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Strains improve standard varieties

Info

Little news about Golden Delicious

For Golden Delicious, which is the most frequently grown variety in South Tyrol and throughout Italy, with respect to strains there is little news. In the mountainous regions, where russetting is not much of an issue, Golden Delicious Clone B remains the first choice, while Golden Parsi da Rosa® is proving to be a valuable replacement for Golden Reinders® (Guerra and Österreicher, 2012). Currently, there is insufficient research data on Golden 1895 mema®.

The coming ten years, an increase in the production of Cripps Pink, Ambrosia, Sciros, Scifresh, Honeycrisp, Nicoter, Red Jonaprince, Pinova and the category 'other varieties' is predicted. However, the expectation is that there will be a decline in both the hectareage and the production of *Commodities* (varieties that can be grown and sold without limitation, such as Golden Delicious, Red Delicious, Fuji, Idared, Granny Smith and Braeburn). Gala is the only exception. Both the hectareage and the production of this free variety have been rising for many years.

Of course, the majority of the varieties grown are standard varieties and this will remain so. However, the interest in and demand for new varieties is greater than ever before. This is not surprising in view of the advantages that the new varieties brought to, in particular, the growers who were the first to plant them. A few examples are Gala, Cripps Pink and Honeycrisp. However, there have also been major disappointments, when, due to rash decisions based on an 'incorrect' choice of

variety, the high investments in new orchards proved to be unprofitable.

Latest generation of Gala strains

There is still significant interest in Gala and its many strains. In the past twenty years, Plant Variety Rights have been requested for more than forty of them (see Table 1). Of these, nine were actually granted rights. Sixteen strains are



Tenroy Royal Gala®
Mitchgla Mondial Gala®

Galaxy
Baigent Brookfield®
Gala Schnitzer Schniga®

Simmons Buckeye®
Dendeca
Galaval
Royal Beaut

Gala Schnico Red
Gala 2013 DarkBaron®
Galafab Galastar®
Devil Gala
Bigbucks
Kf576 DarkAnn®
Gala CE 2014

Figure 1. In the past three decades, Gala has evolved from a bicolour variety that develops a striped and limited blush in warm regions into a variety that colours extremely well without stripes. Guerra

still waiting for the results of the Plant Variety Rights procedure. Striking newcomers are the Gala strains that colour clearly earlier and that have a dark uniform red colour at harvest; these include **Gala Schnico Red**, **Devil Gala**, **Gala 2013** and **Bigbucks**. The first data from South Tyrol indicate that these strains also have greater genetic stability than many other strains.

There are clear advantages for the producers, although there is a risk that the fruits colour too early and are picked when they are still physiologically unripe. The apples can be picked in fewer rounds. However, research into internal quality shows that the state of ripening when picked early is heterogeneous, which has also been found for **Simmons Buckeye**[®]. For this strain, this problem can be solved by picking in more rounds.

In the past three decades, Gala has evolved from a bicolour variety that develops a striped and limited blush in warm regions (strains **Tenroy**, **Galaxy** and **Mitchgla**) into a variety that colours extremely well without stripes (see Figure 1). However, this is nothing new. Other originally bicolour varieties have developed comparably in the past.

Strains of other varieties

With respect to other varieties, Red Delicious is a striking example. In South Tyrol (North Italy), strains featuring spur growth are currently recommended, including **Sandidge Superchief**[®], **Evasni Scarlet Spur**[®] and the semi-spur/standard types **Jeromine**, **Stark Guggler Redvelox**[®] and **Roat King**[®]. These strains are mainly uniform in colour with an extremely high percentage of surface colour.

For Braeburn, which is currently no longer planted often in South Tyrol, for many years growers have preferred the strain **Mariri Red Aporo**[®], which has very little competition from other strains.

With respect to Fuji, in South Tyrol, the striped **Fuji Fubrax** tops the list of recommended strains. Up to now, **Aztec Zhen**[®] was the most frequently planted uniformly coloured strain in South Tyrol. In recent years, in general the external quality of the Fuji grown left something to be desired. This has led to tree nurseries now offering new strains that are supposedly better than their predecessors. European Plant Variety Rights have been requested for more than twenty Fuji strains in recent years (see Table 2). However, the information that has been gathered up to now concerning these strains is insufficient to be able to draw final conclusions.



Gala

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For many years, Mariri Red Aporo[®] has been the leading Braeburn strain.

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The currently planted Red Delicious strains are mainly uniform in colour, with an extremely high percentage of surface colour.

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Plant Variety Rights

No Plant Variety Rights have ever been requested for the original varieties of the strains mentioned above. For this reason, the strains of these varieties do not classify as being 'Essentially Derived Varieties'. The same applies to strains of other varieties including Elstar, Jonagold, Stayman and Morgenduft. This provision only applies

when the original variety is protected by Plant Variety Rights and means that anyone who finds a new strain of the original variety must make agreements with the variety owner before he/she can bring the strain onto the market. Examples of these are Cripps Pink and Pinova. In both cases, this provision prevented the commercial spread of a large number of strains. In the case of Cripps Pink, in Italy only the Australian strain

Table 1. Overview of Gala strains for which European Plant Variety Rights have been requested

	Variety	Brand	Variety owner	EU Plant Variety Rights application		Plant Variety Rights granted
1	Annaglo		Wislang Family	NZ	1998	2003
2	Baigent	Brookfield Gala®	Brookfield	NZ	1995	2001
3	Bigigalaprim	Early Red Gala®	Battistini Vivai	I	2002	2007
4	Gala Schnitzer	Schniga®	Schniga GmbH	I	1999	2007*
5	Simmons	Buckeye Gala®	Int. Plant Manag.	USA	1999	2003
6	Mc Donald Gala		Mike Argo WA	USA	2006	2010
7	Delicia		Roduit Aebischer	FR	2003	2007
8	Ifobiga		IFO	F	2006	2011
9	Galaval		Pepinieres du Valois	F	2006	2011
10	Gala Perathoner	Redlum®	Griba	I	2009	
11	Galinette		Olivier Grard	F	2012	
12	Fenshine		FENO	I	2012	
13	Fenstripe		FENO	I	2012	
14	Alvina		G. & E. Fankhauser Pty Ltd.	AUS	2012	
15	Devil Gala		Zanzi	I	2012	
16	Norge		CIV	I	2013	
17	Gala Schnico Red		Schniga GmbH	I	2013	
18	Gala 16357	mema® Gala	Huber Hans	I	(2009)/2014	(2014 withdrawn)
19	Galafab	Galastar®	Starfruits	F	2014	
20	Nikangie Gala		Vivai Agosti	I	2014	
21	Alpigala		IFO	F	2014	
22	Gala Vill		Griba	I	2014	
23	Gala 2013	DarkBaron®	Griba	I	2015	
24	kf576	Gala Dark Annâ	Franz Kaufmann	I	2015	
25	Zouk G1	Gala One®	Zouk B.V.B.A.	BEL	2016	
26	Gala Fult		Fernando Artigas Rocca	URU	2016	
27	Gala 0502		Kiku	I	2016	
28	Gala Rossa	Ruby Gala®	Mc Grath	NZ	1996	2001 (2013 withdrawn)
29	Royal Beaut		N.V. Johan Nicolai	B	1997	rejected
30	Gale Gala		Cadamon	USA	1998	withdrawn
31	Dennys Royal Gala		Dennis & Dennis Paulin	USA	1999	rejected
32	Olsentwo Gala	Pacific Gala®	Olsen richard	USA	2001	rejected
33	Burkitt Gala	Cherry Gala®	The B.M. Trust	NZ	2001	rejected
34	Dalitoga		S.N.C Elaris	F	2002	2007 (2010 withdrawn)
35	Stiekema Gala		Paul Stiekema	USA	2005	2009 (2011 withdrawn)
36	Autumn Gala		International Plant Management Inc.	USA	2006	withdrawn
37	Duje		McGrath	NZ	2006	withdrawn
38	Golden Treat		Vailima Orchard	NZL	2006	rejected
39	Banning Gala	Ultima Gala®	Banning Orchards	USA	2006	rejected
40	Jugala		International Plant Selection	F	2007	rejected
41	Royal Beaut Proselect		N.V. Johan Nicolai	B	2008	withdrawn
42	Gala SchniCo		Schniga GmbH	I	2009	rejected*

Source: www.cpvo.eu, januari 2017

* Appeal procedure running

Rosy Glow and just recently the New Zealand strain **Sekzie** have been grown. The differences between both strains are minimal and with respect to cultivation, probably even insignificant. There are at least a dozen Cripps Pink strains. The filter of the club concept and the provisions concerning Essentially Derived Varieties prevent the uncontrolled spread of these strains.

The same applies to Pinova. In addition to standard Pinova, only **RoHo3615** is currently grown on a commercial scale. Trees of other strains, including **Dalirail**, **Dalinip** and **Daligris**, are not produced.



In addition to standard Pinova, only RoHo3615 is currently grown on a commercial scale.

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Original article

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Improved strains or entirely new varieties?

When planting new orchards, fruit growers mainly prefer to plant strains rather than new varieties. The requirements that growers place on new strains mainly concern the colouring of the apples. However, true innovation happens when entirely new varieties are introduced. Here, innovation means the introduction of new hybrids, which originate from the more than eighty apple breeding programmes around the world. You can read more about this in the article entitled 'The hunt for new future apple varieties' in EFM 5, 2017, Page 6.

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Table 2. Overview of Fuji strains for which European Plant Variety Rights have been requested

	Variety	Brand	Variety owner	EU Plant Variety Rights application		Plant Variety Rights granted
1	Heisei Fuji	Beni Shogunâ	Promofruit	CH	1999	2000
2	Aztec	Zhenâ	Austin Orchards	NZ	2001	2007
3	Azufu		Geefa N.V.	B	2001	2007
4	Hirofu		Geefa N.V.	B	2001	2006
5	Cristia	Supremaâ	EPAGRI	BRA	2001	2011
6	Fuji Fubrax	Kikuâ	Kiku GmbH	I	2005	2014
7	Candy		Austin Orchards	NZ	2010	
8	FUCIV51		CIV	I	2013	
9	FUCIV52		CIV	I	2013	
10	FUCIV181		CIV	I	2013	
11	Fuji VW		Kiku GmbH	I	2016	
12	Fuji B9		Escande	F	1996	rejected
13	Royal Fuji		Artous Group	D	2000	withdrawn
14	Fukan		Feno GmbH	I	2001/2003	withdrawn/ rejected
15	Gilmer Fuji		International Plant Management	US	2003	rejected
16	Spike Fuji		Andrew M. Lind	US	2005	completed
17	Cabp Fuji		Cabp Limited	NZ	2006	rejected
18	Fujiko		CIV	I	2006/2008	withdrawn/ rejected
19	Fugachee Fuji		F.O.P.	US	2008	rejected
20	Fuji 6578		mema	I	2009	rejected*
21	Fuji 111	Fujijamaâ	Kiku GmbH	I	2012	rejected
22	Cufu		Feno GmbH	I	2012	withdrawn

Source: www.cpvo.eu, januari 2017

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