Work Package Specific Objectives - Tasks				Methodology								Main Results/ Deliverables											
WP 3: I Fruit Organolepsis and nutr quality Pre and Post-harvest treatme the maintenance of fruit qualit Validating fresh berry valu consumer health	Frui ritio nts y Je	t qua nal for for	<ul> <li>Ality a</li> <li>As an an</li> <li>Pr tree</li> <li>Dig bio</li> </ul>	and say d r alys e-ha atm ges bava	nuti nutra ses a arve ient tion ailab	ritiona n fru aceuti and c st s ass jility a	al qu it e ical ons an ays .nd l	unter qu ume id or	/ cha mal, ality er tes P P ctivi	aracte nutr , ser sts ost-h olyph ty stu	eriza itior nsor arve eno dies	ation nal ial est est	• Ide fre: • Evi of f	determ ntificat sh fruit dence resh fr	ion o qualit for th uit in v	on f str y via ie hi valid	rateg a no uma late	gies t vel aj in hea d mod	o ma oproa alth I del sy	axim ache bene yster	ise s fits ns.		
ajor WP3 Tasks			Yea	ar 1					Ye	ar 2					Year	3			Year				
lonths	1	2	6	8	1 0	12	1 4	1 6	18	20	2 2	2 4	26	28	30	3 2	3 4	36	38	40	4		
.3.1 Fruit organolepsis and utritional quality			3							3.4				3.1					3. 3				
.3.2 Pre and post-harvest reatments																		3.5					
.3.3 Validate fresh berry alue for consumer health										3.6		3 • 7	3.8	3.9				3.1 1		3. 10			
																					L		
M3.2 Developmen approaches	nt of with	SOF n res	Ps fo pect	r all to f	ana ruit (	alytica qualit	al y ar	d			WP	3		(	6			D3	1-3	.2			



seventh Frankwork PROGRAMME EUBerry ***	**			T H I	he James Jutton Institute
Analysis of polypher	olics in raspbe	rry, blackberi	ry, blueberry, bla	ck currant and strawberry:	
by high pressure liqu column, nominal ma	iid chromatogi iss.	aphy-photod	iode array-mass	spectrometry (HPLC-PDA-MS) - 150 mm x 2.0 mm; 4 mm	
by ultra high pressur Im column, nominal	e liquid chrom mass.	atography-ph	notodiode array-r	nass spectrometry (UPLC-PDA-MS) - 50 mm x 2.1 mm; 1.9	
by high pressure liqu mm x 2.0 mm; 4 mm Molecular weight ar flavonols, ellagic a	id chromatogn column, accu nd MS <sup>2</sup> infor acid derivat	aphy-photod rate mass mation of a ives, ellag	iode array-high r anthocyanins, itannins and	Ion chromatograms	
proantnocyaniums				10.45 11.48 12.45 12.95 13.90 1563 17.34 19.41 21.16 21.63 23.18 24.46	0485K_1
Compound	Formula	MS	MS <sup>2</sup>	100 501 502 502 503 502 503 503 503 503 503 503 503 503 503 503	p ESI Full NS 0485K_1
Anthocyanins		[M+H]⁺		100 102 1137 130 1480 / 1/16 18/1 1982 2183 22.58 14: 1.558 100 100 100 100 100 100 100 100 100 100	F: FTMS +
Cyanidin 3-sophoroside	C <sub>27</sub> H <sub>30</sub> O <sub>16</sub>	611.161	287	90 1879 11.26 12.67 13.84 14.98 15/79 17.59 18.76 18.55 21.01 21.98 24.13 MIS 0466K-1 16.79 17.59 18.76 18.55 21.01 21.98 24.13 MIS 0466K-1 16.71 17.59 18.76 18.55 21.01 21.98 24.13 MIS 0466K-1 16.71 17.59 18.71 18.41 14.98 16.75 18.75	2000.00]
Cyanidin 3,5-diglucoside	C <sub>27</sub> H <sub>30</sub> O <sub>16</sub>	611.161	449, 287	100 m/cm 157 200-757 229 60	F: FTMS + 2000.00]
Cyanidin 3-(2'- glucosyl)rutinoside	C <sub>33</sub> H <sub>40</sub> O <sub>20</sub>	757.219	287		F: FTMS + 2000.00]
Cyanidin 3-sophoroside-5- rhamnoside	C <sub>33</sub> H <sub>40</sub> O <sub>20</sub>	757.219	611, 433, 287	S 0.1 w/2 1100 120 120 120 120 120 120 120 120 1	



























Sub-task 3.3.1 Impact of digestion of fruit polyphenols Sub-task 3.3.2 Bioavailability and metabolism studies



M3.6 Determination of fruit compositional changes accompanying *in vitro* digestion and subsequent components bioavailability and metabolic changes in validated human model systems (P4). Month 20

- IVD treatment to be performed on 3 selected cultivars/lines of raspberry and strawberry, and 1 of blueberry and blackberry, and extracts to be sent to partners (ITQB and UPM) for bioactivity assessment.
- Compositions to be assessed before and after IVD.
- Bioavailability and metabolic changes to be assessed in extracts that have been put through gut cells by P9 (WUR).

## Sub-task 3.3.3 Plant polyphenol bioactivities

M3.8 Determine the efficacy of selected fresh fruit extracts and components in CVD, cancer and neurodegeneration model systems (P1, P3, P4). Month 26.

