Phenolic Profiles of European Plum (*Prunus domestica* L.) during ripening

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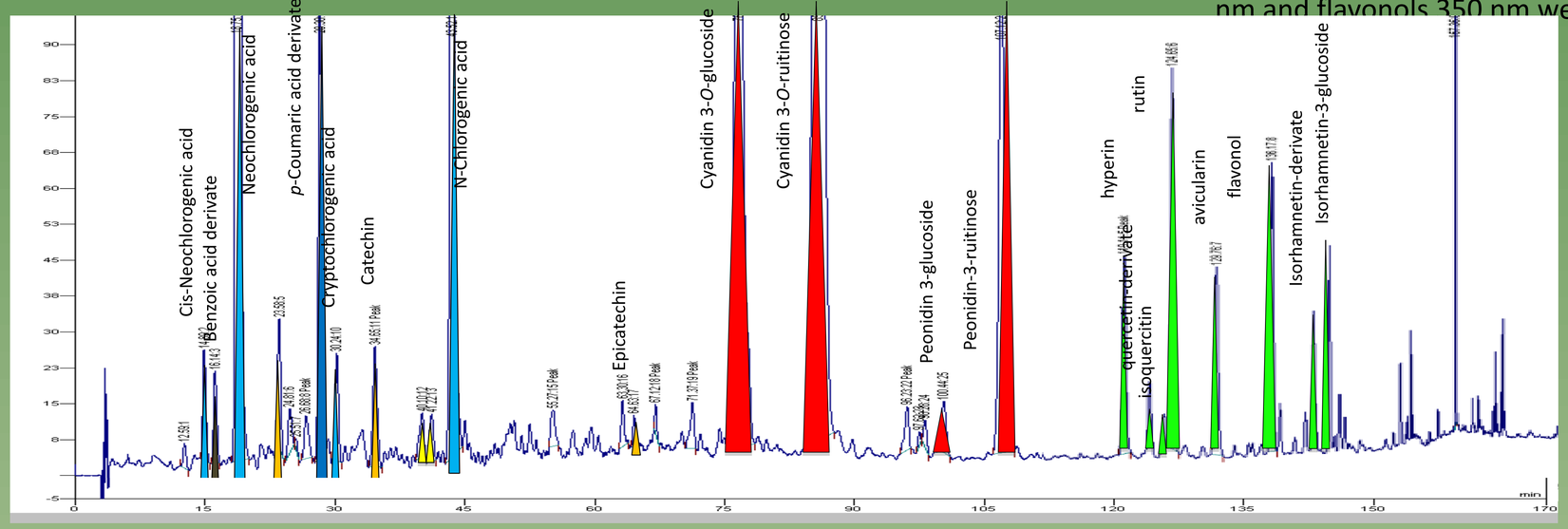
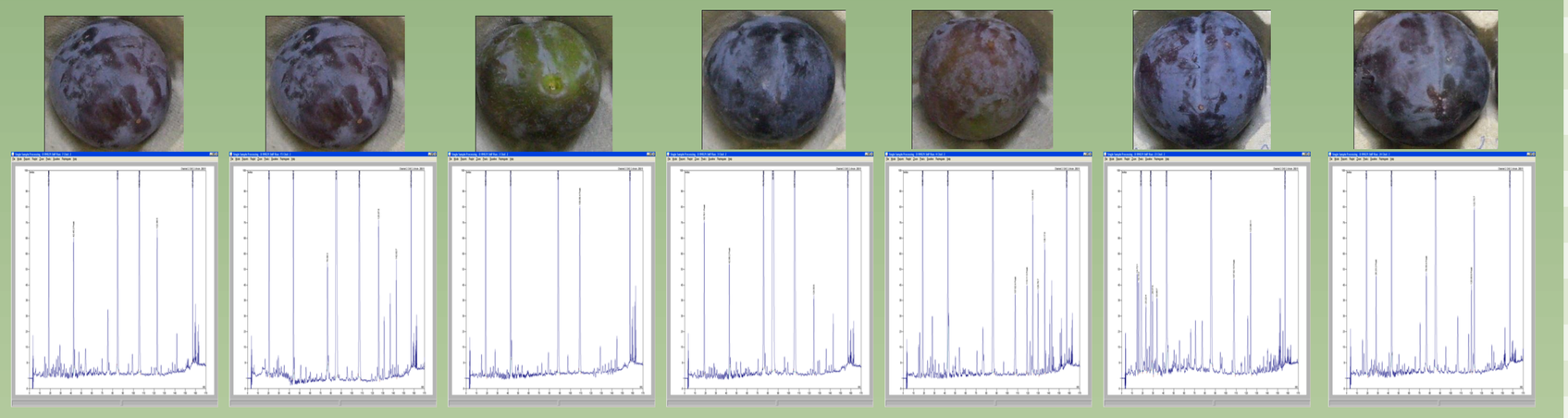
Introduction:
Content of potassium, vitamin A, traces of vitamin B1 and B6, niacin, pantothenic acid and sorbitol as well as many polyphenolics and carotinoids as oxygen radical scavengers play an important role of European plums in properties to human health. For advancing consumption of plum fruits quality and taste have to be optimal preceding the use of flavorsome cultivars and optimize the harvest time.
In this study dynamic of polyphenols during fruit ripening and different quality parameters as well as their interctions to predict optimal harvest time in seven cultivars of *Prunus domestica* L. were investigated.

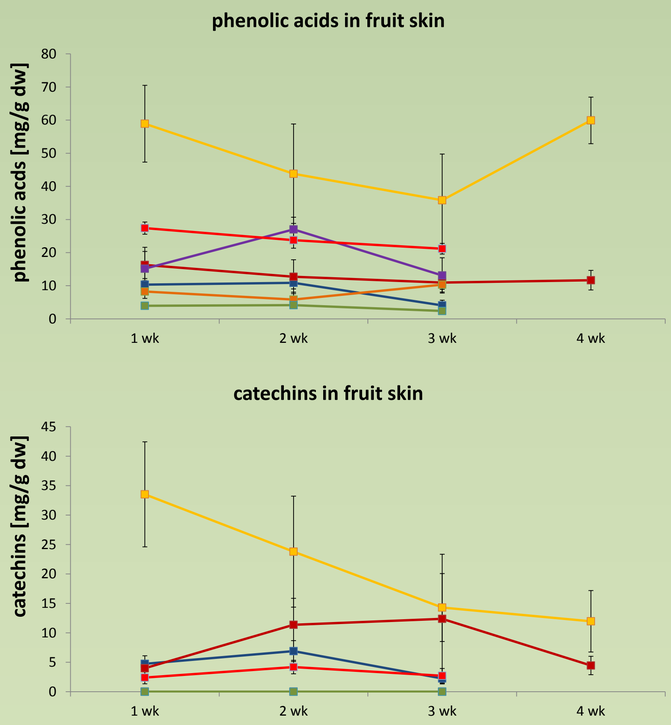
Material and methods:
Fruits of 7 late ripening plum cultivares (Presenta, Harbella, Haustwetsche Clon Wolff, Haganta, Topend Plus, Haroma, Hohenheim 4517) were sampled at 8 harvesting times. Quality parameters like fruit weight, sugar content [brix], concentrations of polyphenolics measured by HPLC (high presure liquid chromatography) as well as anthocyan,- and flavonol-parameter in fruit skin determined by non invasive multiplex method. Identification of polyphenols were affected by UV-vis from DAD-analysis, thin layer chromatography, enzymatic and acid hydrolysis as well as co-chromatography by using column EC 250 mm x 4 mm (ID) Nucleosil 120-3 C18, A: 0,5% formic acid and B: methanol. For quantification software Geminix was used. For quantification hydroxycinnamic acids UV-vis 315 nm, catechins 280nm, anthocyanidins 515 nm and flavonols 350 nm were

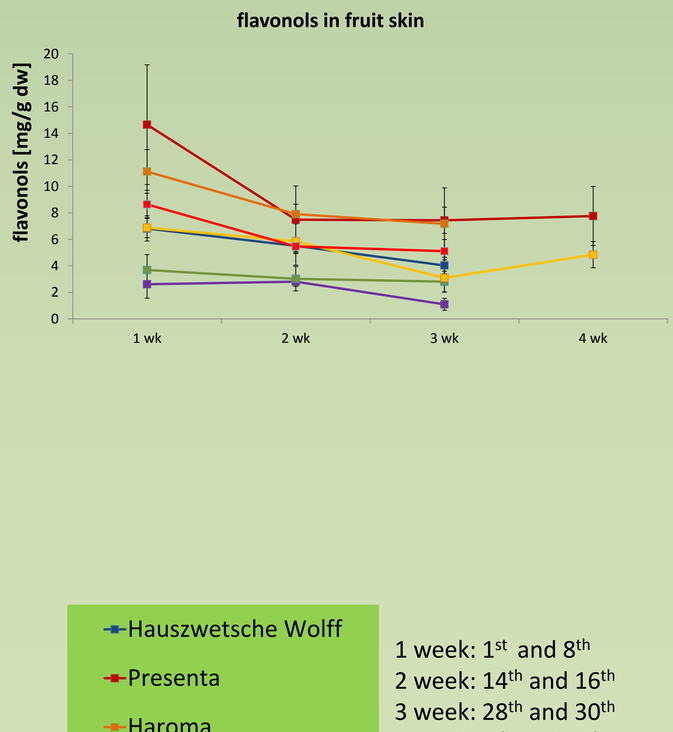


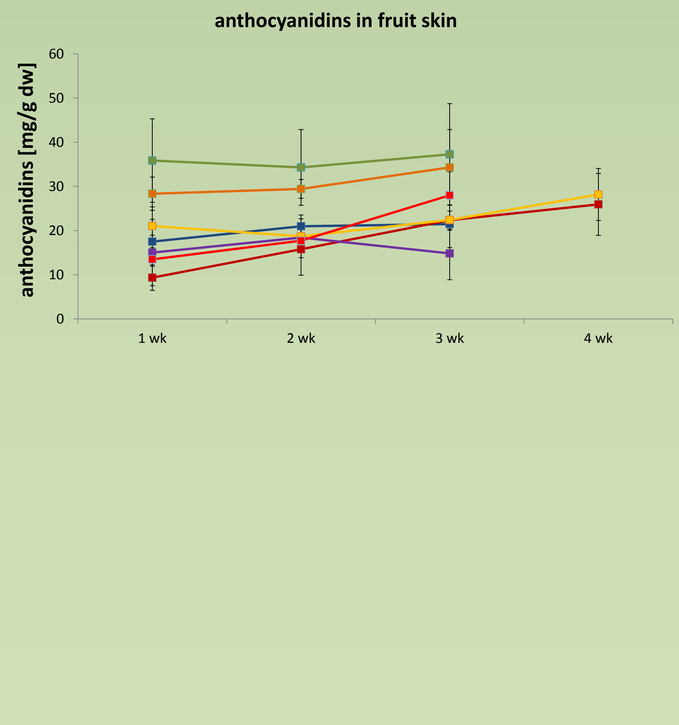


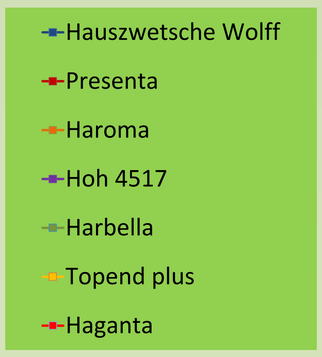
Hauszwetsche clon Wolff | Haroma | Hohenheim 4517 | Harbella | Presenta | Topend Plus | Haganta

Rt (min)	Phenolic compounds	UV-vis spectra (nm)
	Hydroxycinnamic acids	
14.89	neochlorogenic acid (cis)	316
18.75	neochlorogenic acid (trans)	324
28.30	p-coumaric acid derivate	311
30.24	Cryptochlorogenic acid (trans)	327
43.52	N-chlorogenic acid (trans)	325
	Simple phenolics	
16.14	Benzoic acid derivate	276
	Flavan-3-ols	
26.68	procyanidin 1	281
34.65	Catechin	278
40.11	procyanidin 2	280
64.63	epicatechin	278
	Anthocyanidins	
76.74	Cyanidin 3-glucoside	280/513
85.95	Cyanidin 3-rutinoside	280/514
100.44	Peonidin 3-glucoside	279/516
107.12	Peonidin 3-rutinoside	280/515
	Flavonols	
119.11	hyperin	259/355
121.93	quercetin derivate 1	260/355
122.01	Isoquercitrin	260/355
124.65	Rutin	258/355
129.76	Avicularin	259/355
136.17	Quercetin derivate 2	259/355
140.98	Isorhamnetin derivate 1	260/354
143.02	Isorhamnetin 3-glucoside	259/356









1 week: 1st and 8th
2 week: 14th and 16th
3 week: 28th and 30th
4 week: 8th and 13th

Genotype	Harvest time	Skin color	Brix	Weight (g)	Rating
Haganta	15.09	Blue	21	68	Very good
Harbella	20.09	Dark blue	23	32	Good
Haroma	22.09	Dark blue	17	37	Good
Hauszwetsche, Wolf	22.09	Reddish blue	20	25	Medium
Hoh 4517	24.09	Blue	22	25	Good
Topend plus	28.09	Dark blue	19	58	Medium
Presenta	28.09	Reddish blue	18	35	Good

Polyphenol-Gehalte als Parameter zur Erfassung von Reifeprozessen in Früchten von Zwetschen *Prunus domestica*

Um den optimalen Reifezeitpunkt zu ermitteln, wurden neben schon bekannten Reifeparameter wie Brix-werte, Zucker- und Säuregehalte auch Phenylpropanoide in der Fruchtschale bei verschiedenen Zwetschensorten über einen Zeitraum von 6 Wochen ermittelt. Dazu wurde eine nicht-invasive Monitoring Methode mit einer Quantifizierung mittels HPLC verglichen. Der Quantifizierung wurde eine detaillierte Identifizierung der in den verschiedenen Sorten vorkommenden Flavonoide vorgeschalten, die verschiedene Vertreter der Stoffgruppen der Hydroxyzimtsäuren, Flavonole, Anthocyanen und Catechinen aufweist. Anhand der Anthocyan- und Flavonol-Konzentrationen in der Fruchtschale lassen sich Prognose bezüglich des optimalen Reifezeitpunktes machen, was bezüglich der Qualitätsmerkmale einer der Wichtigsten Parameter ist.