Račko V, Mišíková O, Hlaváč P, Deáková V (2018)
Can bark stripping cause red heartwood formation in beech stems?
iForest – Biogeosciences and Forestry – doi: 10.3832/ifor2147-011

Supplementary Material

Tab. S1 - List of pathogens found at the three study sites. Frequency of pathogens: (+) up to 10 %; (++) from 11% to 25%.

Pathogen	Type	Frequency
Ascodichaena rugosa Butin	parasitic	+
Bisporella citrina (Batsch) Korf et S. E. Carp.	saprophytic	+
Bjerkandera adusta (Willd.) P. Karst.	saproparasitic	++
Climacodon septentrionalis (Fr.) P. Karst.	parasitic	+
Cerrena unicolor (Bull.) Murrill.	parasitic	+
Diatrype disciformis (Hoffm.) Fr.	saprophytic	++
Exidia plana (Wigg.) Donk	saprophytic	+
Fomes fomentarius (L.) J. Kickx f.	parasitic	++
Ganoderma applanatum (Pers. ex S. F. Gray) Pat.	parasitic	+
Hericium clathroides (Pall.) Pers.	saprophytic	+
Hypoxylon fragiforme (Pers.) J. Kickx f.	saprophytic	++
Lentinelus ursinus (Fr.) Kühner	saprophytic	+
Nectria cinnabarina (Tode) Fr.	saprophytic	+
Neonectria coccinea (Pers.) Rossman &Samuels	cancer	+
Panellus serotinus (Schrad.) Kühner	saprophytic	+
Pleurotus ostreatus (Jacq.) P. Kumm.	saproparasitic	+
Pluteus petasatus (Fr.) Gillet	saprophytic	+
Pycnoporus cinnabarinus (Jack.) P. Karst.	saprophytic	+
Schizophyllum commune Fr.	saprophytic	++
Stereum hirsutum (Willd.) Gray	saprophytic	++
Trametes gibbosa (Pers.) Fr.	saprophytic	++
Trametes hirsuta (Wulfen) Lloyd	saprophytic	++
Trametes versicolor (L.) Pilát	saprophytic	+
Ustulina deusta (Hoffm.) Lind	parasitic	+

Tab. S2 - Extent of discoloration and decay of injuries with different range of injury closure period.

Injury closure period (range)	n	Discoloration depth (cm)	Discoloration depth increase between ranges	Decay depth (cm)	Decay depth increase between ranges
2-5 years	29	1.7±1.8	-	0.5±1.0	-
5-10 years	61	4.5±3.8	2.8	2.0±2.9	1.5
10-15 years	16	8.1±6.8	3.6	4.4±4.9	2.4
15-20 years	6	14.1±7.1	6.0	6.1±3.8	1.6

Tab. S3 - Attributes of the binary logistic model describing the probability of penetration of discoloration through the sapwood into the central part of the stem. (ns): non significant; (*): p<0.05; (**): p<0.01; (***): p<0.001.

Attributes	Initial model						Adjusted model					
	Logistic regression coefficients and significance levels			Odds ratios and 95% confidence intervals			Logistic regression coefficients and significance levels			Odds ratios and 95% confidence intervals		
	Coef. b_i	Wald	p-level	Coef.	Low	High	Coef. b_i	Wald	p-level	Coef.	Low	High
Constant	-3.57	0.74	0.390 ns	-	-	-	-1.90	6.15	0.013*	-	-	-
Forest age	0.01	0.22	0.639 ns	1.01	0.97	1.06	-	-	-	-	-	-
Beech portion	0.01	0.16	0.687 ns	1.01	0.96	1.06	-	-	-	-	-	-
Slope	0.00	0.01	0.909 ns	1.00	0.95	1.05	-	-	-	-	-	-
Cambial age	0.02	0.52	0.470 ns	1.02	0.97	1.08	-	-	-	-	-	-
Stem diameter	-0.17	7.08	0.008**	0.84	0.74	0.96	-0.13	11.08	0.001**	0.88	0.81	0.95
Injury width	0.82	12.62	0.000***	2.27	1.44	3.56	0.79	26.47	0.000***	2.21	1.63	2.99
Injury closure	-0.03	0.05	0.816 ns	0.97	0.73	1.28	-	-	-	-	-	-

Tab. S4 - Attributes of the binary logistic model describing the probability of penetration of decay through the sapwood into the central part of the stem. (ns): non significant; (*): p<0.05; (**): p<0.01.

Attributes	Initial model						Adjusted model					
	Logistic regression coefficients and significance levels			Odds ratios and 95% confidence intervals			Logistic regression coefficients and significance levels			Odds ratios and 95% confidence intervals		
	Coef. b_i	Wald	p-level	Coef.	Low	High	Coef. b_i	Wald	p-level	Coef.	Low	High
Constant	1.67	0.09	0.761 ns	-	-	-	-3.18	10.31	0.001	-	-	-
Forest age	-0.03	0.77	0.380 ns	0.97	0.91	1.04	-	-	-	-	-	-
Beech portion	-0.06	2.41	0.121 ns	0.95	0.88	1.01	-	-	-	-	-	-
Slope	0.03	0.52	0.471 ns	1.03	0.95	1.11	-	-	-	-	-	-
Cambial age	0.03	0.36	0.551 ns	1.03	0.94	1.13	-	-	-	-	-	-
Stem diameter	-0.19	3.57	0.049 ns	0.82	0.67	1.01	-0.11	4.26	0.039*	0.89	0.80	0.99
Injury width	0.70	5.55	0.019*	2.01	1.12	3.60	0.56	10.74	0.001**	1.74	1.25	2.43
Injury closure	-0.07	0.17	0.679 ns	0.93	0.66	1.31	-	-	-	-	-	-

Tab. S5 - Attributes of the binary logistic model describing the probability of red heartwood formation. (ns): non significant; (*): p<0.05; (**): p<0.01; (***): p<0.001.

Attributes	Initial model						Adjusted model					
	Logistic regression coefficients and significance levels			Odds ratios and 95% confidence intervals			Logistic regression coefficients and significance levels			Odds ratios and 95% confidence intervals		
	Coef. b_i	Wald	p-level	Coef.	Low	High	Coef. b_i	Wald	p-level	Coef.	Low	High
Constant	-4.56	0.55	0.457 ns	-	-	-	-7.99	24.65	0.000***	-	-	-
Forest age	-0.02	0.30	0.585 ns	0.98	0.91	1.05	-	-	-	-	-	-
Beech portion	-0.04	1.44	0.230 ns	0.96	0.90	1.03	-	-	-	-	-	-
Slope	-0.03	0.78	0.376 ns	0.97	0.90	1.04	-	-	-	-	-	-
Stem diameter	-0.08	1.98	0.160 ns	0.93	0.84	1.03	-	-	-	-	-	-
Cambial age	0.08	5.31	0.021*	1.08	1.01	1.16	0.06	9.36	0.002**	1.06	1.02	1.10
Injury width	0.50	4.10	0.043*	1.64	1.02	2.66	0.39	9.85	0.002**	1.47	1.16	1.88
Injury closure	-0.01	0.00	0.947 ns	0.99	0.72	1.36	-	-	-	-	-	-

Fig. S1 - Relationship between discoloration and decay depth.

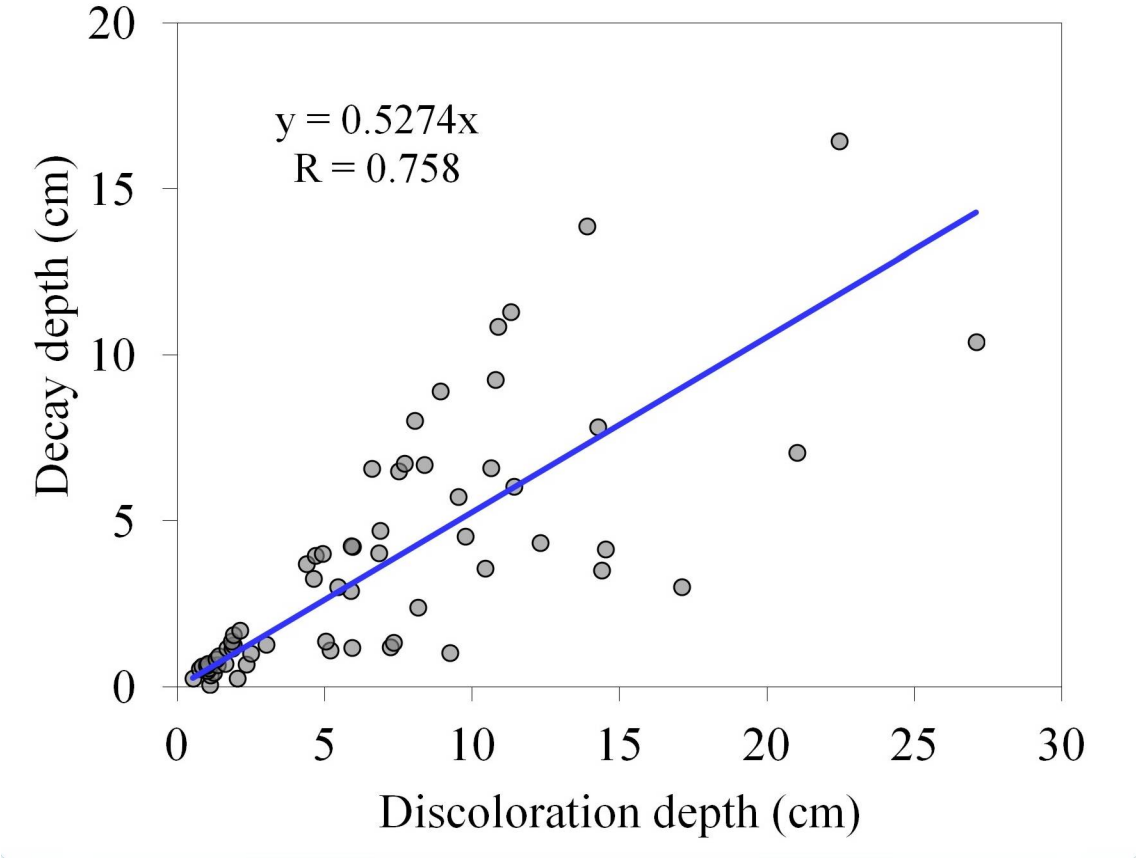

Fig. S2 - Relationship between dehydrated zone width and red heartwood width.

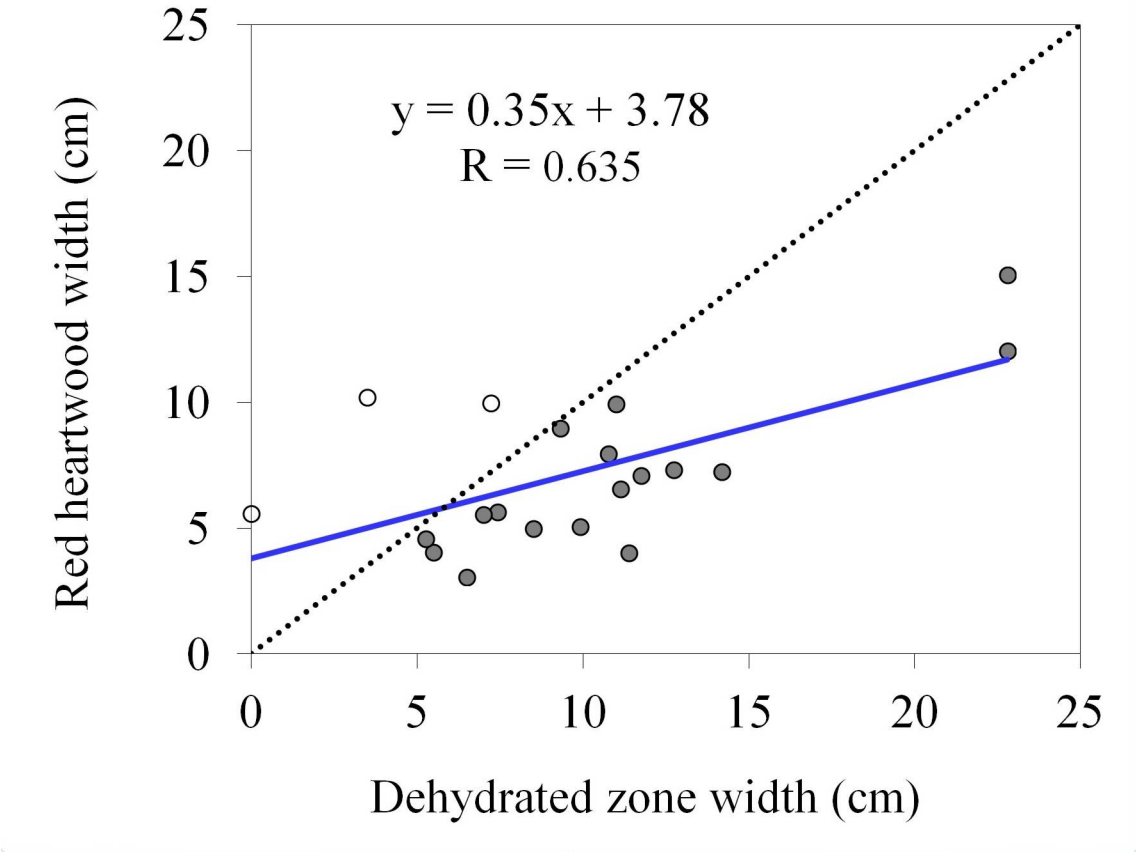

Fig. S3 - Relationship between cambial age and red heartwood width.

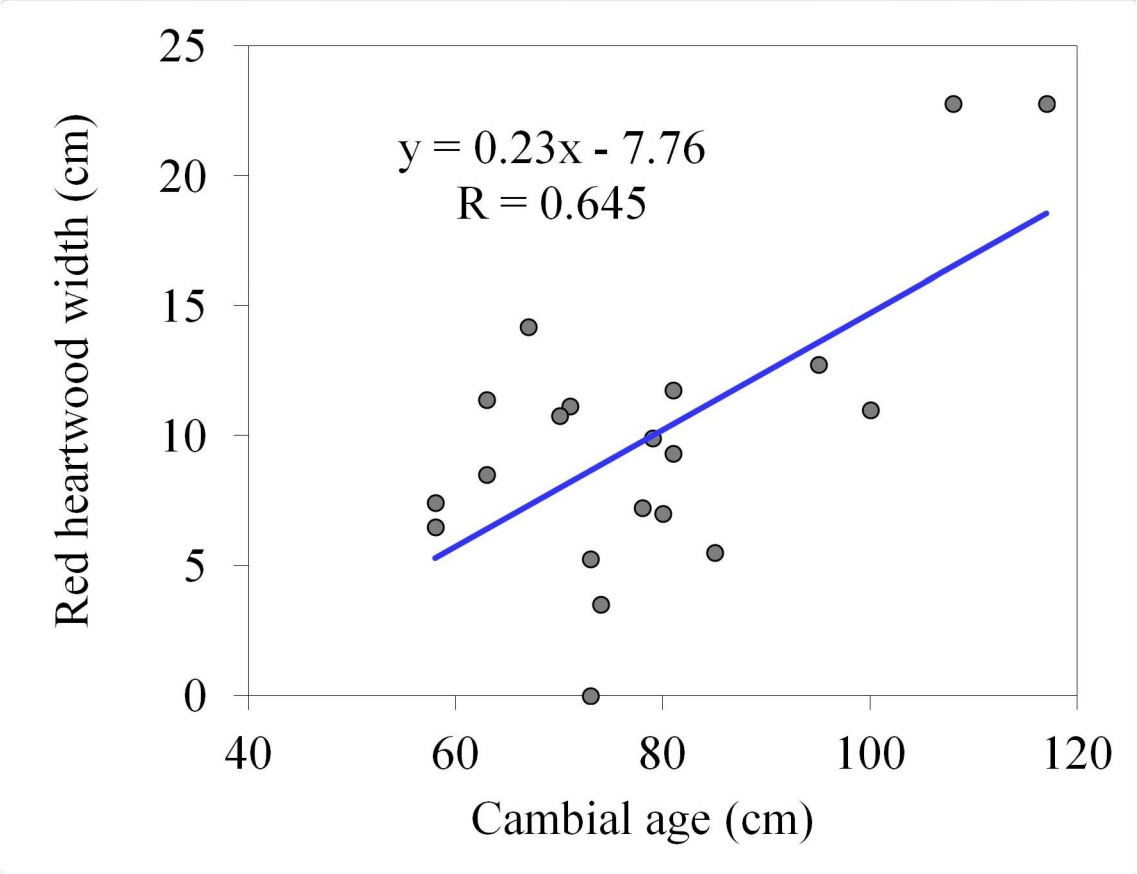

Fig. S4 - Relationship between injury width and red heartwood width.