

Characterising Institute code ITADiSTA  
 Country of characterisation Italy  
 Farm or Institute address  
 Latitude  
 Longitude  
 Elevation  
 Evaluators name Prof. Filippo d'Antuono  
 Evaluation environment Field

Institute code	Accession number	Sowing date	Anthocyanin in petiole	Petiole hairiness	Leaf hairiness	Leaf dissection
FRAINH	1-INH	2001	1.0	1.3	1.4	6.4
FRAINH	2-INH	2001	1.0	1.3	1.4	6.3
FRAINH	3-INH	2001	1.0	1.3	1.4	6.9
FRAINH	4-INH	2001	1.1	1.2	1.2	6.4
FRAINH	5-INH	2001	1.1	1.3	1.6	6.6
FRAINH	6-INH	2001	3.7	1.5	1.9	5.7
FRAINH	7-INH	2001	1.0	1.3	1.5	6.6
FRAINH	8-INH	2001	1.0	1.3	1.4	6.4
FRAINH	9-INH	2001	1.0	1.3	1.2	6.7
FRAINH	10-INH	2001	1.0	1.1	1.1	6.9
Standard	Parmex	2001	1.0	1.1	1.4	6.1
Standard	Rubrovitamina	2001	1.0	1.5	1.5	6.3
DEU001	BAZ-59153	2001	1.0	1.4	1.6	6.9
DEU001	BAZ-69565	2001	1.0	1.1	1.2	6.6
DEU001	BAZ-69563	2001	1.0	1.3	1.5	6.3
DEU001	BAZ-56374	2001	1.0	1.3	1.3	5.8
DEU001	BAZ-56367	2001	1.0	1.6	1.7	6.4
DEU001	BAZ-56368	2001	1.0	1.6	1.8	6.4
DEU001	BAZ-56376	2001	1.0	1.3	1.6	6.6
DEU001	BAZ-56375	2001	1.0	1.5	1.5	6.4
DEU001	BAZ-55504	2001	1.0	1.3	1.3	6.5
DEU001	BAZ-46588	2001	1.0	1.8	1.9	6.4
DEU001	BAZ-65695	2001	1.0	1.4	1.6	6.6
DEU001	BAZ-62634	2001	1.0	1.1	1.2	6.7
DEU001	BAZ-55505	2001	1.0	1.1	1.3	6.2
DEU001	BAZ-46591	2001	1.0	1.4	1.6	6.8
DEU001	BAZ-59152	2001	1.0	1.3	1.6	6.3
DEU001	BAZ-62633	2001	1.0	1.5	1.6	6.2
DEU001	BAZ-46587	2001	1.0	1.3	1.8	6.5
DEU001	BAZ-46584	2001	1.0	1.2	1.1	6.9
DEU001	BAZ-69566	2001	1.0	1.2	1.8	6.3
DEU001	BAZ-52136	2001	1.0	2.2	1.8	5.4
Standard	Amsterdam	2001	1.0	1.0	1.2	6.5
Standard	Bolero	2001	1.0	1.2	1.2	6.8
GBRHRIGRU	HRI-3931	2001	1.0	2.3	1.9	5.2
GBRHRIGRU	HRI-3933	2001	1.0	1.3	1.7	6.1
GBRHRIGRU	HRI-3937	2001	1.0	1.4	1.5	6.8
GBRHRIGRU	HRI-4003	2001	1.0	1.5	1.4	6.2
GBRHRIGRU	HRI-4007	2001	1.0	1.5	1.9	6.6
GBRHRIGRU	HRI-4011	2001	1.0	2.8	4.6	4.5
GBRHRIGRU	HRI-4012	2001	1.1	3.3	4.0	4.5
GBRHRIGRU	HRI-4013	2001	1.0	1.9	2.0	6.2

GBRHRIGRU	HRI-5779	2001	1.0	1.3	1.4	6.3
GBRHRIGRU	HRI-6183	2001	1.0	1.3	1.2	6.8
GBRHRIGRU	HRI-6184	2001	1.0	1.3	1.5	5.7
GBRHRIGRU	HRI-6486	2001	1.0	1.2	1.1	7.0
GBRHRIGRU	HRI-6497	2001	1.0	1.8	2.0	6.3
GBRHRIGRU	HRI-6519	2001	1.0	1.0	1.2	7.2
GBRHRIGRU	HRI-6682	2001	1.0	2.1	2.1	5.7
GBRHRIGRU	HRI-6686	2001	2.2	1.2	1.5	6.5
GBRHRIGRU	HRI-6688	2001	1.0	1.2	1.4	6.3
GBRHRIGRU	HRI-6689	2001	1.3	1.8	1.5	5.1
GBRHRIGRU	HRI-6756	2001	1.0	1.6	1.1	5.9
GBRHRIGRU	HRI-6764	2001	1.0	1.3	1.4	6.7
GBRHRIGRU	HRI-7170	2001	1.0	5.4	7.0	3.1
GBRHRIGRU	HRI-7172	2001	1.0	1.2	1.5	6.2
GBRHRIGRU	HRI-7890	2001	1.0	1.1	1.1	7.0
GBRHRIGRU	HRI-7902	2001	1.0	1.7	2.0	6.5
GBRHRIGRU	HRI-7904	2001	1.6	1.5	1.6	6.9
GBRHRIGRU	HRI-8684	2001	1.0	1.3	1.2	6.1
GBRHRIGRU	HRI-8685	2001	1.0	1.3	1.2	6.0
GBRHRIGRU	HRI-8715	2001	1.0	2.4	2.7	3.8
GBRHRIGRU	HRI-8716	2001	1.0	2.2	2.1	4.1
GBRHRIGRU	HRI-8727	2001	1.0	1.0	1.0	6.0
GBRHRIGRU	HRI-9808	2001	1.0	1.6	1.7	6.7
GBRHRIGRU	HRI-10146	2001	-999	-999	-999	-999
GBRHRIGRU	HRI-10149	2001	1.1	1.6	1.6	6.3
GBRHRIGRU	HRI-10156	2001	1.0	1.7	1.3	5.7
GBRHRIGRU	HRI-10165	2001	1.8	2.5	1.6	5.3
GBRHRIGRU	HRI-10228	2001	2.3	1.1	1.1	4.4
GBRHRIGRU	HRI-10264	2001	1.0	2.1	2.0	6.5
GBRHRIGRU	HRI-10522	2001	1.0	1.5	1.3	6.2
GBRHRIGRU	HRI-10524	2001	2.4	2.1	5.9	3.3
GBRHRIGRU	HRI-11201	2001	3.8	2.3	2.0	5.4
GBRHRIGRU	HRI-11261	2001	1.0	1.5	1.3	6.1
Standard	Autumn king	2001	1.0	1.0	1.6	6.5
	News F1	2002	1.0	1.0	1.1	6.8
FRAINH	Russe n°7 - INH 11	2002	1.0	1.5	1.2	5.4
FRAINH	Amsterdamer- INH 12	2002	1.0	1.2	1.5	6.8
FRAINH	Jere - INH 13	2002	2.7	1.1	1.2	6.5
FRAINH	Parijse Markt 2 - INH 14	2002	1.0	1.5	1.6	6.7
FRAINH	Boev - INH 15	2002	1.0	1.2	1.3	6.9
FRAINH	Eysines -INH 16	2002	1.0	1.6	1.7	6.9
FRAINH	Rote Riesen - INH 17	2002	1.0	1.3	1.5	6.8
FRAINH	St Valery Sileban-INH 18	2002	1.0	1.6	1.9	6.9
FRAINH	Russe n°3 - INH 19	2002	1.0	1.1	1.3	6.8
FRAINH	Nantaiser 58 - INH 20	2002	1.0	1.1	1.3	6.9
Standard	Parmex	2002	1.0	1.0	1.1	6.8
	Loc ITA 1	2002	1.1	1.7	1.9	6.8
DEU001	56341-BAZ	2002	1.0	1.9	2.1	7.4
DEU001	56335-BAZ	2002	1.0	1.3	1.8	7.0
Standard	Amsterdam	2002	1.0	1.1	1.9	6.8
Standard	Nikki F1	2002	1.0	1.1	1.8	6.8
GBRHRIGRU	3838 - HRI	2002	1.0	1.0	1.5	7.4
GBRHRIGRU	3936 - HRI	2002	1.3	1.7	1.8	6.7
GBRHRIGRU	3966 - HRI	2002	1.0	1.1	1.1	6.8
GBRHRIGRU	3998 - HRI	2002	1.1	1.4	1.7	6.9
GBRHRIGRU	5784 - HRI	2002	1.0	1.1	1.5	7.0

GBRHRIGRU 6070 - HRI	2002	1.0	1.0	1.1	6.5
GBRHRIGRU 6102 - HRI	2002	1.0	1.1	1.4	6.7
GBRHRIGRU 6755 - HRI	2002	1.1	1.9	1.7	6.6
GBRHRIGRU 6760 - HRI	2002	2.1	1.2	1.3	6.7
GBRHRIGRU 7174 - HRI	2002	1.0	2.1	2.1	6.8
GBRHRIGRU 7301- HRI	2002	5.3	1.1	1.1	6.4
GBRHRIGRU 7801- HRI	2002	1.0	1.5	1.6	7.1
GBRHRIGRU 7893 - HRI	2002	1.0	1.0	1.3	6.8
GBRHRIGRU 8080 - HRI	2002	1.0	1.0	1.2	6.7
GBRHRIGRU 8081- HRI	2002	1.0	1.1	1.7	6.8
GBRHRIGRU 8095 - HRI	2002	1.0	1.2	1.9	6.8
GBRHRIGRU 8116 - HRI	2002	1.0	1.3	1.7	6.9
GBRHRIGRU 8125 - HRI	2002	1.0	1.1	1.4	6.4
GBRHRIGRU 8394 - HRI	2002	1.1	1.2	1.6	6.8
GBRHRIGRU 10168 - HRI	2002	1.5	2.5	2.5	6.1
GBRHRIGRU 10176 - HRI	2002	2.8	1.7	1.5	7.0
GBRHRIGRU 10194 - HRI	2002	1.4	3.5	3.3	6.1
GBRHRIGRU 10220 - HRI	2002	1.6	3.3	3.4	5.5
GBRHRIGRU 10225 - HRI	2002	3.4	2.1	1.9	6.2
GBRHRIGRU 10233 - HRI	2002	1.1	1.2	1.6	7.1
GBRHRIGRU 10237- HRI	2002	2.2	2.1	2.4	6.8
GBRHRIGRU 10246 - HRI	2002	1.1	1.4	1.6	6.7
GBRHRIGRU 10261- HRI	2002	1.0	1.0	1.2	6.7
GBRHRIGRU 10305 - HRI	2002	1.1	1.3	1.8	7.0
GBRHRIGRU 10385 - HRI	2002	1.1	3.3	3.0	7.1
GBRHRIGRU 10468 - HRI	2002	1.3	4.0	3.8	5.5
GBRHRIGRU 10520 - HRI	2002	1.0	1.6	1.5	7.1
GBRHRIGRU 10521- HRI	2002	4.1	2.9	2.9	7.0
GBRHRIGRU 11163 - HRI	2002	1.0	1.3	1.7	6.8
GBRHRIGRU 11169 - HRI	2002	1.0	1.1	1.2	7.1
GBRHRIGRU 11503 - HRI	2002	1.0	1.0	1.1	6.8
GBRHRIGRU 12869 - HRI	2002	1.2	2.0	1.5	7.7
Standard Autumn King	2002	1.0	1.1	1.5	6.7
Loc ITA 2	2002	1.3	1.4	1.6	7.2
REGNGB 2399 - NGB	2002	1.2	1.1	1.3	6.9
REGNGB 7748 - NGB	2002	1.0	1.2	1.8	6.9
REGNGB 13942 - NGB	2002	-999	-999	-999	-999
REGNGB 13943 - NGB	2002	-999	-999	-999	-999
REGNGB 13945 - NGB	2002	1.0	1.0	1.5	6.9
REGNGB 13946 - NGB	2002	1.0	1.2	1.7	6.7
REGNGB 13949 - NGB	2002	1.0	1.1	1.7	6.8
REGNGB 13955 - NGB	2002	1.0	1.6	2.1	6.6
REGNGB 13951 - NGB	2002	1.0	1.1	1.4	6.4
REGNGB 13636 - NGB	2002	1.0	1.2	1.5	6.9
GBRHRIGRU 5798-HRI	2002	1.3	1.2	1.7	6.9



Foliage width (crown)	Root length	Root diameter	diameter relative to total	Root branching	Root shape in longitudinal section	Root shoulder shape	Root tapering	Root tip shape
5.2	5.6	4.7	6.5	1.4	3.3	2.8	0.7	2.5
4.1	6.2	4.9	6.0	0.6	3.2	2.5	1.0	2.8
4.4	3.0	3.7	5.7	1.5	2.6	2.6	1.2	2.8
5.0	6.0	4.8	6.3	1.1	3.2	2.8	0.9	2.6
4.5	4.6	4.0	5.5	1.1	3.6	2.7	0.5	2.2
4.9	4.3	5.6	6.5	1.4	3.3	3.1	1.2	2.4
4.6	4.5	4.5	5.6	1.2	3.1	2.6	1.0	2.8
5.5	5.1	5.5	6.0	1.3	3.0	2.4	1.6	2.7
5.4	6.1	4.7	7.4	1.4	3.0	2.4	1.3	2.9
4.6	4.8	4.2	4.7	0.5	3.7	2.6	0.8	2.2
4.7	2.6	5.7	5.0	1.2	1.7	2.4	0.4	1.9
5.1	4.9	3.9	6.4	1.3	3.2	2.8	1.1	2.8
4.6	4.7	4.0	5.3	0.6	3.1	2.6	1.2	2.9
4.4	4.7	3.5	4.9	0.9	3.5	2.4	0.8	2.4
4.5	3.9	4.3	6.5	1.1	3.0	2.5	1.9	2.7
4.9	4.6	4.9	6.2	1.3	2.4	2.4	1.8	2.7
4.6	4.9	4.8	5.6	1.4	3.3	2.8	1.1	2.5
5.7	4.4	6.2	6.4	1.5	2.4	2.4	2.3	2.6
4.6	5.4	4.4	6.0	1.4	3.1	2.5	1.1	2.6
4.6	3.7	5.6	6.6	1.3	2.0	2.4	1.4	1.8
4.6	4.1	3.7	6.2	0.7	3.3	2.6	0.9	2.7
4.7	3.9	4.3	5.4	1.3	3.0	2.4	1.5	3.0
4.8	4.3	4.7	6.2	1.0	3.1	2.9	1.3	2.8
4.7	4.3	3.5	6.2	0.6	3.3	2.7	1.0	2.6
4.3	4.0	2.9	4.9	1.2	3.4	3.0	0.9	2.3
5.1	5.3	4.5	6.1	1.4	3.1	2.9	1.1	2.7
4.7	3.1	5.8	6.6	0.9	2.0	2.5	0.9	2.0
4.3	2.9	3.8	5.7	1.0	2.0	2.6	0.7	2.3
5.3	4.7	5.1	6.0	2.0	3.0	2.6	1.1	2.6
5.3	4.3	4.9	6.5	1.2	3.0	2.3	1.4	2.8
3.1	2.6	5.0	5.2	0.6	2.1	2.5	1.0	2.4
4.4	6.7	2.2	6.4	2.2	3.0	1.1	1.7	3.0
3.9	4.8	3.3	4.5	1.1	3.7	2.7	1.0	2.6
4.8	4.8	4.3	5.9	1.0	3.4	2.7	1.1	2.8
4.3	5.2	4.2	6.6	2.5	3.0	1.9	2.2	2.8
5.3	5.1	5.0	6.1	1.5	3.2	2.5	1.4	2.8
5.2	4.1	4.7	5.7	1.0	3.0	2.6	1.4	2.7
4.3	4.7	1.6	5.4	1.3	3.0	1.1	1.1	2.9
5.1	4.7	4.3	6.0	1.3	3.0	2.8	1.3	2.6
4.9	4.9	4.0	5.3	1.7	3.0	2.4	1.8	2.8
4.3	5.1	3.4	5.1	2.0	3.1	1.9	1.6	2.8
4.7	4.0	4.9	5.7	2.5	3.2	2.4	1.1	2.4

5.5	4.7	4.6	6.4	1.8	3.0	2.4	1.4	2.8
4.9	4.1	3.6	5.6	1.2	3.1	2.6	1.3	2.6
5.9	5.2	5.3	7.0	2.1	3.1	2.9	1.3	2.6
4.4	3.7	4.2	6.1	1.0	2.9	2.4	1.4	2.7
5.1	4.1	4.4	6.3	1.8	3.1	2.5	1.5	2.6
5.7	5.9	4.1	6.0	1.0	3.1	2.5	1.2	2.9
4.9	3.9	3.4	4.7	2.7	3.0	1.9	1.7	2.9
4.3	4.1	4.0	6.2	0.7	3.0	2.5	1.7	2.8
5.2	4.1	4.4	6.2	0.9	3.0	2.2	1.4	2.9
4.8	3.8	3.8	5.2	1.6	3.0	2.4	2.1	2.8
5.1	4.8	2.4	4.6	2.2	3.0	1.4	2.0	3.0
4.8	3.8	3.6	5.9	1.5	3.1	2.6	0.9	2.8
5.6	5.6	3.4	5.6	1.9	3.0	1.6	1.4	3.0
5.6	4.8	3.5	5.9	2.0	3.1	2.1	1.3	2.9
4.7	4.0	4.1	6.6	1.1	3.0	2.9	1.5	2.8
5.2	4.8	4.3	6.9	1.5	3.2	2.5	0.8	2.7
4.9	4.5	4.0	6.4	0.8	3.0	2.7	1.6	2.9
4.4	5.1	5.7	6.4	2.0	3.2	2.8	1.5	2.7
4.6	5.1	2.3	6.2	2.5	3.0	1.7	1.3	2.9
4.7	3.8	1.6	5.9	5.1	3.0	1.0	0.9	2.7
4.7	3.6	2.1	6.9	4.8	3.0	1.0	0.9	2.9
5.6	3.3	1.8	5.9	2.5	3.0	1.0	0.9	3.0
5.4	5.2	5.1	6.3	1.4	3.0	2.1	2.0	3.0
-999	-999	-999	-999	-999	-999	-999	-999	-999
5.0	4.3	3.8	5.9	3.4	3.1	1.9	1.2	2.8
3.3	3.0	1.8	5.6	3.3	3.0	1.3	1.5	2.8
4.1	4.3	3.2	5.6	1.6	3.1	1.6	1.7	2.9
3.3	2.6	2.8	3.6	2.3	3.0	1.6	2.0	3.0
4.6	5.5	3.9	4.8	2.3	3.0	1.8	1.8	2.9
4.0	4.2	2.4	5.9	2.0	3.1	2.0	1.2	2.8
3.6	2.7	2.0	2.9	3.1	1.1	0.8	2.8	4.6
5.8	4.3	3.4	5.6	3.6	3.0	1.4	1.8	2.6
5.2	4.7	1.9	5.4	1.5	3.0	1.3	2.0	3.0
5.2	5.3	5.4	6.6	0.8	3.1	2.8	1.1	2.6
2.7	4.2	3.9	5.4	0.7	3.3	3.2	0.9	2.3
2.0	5.4	2.6	4.8	1.4	3.0	1.8	1.6	2.9
1.8	4.6	2.6	4.2	0.8	3.3	3.7	0.8	2.7
2.7	5.8	3.6	6.2	0.4	3.0	2.5	1.7	3.0
1.7	1.4	4.0	4.8	1.5	1.6	2.9	0.7	2.4
3.5	5.2	4.0	6.0	0.5	3.1	2.9	1.3	2.8
3.4	3.9	3.9	4.5	1.0	3.2	2.7	1.1	2.5
2.0	4.3	3.5	5.0	1.0	3.0	3.5	1.5	2.5
4.1	6.9	4.6	7.2	0.8	3.0	3.0	2.2	3.0
4.0	5.9	3.6	4.6	1.5	3.0	2.4	1.7	3.0
2.1	4.2	4.0	5.1	0.9	3.2	3.4	1.2	2.6
1.8	1.0	4.5	4.7	1.0	1.3	2.7	0.2	1.8
3.1	3.6	3.8	5.9	0.9	3.2	3.4	1.6	2.6
2.4	4.1	2.7	5.1	1.9	3.2	1.5	0.9	2.9
1.8	3.7	3.4	4.7	1.0	3.7	3.3	0.6	2.4
1.5	4.2	2.5	4.3	0.2	3.8	3.3	0.2	2.4
2.6	4.4	4.2	5.1	0.7	3.5	3.6	0.5	2.5
2.7	4.0	4.0	5.2	1.0	2.9	3.0	1.5	2.9
2.2	2.2	3.7	4.5	1.0	2.7	2.8	1.5	2.6
1.9	1.5	4.3	6.2	0.4	1.0	2.3	0.1	1.6
3.2	3.7	4.2	5.6	0.4	3.0	2.8	1.5	2.7
3.5	3.9	4.5	6.1	0.9	3.0	2.8	2.0	3.0

1.4	3.5	2.7	4.1	0.3	3.6	3.5	0.5	2.3
3.1	5.1	3.7	5.9	0.8	3.0	2.9	2.3	3.0
5.1	5.0	5.8	5.4	2.6	3.0	2.4	2.5	2.7
2.2	5.0	4.6	4.5	1.9	3.0	2.9	1.8	2.9
3.3	4.9	2.6	5.8	1.1	3.0	2.1	1.3	3.0
4.7	5.6	5.7	6.2	2.7	3.0	3.0	2.2	3.0
3.7	4.0	5.5	4.5	1.6	2.7	2.2	1.8	2.6
2.7	3.9	3.9	4.6	0.7	3.3	3.1	1.0	2.3
2.0	4.7	3.2	5.8	0.4	3.4	3.4	0.8	2.5
2.9	4.7	4.1	5.5	0.9	3.2	3.1	1.4	2.6
3.3	5.1	3.9	6.6	1.0	3.2	3.0	1.3	2.7
3.2	4.8	3.8	5.5	1.6	3.0	3.0	1.3	2.9
2.5	5.9	4.1	5.0	1.0	3.2	2.8	1.2	2.6
3.6	4.3	4.5	5.4	1.4	3.1	3.0	1.3	2.7
1.7	5.4	1.8	4.9	1.5	3.0	2.2	1.2	3.0
2.7	5.3	3.0	4.6	1.8	3.0	2.1	1.8	2.9
1.7	5.5	2.8	4.5	2.2	3.0	2.6	1.8	3.0
1.4	4.5	2.2	5.1	2.8	3.0	2.3	1.8	2.9
4.2	4.3	4.8	6.1	3.9	5.0	2.6	2.7	4.8
1.8	2.1	2.1	5.2	2.1	3.0	3.1	1.6	2.9
2.9	5.5	3.5	5.5	2.8	3.0	2.6	1.5	2.9
3.2	3.8	5.0	5.4	1.7	3.0	2.4	1.9	2.8
1.1	3.6	1.4	5.5	1.5	3.0	2.6	1.7	2.9
3.1	5.1	3.9	6.2	1.4	3.1	2.9	1.4	2.9
3.5	4.0	2.4	6.6	2.5	3.0	2.1	1.5	3.0
3.4	4.9	2.8	6.0	2.2	3.0	2.0	1.7	3.0
2.1	2.7	3.2	4.6	1.3	3.0	3.2	1.3	2.8
3.7	5.0	2.6	6.0	4.1	3.0	1.9	1.5	3.0
2.4	3.9	4.2	4.9	1.2	3.0	3.0	1.3	2.7
2.2	4.0	4.1	4.8	1.3	3.2	3.1	1.3	2.8
1.6	4.1	3.2	4.7	0.7	3.3	3.2	1.0	2.6
4.1	3.6	1.8	7.7	3.9	3.0	1.1	1.0	2.9
2.7	4.4	4.0	6.4	0.9	3.1	3.1	1.3	2.8
2.9	4.1	4.0	5.3	1.1	3.1	2.9	1.4	2.7
2.8	3.5	4.5	5.3	0.9	2.7	2.6	1.8	2.6
3.4	5.4	4.0	6.1	1.7	3.0	2.6	2.1	3.0
-999	4.4	5.0	7.1	1.4	2.9	2.6	1.3	3.0
-999	4.9	5.1	7.3	1.1	3.1	2.5	1.4	3.0
2.8	4.7	3.5	4.5	0.7	3.4	3.4	0.9	2.5
2.0	4.6	4.0	4.7	0.5	3.3	2.9	0.9	2.5
1.1	4.5	2.5	3.8	0.6	3.3	3.4	0.9	2.7
3.6	4.7	4.7	6.2	1.3	3.1	2.9	1.4	2.9
1.6	4.3	3.2	3.8	0.7	3.4	3.2	0.7	2.6
3.0	3.7	5.3	5.9	1.0	2.9	2.2	1.6	2.5
1.8	6.1	3.1	4.4	0.4	3.0	2.7	1.6	2.9

### Legend

missing data: -999

sample with more than 1 external colour:

eg: 3+2 mixed 3 (orange) and 2: yellow, with

eg: 2+3 mixed 2 (yellow) and 3: orange, with

eg: 3(+2) mixed 3 (orange) and 2: yellow, with

colour: in 2002: 99= pink salmon

Root skin colour	Root skin colour intensity	percentage external colour						Root cortex colour
		1. white	2. yellow	3. orange	4. red	5. purple	other	
3.0	5.1	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.5	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
5.0	3.8	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.8	0.000	0.000	1.000	0.000	0.000	0.000	3(+2)
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.3	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.8	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.8	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.3	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.6	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.2	0.000	0.000	1.000	0.000	0.000	0.000	3+2(+1)
3.0	4.8	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.6	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3(+2)
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.8	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3+1+2	4.1	0.224	0.143	0.633	0.000	0.000	0.000	3+2+1
3.0	4.8	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
2+1+5	3.3	0.380	0.540	0.000	0.000	0.080	0.000	2+1
3.0	4.4	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.8	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3+1	3.3	0.340	0.000	0.660	0.000	0.000	0.000	3+1+2
3.0	4.5	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3+2+1(+5)	4.7	0.224	0.224	0.510	0.000	0.041	0.000	3+2+1
3+2+1(+5)	4.2	0.159	0.227	0.568	0.000	0.045	0.000	3+2+1
3(+2)	4.3	0.000	0.020	0.980	0.000	0.000	0.000	3(+2)

3(+2)	4.3	0.000	0.040	0.960	0.000	0.000	0.000	3(+2)
3.0	4.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.2	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.7	0.000	0.000	1.000	0.000	0.000	0.000	3(+1)
3+2(+1)	3.5	0.021	0.250	0.729	0.000	0.000	0.000	3+2(+1)
2+5+1+3	4.4	0.063	0.500	0.042	0.000	0.396	0.000	2+4+1
3.0	4.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3+2+1	4.4	0.042	0.167	0.792	0.000	0.000	0.000	3+2+1
1+3	4.0	0.700	0.000	0.300	0.000	0.000	0.000	1+2+3
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
2+1	5.5	0.360	0.640	0.000	0.000	0.000	0.000	2+1
5+2	5.7	0.174	0.087	0.000	0.000	0.739	0.000	2+4
3.0	4.8	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.7	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3+5	4.0	0.104	0.000	0.896	0.000	0.000	0.000	3.0
3+2+1	4.5	0.082	0.102	0.816	0.000	0.000	0.000	3+2(+1)
3+5+1+2	3.4	0.061	0.041	0.735	0.000	0.163	0.000	3+2+1+4
1.0	3.9	1.000	0.000	0.000	0.000	0.000	0.000	1+2
1.0	5.8	1.000	0.000	0.000	0.000	0.000	0.000	1.0
1.0	3.4	1.000	0.000	0.000	0.000	0.000	0.000	1.0
2+1	4.0	0.184	0.816	0.000	0.000	0.000	0.000	2+1
-999	-999	-999	-999	-999	-999	-999	-999	-999
3+2+1(+5)	4.0	0.260	0.300	0.400	0.000	0.040	0.000	2+3+1
1+2	4.5	0.857	0.143	0.000	0.000	0.000	0.000	1+2(+3)
5+2(+3)	4.2	0.000	0.040	0.020	0.000	0.940	0.000	2+1+4
5+1+3	2.5	0.080	0.000	0.040	0.000	0.880	0.000	1+2+3+4
3+1+2	3.5	0.080	0.040	0.880	0.000	0.000	0.000	3+2(+1)
3+1+2	4.6	0.300	0.180	0.520	0.000	0.000	0.000	3+2+1
3(+2+1)	2.9	0.020	0.040	0.940	0.000	0.000	0.000	3+2(+1)
5+1	5.5	0.040	0.000	0.000	0.000	0.960	0.000	2+4(+1)
5+1(+3)	4.3	0.400	0.000	0.020	0.000	0.580	0.000	1+2+4
3.0	4.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
2(+3)	5.0	0.000	0.980	0.020	0.000	0.000	0.000	2(+3)
3.0	3.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.7	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.8	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	3.5	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.8	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.4	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3(+2)	4.3	0.000	0.040	0.960	0.000	0.000	0.000	3(+2)
3.0	4.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.8	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	3.8	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	3.2	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.8	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.8	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	3.5	0.000	0.000	1.000	0.000	0.000	0.000	3.0



3.0	3.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
4+3	4.3	0.000	0.000	0.100	0.900	0.000	0.000	4+3+2
4.0	4.2	0.000	0.000	0.000	1.000	0.000	0.000	4.0
99+3+2+1*	3.8	0.160	0.060	0.380	0.000	0.000	0.400	99+3+2+1*
5.0	6.9	0.000	0.000	0.000	0.000	1.000	0.000	5(+2)
3.0	5.9	0.000	0.000	1.000	1.000	0.000	0.000	3.0
3.0	4.2	0.000	0.000	1.000	1.000	0.000	0.000	3.0
3.0	4.1	0.000	0.000	1.000	1.000	0.000	0.000	3.0
3.0	4.7	0.000	0.000	1.000	1.000	0.000	0.000	3.0
3.0	4.5	0.000	0.000	1.000	1.000	0.000	0.000	3.0
3.0	5.2	0.000	0.000	1.000	1.000	0.000	0.000	3.0
3+2	4.5	0.000	0.116	0.389	0.495	0.000	0.000	3+2
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
2+1+5+3	3.8	0.238	0.381	0.167	0.000	0.214	0.000	2+5+3
3+2+1(+5)	3.9	0.108	0.351	0.432	0.000	0.027	0.081	2+3
2+5+1+3	3.8	0.120	0.720	0.040	0.000	0.120	0.000	2+3+5
5+1+2	3.8	0.340	0.300	0.000	0.000	0.360	0.000	2+5
5+2(+3)	3.5	0.000	0.060	0.020	0.000	0.920	0.000	2(+3)
3.0	3.5	0.000	0.000	1.000	0.000	0.000	0.000	3.0
5+2+1	3.2	0.158	0.184	0.000	0.000	0.658	0.000	2+5
3+2	4.5	0.000	0.240	0.760	0.000	0.000	0.000	3+2
3+1	3.0	0.182	0.000	0.818	0.000	0.000	0.000	3+2
3+2	4.1	0.000	0.080	0.920	0.000	0.000	0.000	3+2
5+1+2	3.7	0.200	0.120	0.000	0.000	0.680	0.000	5+2+1
2+3+1	3.8	0.180	0.620	0.200	0.000	0.000	0.000	2+3+1
3.0	3.7	0.000	0.000	1.000	0.000	0.000	0.000	3.0
5+1+2+3	3.5	0.381	0.381	0.095	0.024	0.167	0.000	2+3(+1+5)
1.0	4.3	1.000	0.000	0.000	0.000	0.000	0.000	1.0
3.0	4.8	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
1+2+5	3.9	0.607	0.214	0.000	0.000	0.179	0.000	2+1
3.0	5.1	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.8	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.2	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.8	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.4	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.9	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	4.1	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0
3.0	5.0	0.000	0.000	1.000	0.000	0.000	0.000	3.0

3 prevailing  
 2 prevailing  
 th 2 sporadic (<4%)

Root core colour	Percentage bolted
3.0	0.000
3.0	0.000
3+2	0.000
3+2	0.000
3.0	0.000
3+2	0.000
3+2	0.000
3+2	0.000
3+2	0.000
3.0	0.000
3(+2)	0.060
3.0	0.000
3.0	0.000
3.0	0.000
3.0	0.060
3+2	0.020
3+2	0.000
3+2	0.000
3.0	0.040
3+2	0.060
3.0	0.000
3+2(+1)	0.040
3.0	0.000
3.0	0.000
3+2	0.000
3+2	0.000
3(+2)	0.160
3.0	0.020
3.0	0.000
3.0	0.000
3(+2)	0.060
2+1(+3)	0.551
3.0	0.000
3.0	0.000
2+1	0.340
3+2	0.020
3+2	0.020
1+3+2	0.600
2+3	0.000
2+1+3	0.000
2+3+1	0.000
2+3	0.020

2+3	0.040
3+2	0.000
3.0	0.020
3+2	0.000
3(+1)	0.040
3+2+1	0.021
2+1	0.083
3(+2)	0.040
3.0	0.000
3+2+1	0.021
1+2	0.220
3.0	0.000
2+1	0.100
2.0	0.043
3(+2)	0.000
3(+2)	0.000
3(+2)	0.000
2(+3+1)	0.224
1+2+3	0.878
1+2	0.000
1(+2)	0.000
1.0	0.000
2+1	0.000
-999	-999
2+1+3	0.320
1+2	0.119
2+1+4(+3)	0.600
1+2(+3)	0.000
2+1+3	0.280
2+1+3	0.140
2+3(+1)	0.160
2(+1)	0.280
2+1	0.580
3.0	0.000
3.0	0.000
2(+3)	0.000
3(+2)	0.000
3+2	0.000
3.0	0.000
3(+2)	0.000
2+3	0.000
3.0	0.000
3+2	0.000
3+2	0.000
3.0	0.000
3.0	0.000
3+2	0.000
3.0	0.000
3+2	0.000
3(+2)	0.000
3.0	0.000
3.0	0.000
2+3	0.000
2+3	0.000
3(+2)	0.000
3+2	0.000

3.0	0.000
3.0	0.000
2+4+3+1	0.080
4+2+3	0.000
2+3+99+1*	0.080
5+2	0.000
3(+2)	0.000
2+3	0.000
3.0	0.000
3+2	0.000
3(+2)	0.000
3(+2)	0.000
3+2	0.000
3(+2)	0.000
2(+3)	0.000
2(+3)	0.027
2(+1)	0.000
2.0	0.000
2.0	0.000
3+2	0.000
2.0	0.000
3+2	0.000
3+2	0.000
3+2	0.000
3+2	0.000
2(+1)	0.420
2+1+3	0.120
3+2	0.000
2+1(+3)	0.571
3+2	0.000
3(+2)	0.000
3+2	0.000
2+1	0.321
3.0	0.000
3+2	0.000
3+2	0.000
3(+2)	0.000
3.0	0.000
3.0	0.000
3(+2)	0.000
3(+2)	0.000
3(+2)	0.000
3.0	0.000
3.0	0.000
3+2	0.000
3(+2)	0.000