT 6148

Nicotine

R. Sugars

Late

**Resistances: Black root-rot, PVY<sup>N</sup>, Southern root-knot nematodes**

AT 6148 is a late maturity flue-cured hybrid, filler to semi-aromatic, with potential for leaf quality and good productivity. ITB 6148 shows a good holding and curing ability.



# BURLEY HYBRIDS







# BURLEY HYBRIDS



**NEW!**  
Blue mold IR

## AT 5119

Nicotine

**Early**

**Resistances: Black root-rot, PVY<sup>N</sup>, Blue mold IR**

AT 5119 is a filler to semi-aromatic Burley hybrid, selected for early leaf maturity and adaptation to limiting temperatures at spring. It is suitable for stalk and leaf harvesting and curing.



## AT 2604

Nicotine

**Medium**

**Resistances: Black root-rot, PVY<sup>N</sup>**

AT 2604 is a filler to semi-aromatic Burley hybrid with a high yield potential and medium leaf maturity, suitable for stalk and leaf harvesting and curing.



## AT 593

Nicotine

**Early**

**Resistances: Black root-rot, PVY<sup>N</sup>, TMV**

AT 593 is an aromatic Burley hybrid with very early, uniform from bottom to top leaf maturity, good yield and strong potential for tan and brown aromatic leaves. The short erect shaped plant is suitable for mechanical harvest.



## AT 501

Nicotine

**Early**

**Resistances: Black root-rot, PVY<sup>N</sup>**

AT 501 is an aromatic Burley hybrid with early leaf maturity and high quality potential. Top leaves are well developed and tan brown coloured. The short erect shaped plant is suitable for mechanical harvest.





Easy sucker  
control

## AT 221

Nicotine  **Early**

**Resistances: Black root-rot, PVY<sup>N</sup>**

AT 221 is an aromatic Burley with strong potential for high quality tan brown coloured tobacco. Top leaves are well developed. Sucker emission is late relative to floral growth, which facilitates their control with contact products.



NEW!  
Blue mold IR

## AT 5109

Nicotine  **Medium-Early**

**Resistances: Black root-rot, PVY<sup>N</sup>, Blue mold IR**

AT 5109 is a new, medium-early maturing aromatic Burley hybrid combining high blue mold intermediate resistance with good leaf quality potential. The plant shape is short with erect leaves, facilitating stalk harvesting by either mechanical or manual means and curing. ITB 5109 should not be stalk-cut too late to avoid higher nicotine levels.



NEW!  
Improved blue  
mold IR

## AT 5118

Nicotine  **Medium**

**Resistances: Black root-rot, PVY<sup>N</sup>, TMV, Blue mold IR, Powdery Mildew**

AT 5118 is a medium maturity aromatic Burley hybrid combining high blue mold intermediate resistance with good leaf quality potential. Leaf maturity is homogeneous from bottom to top, yield potential is high.



## AT 562

Nicotine  **Medium**

**Resistances : Black root-rot, PVY<sup>N</sup>, TMV**

AT 562 is an aromatic Burley hybrid combining a good potential for leaf quality, high yield and moderate nicotine content. It tends to reaching floral growth 3-5 days later than TN 90LC. The plant size is close to TN 90LC. The total nitrogen content of ITB 562 leaves tends to be lower than other aromatic Burley varieties.





## AT 574

Nicotine 

Medium

**Resistances: Black root-rot, PVY<sup>n</sup>, TMV, Blue mold IR, Powdery mildew**

AT 574 is a medium maturing hybrid with a multiple disease resistance package and a proven ability to produce a high quality aromatic style of Burley. The plant shape is cylindrical with erect leaves, the size is close to TN 90LC. It is well suited for stalk harvesting and curing. Good results are also obtained with leaf harvesting.



High yield

## AT 5107

Nicotine 

Medium Late

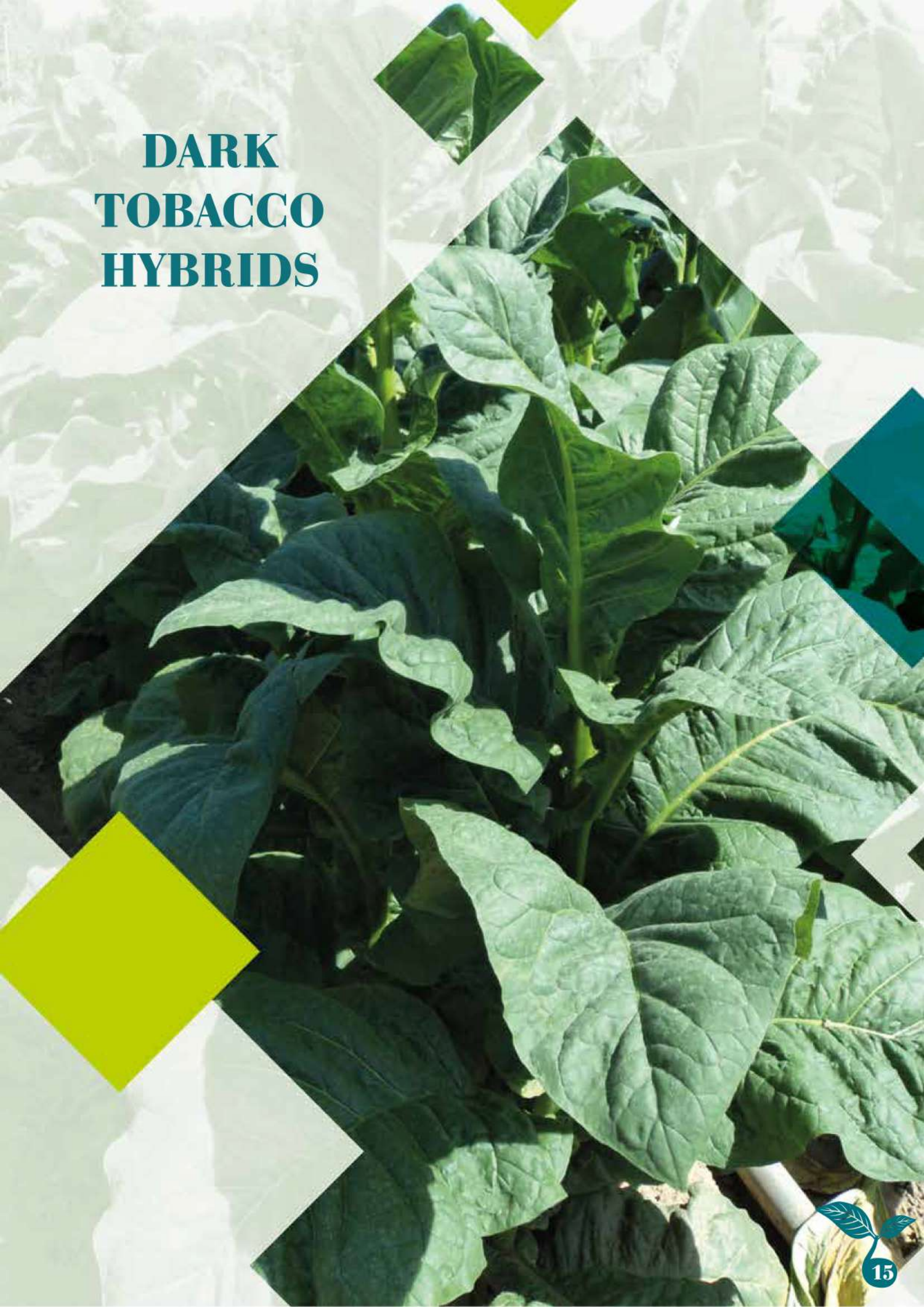
**Resistances: Black root-rot, PVY<sup>n</sup>, TMV, Blue mold IR**

AT 5107 has been selected as a medium-late ripening aromatic hybrid with a very strong yield potential associated to blue mold intermediate resistance. The plant shape is semi-erect, with height close to TN 90LC.





# **DARK TOBACCO HYBRIDS**







# DARK TOBACCO HYBRIDS



**AT 1000** Paraguay, Cigar wrapper Nicotine  **Medium**

**Resistances: PVY<sup>N</sup>, TMV, Blue mold IR**

AT 1000 is a Paraguay subtype of dark air-cured, with extended, semi-erect leaves. Air-curing of ITB 1000 produces a raw matter usable for dark cigarettes, interior of cigars, roll your own blends and, in proper conditions, cigar wrapper leaves.



**AT 420** Paraguay, Cigar wrapper Nicotine  **Medium**

**Resistances: Black root-rot, PVY<sup>N</sup>, TMV, Blue mold IR**

AT 420 is a Paraguay dark air-cured hybrid with a complete resistance package. ITB 420 produces plants with erect leaves, as tall as ITB 1000. ITB 420 is suitable for stalk or leaf harvesting. It shows a good air-curing ability and produces a classical Paraguay style of dark tobacco, with good body and an evenly spread brown colour.



**AT 1105** Aromatic Paraguay, cigar wrapper Nicotine  **Medium**

**Resistances: TMV**

AT 1105 produces a light brown coloured tobacco, with good body and flavourful well balanced smoke. ITB 1105 should be stalk harvested at optimal maturity to ensure the best quality.



**NEW!**

**AT 16410** Dark Kentucky Nicotine  **Early**

**Resistances: Black root-rot, PVY<sup>N</sup>, TMV**

AT 16410 is a new Kentucky dark fire-cured hybrid, resistant to common strains of the PVY<sup>N</sup> virus and TMV. It produces a high quality dark tobacco raw matter with strong, elastic body. Leaf maturity occurs earlier than the reference Kentucky 170, with a lower nicotine content.





## AT 446

Dark Kentucky

Alkaloids 

Medium

### Resistances: Black root-rot

AT 446 is a Kentucky dark fire-cured hybrid with black root-rot resistance and ability to produce a high quality dark Kentucky style raw matter with good body. Compared to the reference Kentucky 170, the flowering date is similar, the yield as well, leaf maturity occurs slightly earlier, and the nicotine content tends to be lower.



## AT 160

Dark Kentucky

Alkaloids 

Medium-Late

### Resistances: Black root-rot, TMV

AT 160 is a Kentucky type tobacco with wide, well developed, velvety, gummy and green coloured leaves. ITB 160 is well adapted to stalk-harvest and air-curing and enables production of high quality dark brown and elastic leaves.



## AT 180

Cigar Wrapper

Alkaloids 

Medium

### Resistances: Blue mold IR

AT 180 is a cigar wrapper subtype of dark air-cured, with wide, horizontal leaves. ITB 180 has been developed in a program aiming at introducing blue mold intermediate resistance into cigar wrapper tobacco.



AT





# SEEDS



We pay a particular attention in the control of the conversion of nicotine to nornicotine throughout the breeding and seed production processes, systematically discarding plants that do not fit our standards. Every Flue-cured, Burley and Dark variety sold has been screened for **low converters, following the LC protocol from the university of Kentucky.**

A . T E r u p e sells **raw seeds** and **pelleted seeds**. Pelleting is operated by the best selected providers. Package size (grams of raw seeds, number of pellets) and pelleting diameter can be specified at the time of the order. **Organic pelleting is available for all our varieties.**

Customer proximity, flexibility and reactivity are the pillars of our daily organization.





# ADDITIONAL SERVICES & OFFERS

## **SPECIFIC BREEDING PROGRAMS UNDER CONTRACT**

Our tobacco breeding expertise makes possible the implementation of specific breeding programs based on your requirements.

This includes:

- development of new varieties adapted to your growing and curing conditions, and to your client expectations,
- introduction of specific traits such as disease resistance traits in your germplasm,
- conversion from fertile to sterile.

## **MALE STERILE OR FERTILE VARIETIES SEED PRODUCTION UNDER CONTRACT**

Our seed production skills make possible seed production from your own parental lines as well as LC (Low Converters) screening and complete seed certification from your productions.

## **NICOTINE AND NORNICOTINE UPCL ANALYSIS ON YOUR SAMPLES**

### **OTHER VARIETIES**

Our most popular varieties are listed in this catalogue. A.T can also produce other seeds, upon request, from:

- varieties with specific properties (high nicotine, low nicotine...),
- fertile varieties (Oriental, others...),
- other *Nicotiana* species (*N. rustica*...).

### **AGRONOMY SERVICES**

- technical assistance for growing and curing our varieties (remote or at location),
- proposal and set up of specific crop management programs.

**PLEASE CONTACT A.T FOR  
MOR CUSTOMISED SERVICES**

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