

Current Situation and Future Trends in Apple Cultivars in Western Europe

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Abstract

European production of apples in 1988 was 9 million tonnes (468 million boxes). Three countries produced 75% of the European crop—Italy, Germany and France. The main cultivar, 'Golden Delicious' (33%), is produced primarily in Italy and France although production is decreasing. 'Gala' and 'Granny Smith' could replace some 'Golden Delicious' acreage in southern Europe. Although 'Gala' doesn't appear in the production statistics as yet, 'Granny Smith' reached 279,000 tonnes in 1988. This is 9% more than the previous year. In the northern countries, three cultivars have dominated recent plantings: 'Jonagold', 'Elstar' and 'Gloster'. 'Gloster' will probably not increase in the future but the other two cultivars, which are concentrated in Belgium, Holland and Germany, are receiving increased interest in other European fruit areas such as northern Italy, especially as new, more highly colored strains become available.

Introduction

Apple cultivar trends in western Europe had historically remained fairly stable until the late 1960s. In northern countries—the United Kingdom, Holland, Germany, Belgium and Denmark—the most important cultivars were 'Cox's Orange Pippin,' 'James Grieve,' 'Boskoop,' 'Jonathan' and 'Ingrid Marie,' while in France and Italy, 'Golden Delicious,' 'Delicious' and 'Rome' were more popular (3, 4). In 1968 'Jonagold' was introduced in New York but the cultivar had already been brought to Belgium for testing under number and was soon found to be well adapted (1). 'Golden Delicious' peaked in acreage in the 1970s and has been declining since, while 'Granny Smith' plantings have remained fairly stable. Until recently, 'Cox's Orange Pippin' has commanded the highest prices of any cultivar, though

not always highest profits because it is so difficult and expensive to grow.

Current Situation

It is difficult to express current tree numbers since plant densities have changed so much in recent years. Furthermore, particularly in Germany, backyard orchard production (*streuobst*) can have a significant effect on total apple tonnage from year to year, this coming from rather large, old trees.

Apple breeding programs have been active and productive in a number of European countries: France, Germany, Holland, Switzerland, Sweden, and the United Kingdom. Evaluation of new cultivars from other parts of the world is conducted at many research stations, not as a sideline as seems to be the case in most of the United States. Many of these programs are well coordinated on a national basis with close cooperation between research, extension, nurserymen and growers. Nowhere is this better demonstrated than in the small countries of Holland and Belgium (1).

Total production in western Europe in 1988 was about nine million tonnes (about 470 million boxes), over twice the total U.S. production (2). The "big three" producers are Italy, France and Germany (75% of total). 'Golden Delicious' currently represents about 33% of the total, grown mostly in France and Italy. 'Gala' and 'Granny Smith' may replace some 'Golden Delicious' acreage in southern Europe. 'Granny Smith' had reached 279,000 tonnes in 1988 while 'Gala' is just showing up on production statistics. Three cultivars

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have dominated recent plantings: 'Jonagold' (226,000 tonnes), 'Elstar' (49,000 tonnes) and 'Gloster' (170,000 tonnes).

Other cultivars, expressed in percent of total production, along with an estimate of current planting trends, are shown in Table 1.

Note the downward trend in 'Delicious' and 'Golden Delicious.' This is occurring in the more southern areas as the acreage is being replaced by 'Granny Smith,' 'Gala' and more recently, 'Fuji' and 'Braeburn.' 'Cox's Orange Pippin' shows a downward trend primarily because of economics rather than demand. 'Elstar,' 'Jonagold' and newer U.K. cultivars, e.g. 'Fiesta,' appear to be more profitable for the grower. Other older cultivars, e.g. 'Rome Beauty,' 'Jonathan,' 'Ingrid Marie,' 'James Grieve' and 'Boskoop' are gradually giving way to newer cultivars, all (except 'Granny Smith') from breeding programs. 'Summerred' from Canada remains popular in northern Europe as an early cultivar.

The hot new cultivars are shown in Table 2.

"The Strain Game"

Europeans have frequently chided Americans for their great emphasis on

Table 1. Relative production and trends of apple cultivars in western Europe—1988.

Cultivar	Approx. %	Trend
Golden Delicious	33	Down
Red Delicious	12	Down
Cox's Orange Pippin	10	Down
Rome Beauty	6	Down
Granny Smith	8	Stable
Jonagold	7	Up
Gloster	5	Stable
Elstar	2	Up
Jonathan	3	Down
Idared	2	Stable
Gala	2	Up
Others	10	Stable

cosmetic appearance and a lesser regard for internal quality. This 'redder is better' syndrome has applied primarily to 'Delicious' with 50-100 reputed strains or mutations. It appears that the same "bug" has now bitten the Europeans. 'Jonagold' was catching on very slowly in its home state of New York, but in Europe it has taken northern districts (Holland, Belgium, Germany and northern France) by storm, especially with the development of higher colored strains derived by mutation or selection from heat-treated clones ('Nicobel,' 'Wilmuts,' etc.). The same story, to a lesser degree, can be said of 'Elstar' and 'Alkmene.' What is *not* known is whether mutations selected for color retain the same internal quality that Europeans appear to demand. Much more study appears justified in this area.

Future Trends

In general, the European outlook appears to be one of increasingly stiff competition among the common market countries, with France, Italy, and Spain becoming more dominant at the expense of more northerly countries. Per capita consumption of apples in Europe is already the highest in the world, up to four or five times that of the United States. A lessening of East-

Table 2. Popular "new" cultivars in western Europe.

Cultivar	Origin	Parentage	Introduced
Alkmene	Germany	Cox O.P. x D. Oldenburg	c. 1982
Arlet	Switzerland	Golden Del. x Idared	1980
Elan	Holland	Golden Del. x J. Grieve	1967
Elstar	Holland	Golden Del. x Ingrid Marie	1955
Fiesta	U.K.	Cox x Idared	c. 1984
Gala	New Zealand	Kidd's Orange x Golden Del.	1980
Gloster	Germany	Glockenapfel x Richared	1969
Jonagold	U.S. (N.Y.)	Golden Del. x Jonathan	1968

West tensions could open new markets in the East, however.

Data on projected planting of various cultivars in western Europe were not available to the authors at this writing. The estimates, which follow in approximate order of interest, are based on discussions with European researchers and nurserymen.

Jonagold Strains: Continued increase in plantings, particularly of higher colored strains e.g. 'Jonagored,' 'De-Coster,' 'King' and 'Jomured.' 'Jonagold' appears best suited to Holland, Belgium, northern France, Germany and Northern Italy.

Elstar: Continued increase in the same areas as 'Jonagold' but perhaps even more restricted to cooler areas. Susceptible to sunburn in warmer areas.

Gala: Planted heavily in southern France, Spain and Italy. Little interest in northern areas. Fruit size is the primary concern, also loss of flavor in storage. Royal and Regal ('Must') strains are most popular.

Fuji: Very new, but being planted in longer season areas of Italy, France and Spain. Several red strains have been imported.

Braeburn: Same interest and areas as 'Fuji.' Could push 'Granny Smith' into a decline.

Alkmene: Excellent quality right off the tree, but short storage life. Some red strains. Will increase in Germany, Scandinavia and perhaps Holland.

Arlet: This Swiss cultivar has been around for a number of years but has not "taken off" as yet. Can have excellent color and quality, but also is susceptible to russet and the skin may become excessively waxy. Interest is greater in northern areas.

Gloster: This 'Delicious' look-alike from Germany has been used extensively as a pollinator for 'Jonagold,' 'Elstar' and other cultivars. It crops heavily, sizes exceptionally well and can develop good quality in storage. It is susceptible to "moldy core." 'Gloster' is not likely to increase further.

Fiesta: Probably the best of the 'Cox' crosses produced at East Malling, U.K. Larger and easier to grow than 'Cox,' 'Fiesta' may have some international impact.

Aroma: Swedish introduction with uniform size and good quality, though early maturity. May have some impact in northern Europe.

Elan: Excellent pollinator and good quality at harvest but poor storage quality and variable color (red blush). Used mostly for direct marketing.

Literature Cited

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Survival of Peach on Own-Rooted vs Loxell Rootstocks

'Redhaven' trees on 'Loxell' rootstock compared to own-rooted 'Redhaven' had both significantly higher survival (53% vs 24% respectively) and lower peach tree short life mortality from cold injury (46% vs 71% respectively). In another study after 6 years own-rooted 'Redglobe' trees had 76% mortality compared to only 36% mortality of 'Redglobe' on 'Halford.' Both studies indicate that own-rooted peach cultivars should first be screened for susceptibility to ring nematodes, bacterial canker and other factors associated with peach tree short life before planting on sites where it is a problem.

From: G. L. Reighard, W. A. Watson, D. C. Coston, and J. D. Ridley. 1990. *Hort. Science* 25(3):359.