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Report Name: Results of the German Fruit Tree Census 2022

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Report Highlights:

This report summarizes the results of the 2022 German deciduous and stone fruit tree census and focuses on developments in the planted varieties of apples and pears. Since the 2017 census, total planted area decreased by 1.45 percent, and 9.2 percent of German fruit farms ended operations. Apples continue to be the most planted fruit trees and account for 67 percent of total fruit tree area, followed by sweet cherries, plums, and pears. The area planted with tree nuts is negligible but growing.

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1. Executive Summary

In 2022, 6,510 farms produced deciduous fruit and tree nuts on 49,202 hectares (ha). Compared to five years ago, the total deciduous fruit and tree nut area decreased by 732 ha translating into a reduction of 1.45 percent. In the same period the number of farmers decreased by 567 or 9.2 percent. As a result, average farm size increased from 6.97 ha to 7.56 ha. Apples are the most widely produced deciduous fruit with 67 percent of the area followed by sweet cherries, plums, pears, and tart cherries, with 12, 8, 4, and 3 percent of the area, respectively. Walnuts, hazelnuts, yellow (mirabelle[1]) plums, apricots, and peaches together account for only 5 percent of the area. However, walnuts, hazelnuts, and apricots were the only species that showed a significant area increase, albeit from a low level.

2. Introduction

Every five years, EU-Member States carry out a statistical survey of deciduous fruit area and production capacity. Details are laid down in EU regulation 2018/1091[2]. Results of the German survey were recently published by the German Federal Office of Statistics (destatis) and are summarized in this report.

The survey covers cultivated area for market production both for fresh consumption and processing. It does not include area for subsistence farming or home gardens. It reports on the following species:

[1] *Prunus domestica subsp. Syriaca*
[2] https://eur-lex.europa.eu/eli/reg/2018/1091/oj

apples, pears, sweet cherries, sour cherries, plums, small yellow plums (aka mirabelle plums), apricots, peaches, quince, walnuts, and for the first time on hazelnuts. However, reporting on varieties within these species is only available for apple and pears. The report surveyed also how much of the area was under organic production.

Abbreviations and Terms

ar = 1/100 ha= 100 square meters = 0. 2471 acres =119. 6 square yards
ha = hectare(s), 1 ha = 10,000 square meters = 2. 471 acres
MT = metric ton(s) = 1000 kg

For clarity variety names and the Latin names of fungal diseases are displayed in *italics* in the text.

3. Development of Deciduous Fruit Farms and Area from 2017 to 2022

Within the past five years, 9.2 percent of deciduous fruit farms have stopped farming, and farmed area decreased by 1.45 percent. When taking into account that hazelnut area was not reported in 2017, and only comparing the species that were reported in both years, the decrease in area amounts to 2.5 percent. This is symptomatic of a trend towards larger farms. In an attempt to remain viable, larger commercial farms are trying to increase their area by buying or leasing additional land partly from smaller fruit farms which stopped producing. The very small farms (<2 ha) are usually run part time, with the owners generating most of their household income outside of agriculture. For them it is challenging to both keep up with the technical developments and to find a successor upon retirement.

Table 1: Deciduous Fruit Farms and Farm Area in Germany 1997-2022

Area from … to …. ha	Farms 1997	2017	2022	% Change 2017-2022	Area 1997 (ha)	2017 (ha)	2022 (ha)	% Change 2017-2022
0. 5 –2	8,114	3,388	3,025	-11%	7,943	3,617	3,222	-11%
2 – 5	2,578	1,580	1,452	-8%	7,992	4,931	4,592	-7%
5 – 10	1,164	873	784	-10%	8,221	6,164	5,586	-9%
> 10	1,149	1,326	1,249	-6%	28,355	35,223	35,802	2%
thereof:								
10 - 20		746	632	-15%		10,649	9,061	-15%
> 20		580	617	6%		24,574	26,741	9%
Total	13,005	7,167	6,510	-9.2%	52,511	49,935	49,202	-1.45%

Source: German Federal Office of Statistics, Wiesbaden

4. Situation in 2022

4. 1 Organic Production

Twenty percent of German fruit tree area is farmed organically, compared to 15 percent five years ago. However, the share varies substantially by species. It is highest in quince and walnuts and lowest in sweet cherries. Please note that the numbers for apples include commercial acreage for processing. When looking only at area for table apples, the share is only 16.1 percent.

Table 2: Total and Organic Fruit Bearing Tree Area in ha and percent

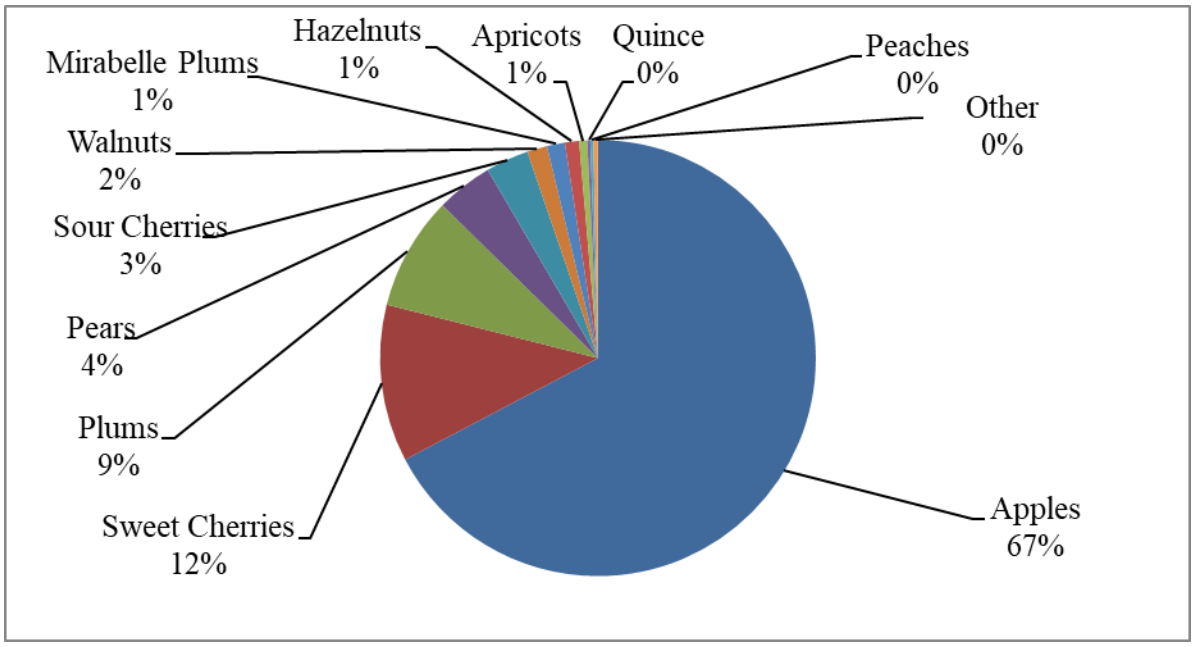
	2017			**2022**			% Change 2022:2017	
	Total Area (ha)	Thereof Organic (ha)	% Organic Area	**Total Area (ha)**	Thereof Organic (ha)	% Organic Area	Total Area (ha)	Organic Area (ha)
Apples	33,981	6,092	17.9%	**33,106**	7,951	24.0%	-3%	31%
Pears	2,137	318	14.9%	**2,069**	459	22.2%	-3%	44%
Sweet Cherries	6,066	296	4.9%	**5,736**	314	5.5%	-5%	6%
Sour Cherries	1,948	174	8.9%	**1,567**	162	10.3%	-20%	-7%
Plums	4,199	294	7.0%	**4,139**	314	7.6%	-1%	7%
Mirabelle Plums	639	39	6.1%	**654**	38	5.8%	2%	-3%
Apricots	228	11	4.8%	**289**	19	6.6%	27%	73%
Peaches	112	8	7.1%	**112**	11	9.8%	-	38%
Quince	91	44	48.4%	**113**	69	61.1%	24%	57%
Walnuts	291	130	44.7%	**734**	372	50.7%	152%	186%
Hazelnuts				**521**	301	57.8%	n/a	n/a
Other	242	108	44.6%	**162**	92	56.4%	-33%	-15%
Total	49,935	7,514	15.0%	**49,202**	10,102	20.5%	-1.45%	34%

Source: FAS/Berlin based on data from German Federal Office of Statistics, Wiesbaden

4. 2 Species of Trees

In terms of area, apples are by far the most important deciduous fruit species in Germany, and account for about two-thirds (33,106 ha) of total German deciduous fruit area. Following in area are sweet cherries (5,736 ha), plums (4,139 ha), pears (2,069 ha), sour/tart cherries (1,567 ha), and walnuts (734 ha).

Chart 1: Percentage of Total Fruit-bearing Tree Area by Species in Germany



Source: FAS/Berlin based on data from German Federal Office of Statistics, Wiesbaden

4. 2. 1 Apples

From 2017 to 2022, the reported figures (table 2) show a 2.6 percent decrease in total apple area and significant changes in variety shares.

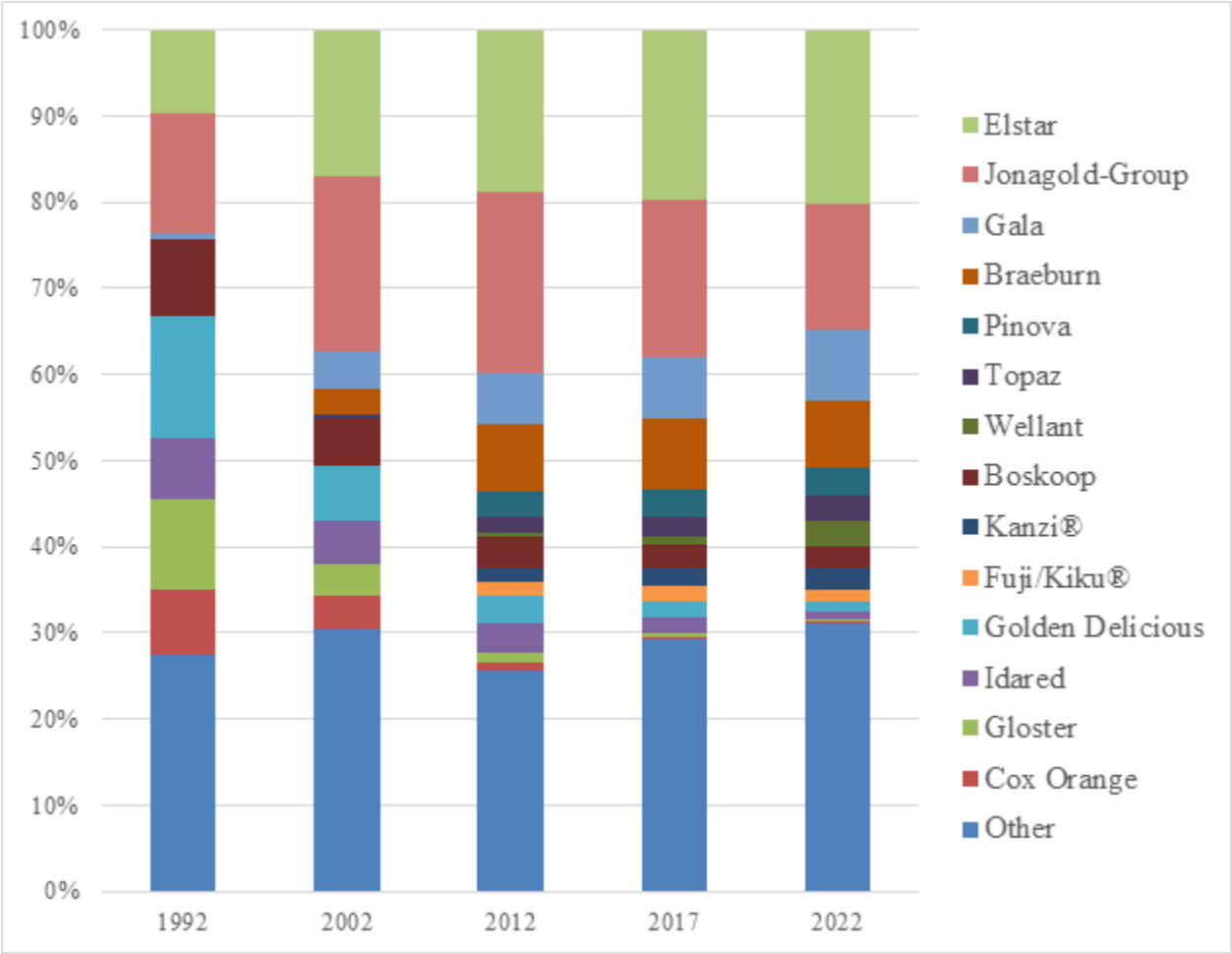
The 2022 survey reports on 78 different apple varieties that are currently grown in Germany. Most of these varieties have a limited or regional importance. Only 25 varieties are grown on more than 100 ha each, less than ten cover more than 1000 ha. More than half of the area (53 percent) is covered by one of the top five varieties. The top 10 varieties take up 66 percent of the area. They are shown in table 3. The share of each variety as a percentage of the total apple area is illustrated in chart 2.

Table 3: Major Apples Varieties by ha and Year

						change in percent	
	1992	2002	2012	**2017**	**2022**	2017 to 2022	1992 to 2022
Elstar	3,416	5,271	5,948	**6,698**	**6,611**	-1%	94%
Jonagold-Group	4,994	6,339	6,705	**6,214**	**4,804**	-23%	-4%
thereof:							
Jonagold	4,251	4,529	3,036	2,285	1,596	-30%	-62%
Jonagored	743	1,810	2,476	1,937	1,154	-40%	55%
Jonaprince	.	.	1,193	1,992	2,054	3%	.
Gala	295	1,346	1,908	**2,382**	**2,642**	11%	796%
Braeburn	-	952	2415	**2,824**	**2,545**	-10%	.
Pinova	.	.	964	**1,057**	**1,061**	0%	.
Topaz	.	158	617	**816**	**965**	18%	.
Wellant®			107	**317**	**964**	204%	.
Boskoop	3,143	1,710	1,168	**927**	**864**	-7%	-73%
Kanzi®	.	.	483	**670**	**798**	19%	.
Fuji/Kiku®	.	.	568	**636**	**476**	-25%	.
Fräulein	.	.	.	**.**	**395**	.	.
Golden Delicious	5,076	1,964	982	**655**	**382**	-42%	-92%
[…]							
Idared	2,487	1,575	1,073	**626**	**295**	-53%	-88%
Gloster	3,791	1,103	349	**123**	**54**	-56%	-98%
Cox Orange	2,720	1,234	312	**105**	**45**	-57%	-99%
Other	9,775	9,481	8,139	**9,931**	**10,205**		
Total	35,697	31,219	31,738	**33,981**	**33,106**	-2.6%	-7%

Note: year on year comparison is somewhat flawed as data collection has changed: 2012 and 2022 include data from farms larger than 0. 5 ha, 2002 larger than 0. 3 ha, 1992 larger than 0. 15 ha.
Source: FAS/Berlin based on data from German Federal Office of Statistics, Wiesbaden

Chart 2: The Share of the Major Table Apple Varieties in Germany as a Percentage of Total Apple Area from 1992 to 2022



Source: FAS/Berlin based on data from German Federal Office of Statistics, Wiesbaden

4. 2. 1. 1 Factors influencing the variety mix

The variety mix of apples grown in Germany is largely determined by climatic factors and consumer and retail preferences. Retail chains favor bi-color apple varieties, a fruit diameter of 75 – 80 mm, and a long shelf life.

Compared to some other big apple regions, e. g. France or the southern hemisphere, Germany has a cooler climate and a shorter growing season. It is therefore less suitable for some of the popular new varieties, such as "*Pink Lady*."

Most German consumers favor "sweet and sour" tasting apples as opposed to "just sweet" apples. *Elstar*, *Jonagold*, and many of the traditional varieties serve this taste. However, some of the old traditional varieties are difficult to handle, such as *Berlepsch* which is very susceptible to bruising.

Others do not fit the retail requirements in size or appearance. Most of these varieties are not well received by the retail sector and are therefore grown less and less for the "big market." However, they do continue to have some importance with farmers, who grow these varieties for direct sale to the consumer either on their farm-site or at farmers' markets.

Varieties that are resistant or tolerant against fungal diseases. such as mildew (caused by *podosphaera leucotricha*) and scab (caused by *venturia inaequalis*), are increasing. This is because they are better suited for growing under organic production. Examples of such varieties include *Topaz, Santana,* and *Natyra®*.

4. 2. 1. 2 Changes in the variety mix

Over the past 30 years there has been quite some change in the ranking of apple varieties grown in Germany.

Elstar is the leading apple grown in Germany. However, its area peaked in 2017 and has decreased by 1.3 percent since. That said, it is still the most planted variety in young orchards (see table 3). In consumer apple tastings, *Elstar* usually receives better results than *Jonagold*, in part because of its firmer texture. Additionally, it does not have the *Jonagold* problem of oversized fruit.

Jonagold-group lost 23 percent in acreage compared to 2017 and even fell below the level of 1992. However, within the *Jonagold* group there is a clear trend towards the red strain *Jonaprince* at the expense of the "standard *Jonagold*" and *Jonagored* varieties. This is largely because the standard *Jonagold* tends to develop difficulties in fruit coloring as the trees age.

Other expanding varieties are *Gala, Pinova, Topaz, Wellant®,* and *Nicoter/Kanzi®*. For a long time, *Gala* and *Braeburn* were not considered suitable for the German climate and were restricted to the most southern regions of Germany. However, these varieties are now also increasingly grown in the more northern parts of Germany. *Pinova* was bred in Saxony in 1986 and is very popular in East Germany. Lately, producer organizations in the West, especially along the river Rhine, are pushing this variety, which is known for its outstanding shelf-life. *Topaz* is prized for its tolerance against the scab fungus (*venturia inaequalis*). *Fuji/Kiku®* is mostly grown in the Lake Constance area in the south of Germany. *Fräulein* is a new variety that was developed in Germany and put on the market only in 2020. *Natyra®/ Magic Star®* is resistant against scab fungus (*venturia inaequalis*). The trade name *Natyra®* may only be used when produced in organic farming. In conventional farming it is marketed as *Magic Star®*.

The growing share of trademark protected "Club"- varieties is a sign of the competitive market environment. Club varieties are managed and grown under a licensing agreement with plant breeders or variety consortia. The licensing agreements usually restrict planted area and includes variety specific quality and marketing rules. Apples that do not meet these standards can be marketed under the variety

name (e.g., *Cripps Pink*) but not under the trade name (*Pink Lady* ®). This is aimed at preventing consumers from turning away from buying a variety or apples altogether because they are disappointed in their expectations.

In contrast, *Golden Delicious*, which ranked first in 1992 and third in 2002, lost 92 percent of its area compared to 1992 and by 2022 had dropped to number eleven. Other high-ranking varieties from 1992 have also lost ground. The varieties *Gloster*, *Cox Orange*, *Idared*, and *Boskoop*, have declined from 1992 to 2022 by 99, 98, 88, and 73 percent, respectively. Among these only *Boskoop* reached the top 10 of plantings in 2022. *Boskoop* has a good reputation among consumers for baking and cooking. "Cox Orange" was bred in the United Kingdom in 1825 and is a variety with a long tradition in Germany. In recent years low crops and its variety-inherent small fruit size have decreased the popularity of *Cox Orange* with growers. *Gloster* was bred in Germany in 1951 and had its peak in the 1970s and 1980s. It is a high yielding red variety, with a rather neutral taste.

Table 4: Variety mix in young apple orchards (< 5 years) in 2022

Variety	Area (ha)
Elstar	937
Wellant ®	563
Gala	452
Fräulein	395
Natyra ® /Magic Star ®	208
Kanzi ®	186
Jonagold-Group total	178
Thereof:	
Jonaprince	86
Jonagold	75
Jonagored	17
Pinova	169
Topaz	164
Braeburn	152
SweeTango®	119
Santana	105
Diwa	41
Fuji/Kiku ®	37
Golden Delicious	31
Other varieties	374
Total	4,467

Source: FAS/Berlin based on data from German Federal Office of Statistics, Wiesbaden

4. 2. 2 Pears

From 2012 to 2017, pear area increased by 7 percent. This is a reversal of the declining trend of the previous 25 years.

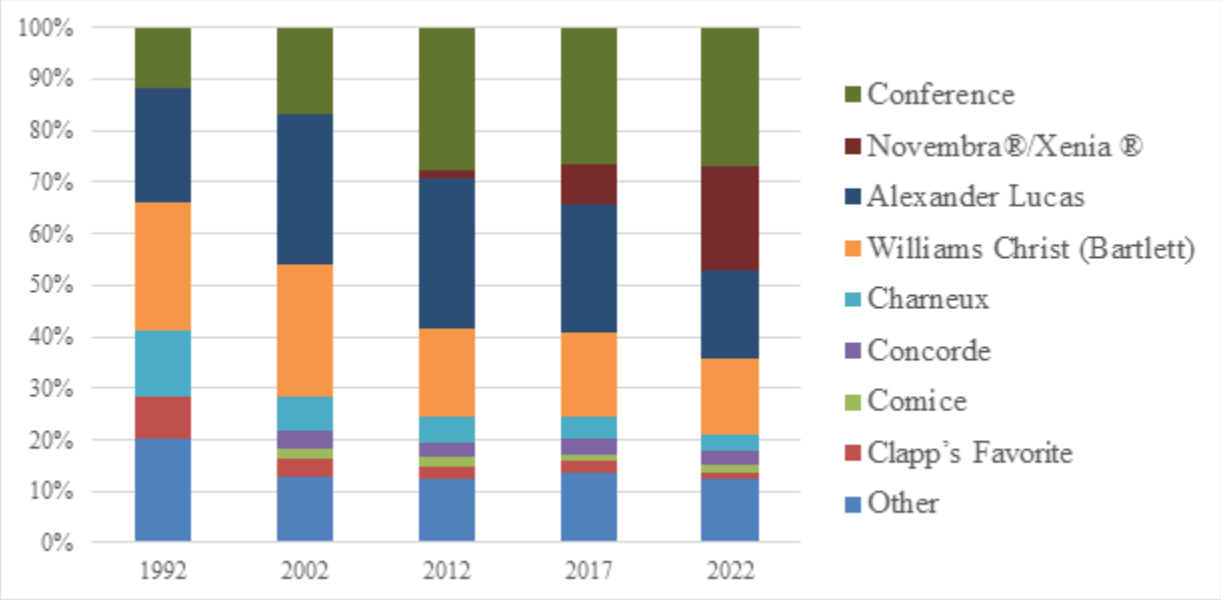
The number of pear varieties is much smaller than those for apples. The survey reports on 25 varieties, with the top four varieties accounting for 75 percent of the pear area. The sector is also less dynamic concerning variety changes. From the 1800s through 2007 *Alexander Lucas* and *Bartlett* were the two leading varieties. However, in recent years, *Conference* has gained popularity among growers and by 2017 managed to become the most grown variety in Germany (see table 4). *Xenia®/Novembra®* displayed the most dynamic development of all varieties in recent years. The variety displays a reduced susceptibility to pear scab (*venturia pirina*) and canker (*nectria galligena*), which is especially important for organic production (table 5).

Table 5: Major Pear Varieties in ha

						Change in Percent	
	1992 (ha)	2002 (ha)	2012 (ha)	**2017 (ha)**	**2022 (ha)**	2017-2022	1992-2022
Conference	236	268	376	**386**	**384**	-1%	63%
Xenia®/Novembra®	.	.	22	**115**	**289**	151%	.
Alexander Lucas	441	467	398	**362**	**243**	-33%	-45%
Williams Christ (Bartlett)	491	410	230	**239**	**214**	-10%	-56%
Charneux	257	104	73	**61**	**44**	-28%	-83%
Concorde	.	52	36	**43**	**38**	-12%	.
Comice	.	33	24	**22**	**21**	-5%	.
Clapp's Favorite	167	59	34	**31**	**17**	-45%	-90%
Other	400	201	168	**198**	**178**	-10%	-56%
Total	1,992	1,594	1,361	**1,457**	**1,428**	**-2%**	**-28%**

Note: year on year comparison is somewhat flawed as data collection has changed: 2012 - 2022 include data from farms larger than 0. 5 ha, 2002 larger than 0. 3 ha, 1992 larger than 0. 15 ha.
Source: FAS/Berlin based on data from German Federal Office of Statistics, Wiesbaden

Chart 3: The Share of the Major Table Pear Varieties in Germany as a Percentage of Total Pear Area from 1992 to 2022



Source: FAS/Berlin based on data from German Federal Office of Statistics, Wiesbaden

Table 6: Variety Mix in Young Pear Orchards in 2022 in ha

	Pear Orchards <5 Years (ha)
Novembra®/Xenia®	136
Conference	56
Williams Christ (Bartlett)	21
Cepuna	15
Alexander Lucas	7
Concorde	3
Other varieties	37
total	275

Source: FAS/Berlin based on data from German Federal Office of Statistics, Wiesbaden

4. 2. 3 Stone Fruits

Table 7: Stone Fruit Area by ha and Year

	2002	**2012**	**2017**	**2022**	Change in Percent	
					2012-2017	2002-2017
Sweet Cherries	5,366	5,258	6,066	5,736	-5%	7%
Sour/Tart Cherries	4,197	2,291	1,948	1,567	-20%	-63%
Subtotal Cherries	9,563	7,549	8,014	7,303	-9%	-24%
Plums	4,519	3,870	4,199	4,139	-1%	-8%
Mirabelle Plums	474	502	639	654	2%	38%
Subtotal Plums	4,993	4,372	4,838	4,793	-1%	-46%
Subtotal Cherries and Plums	14,556	11,921	12,852	12,096	-6%	-17%
Apricots	53		228	289	27%	445%
Peaches	101		112	112	0%	11%
Total Stone Fruits	14,710	11,921	13,192	12,497	-5%	-15%

Source: FAS/Berlin based on data from German Federal Office of Statistics, Wiesbaden

Cherry and plum area decreased compared to 2017 by 9 and 6 percent, respectively. However, the decrease in tart cherries was much more pronounced than for sweet cherries. This is a result of strong competition from other EU member states. According to German industry sources, other EU member states such as Hungary and Poland have lower production costs and are more competitive in tart cherry production than German producers. Germany is more competitive for sweet cherries since most of the production is for fresh consumption and consumers are willing to pay a premium for locally produced cherries.

Apricot area increased by 27 percent while peach area remained flat. Both species can only be grown in limited locations in South-West Germany due to their sensitivity to late frosts. In these suitable areas they compete with wine grape production.

4. 2. 4 Tree Nuts

Table 8: Tree Nuts Area by ha and Year

	2002	**2012**	**2017**	**2022**	Change in Percent	
					2017-2022	2002-2022
Walnuts	77	n/a	291	734	152%	853%
Hazelnuts	n/a	n/a	n/a	521	n/a	n/a
Total Tree Nuts	77	n/a	291	1,255	-5%	n/a

Source: FAS/Berlin based on data from German Federal Office of Statistics, Wiesbaden
Note: Due to diminishing importance of tree nut production data collection on walnuts was suspended between 2002 and 2017. Data on hazelnut area was first collected in 2022.

Tree nuts are a niche product in German agriculture. For climatic reasons commercial tree nut production is limited to southern Germany (Baden-Wuerttemberg and Bavaria). That said, there has been renewed interest in recent years partly due to higher consumer demand and higher product prices. Additionally, former tobacco farmers (also a niche product) were looking for alternatives when EU subsidies for tobacco production expired in 2010. The State of Bavaria ran a research project from 2006 – 2016 to provide the nascent sector with information on suitable varieties, production, crop protection, and harvesting techniques.

5. Related Reports:

Overview on the German Cherry Sector 2022 | GM2022-0028Berlin | Germany **Published On: September 08, 2022** Germany is the third-largest importer of cherries in the world after China/Hong Kong and Russia. From 2010 to 2021, between 52 and 77 percent of the cherries consumed in Germany were imported, with the majority of imports originating in other EU member states. The largest non-EU cherry suppliers are Turkey for sweet cherries and Serbia for sour cherries. German cherry production for MY 2022/23 is estimated at 54,700 MT. This is a 43-percent increase compared to the preceding year and 19 percent above the ten-year (2012-2021) average. The increase is largely a rebound from the unusually low production of 2021. Opportunities for U.S. sweet cherries are best in August/September, after the German domestic growing season. Overview on the German Cherry Sector 2022_Berlin_Germany_GM2022-0028
Product Brief Fresh Fruit | GM2022-0024Berlin | Germany **Published On: August 24, 2022** Germany is one of the largest markets for fruit in Europe. The relative affluence of its population of 83 million people makes it an attractive outlet for exporters from many countries. This product brief highlights certain aspects of the German fresh fruit market and provides marketing, trade, and regulatory information for U.S. exporters. Product Brief Fresh Fruit_Berlin_Germany_GM2022-0024

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https://gain.fas.usda.gov/#/search

6. Key Contacts And Further Information

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