Additional File 1

AMB Express

H_2O_2 as a candidate bottleneck for MnP activity during cultivation of *Agaricus bisporus* in compost

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Table S1: Primers used in this study.

Primer	Primer name	Sequence
1	Actin prmtr F	AAGCTTAGCCGAGAGAAGATGCCCC
2	Actin prmtr R	CCATGGTTTGTTATTCGTGTGTTCG
3	Actin trmntr F	GGATCCGCTGATGGTGCTTTATGATAAATAAAGTCCTTGGG
4	Actin trmntr R	GAATTCTACTACTACCCCCAAAACCGACATCATCC
5	Act-Pr_F_infu	CCAGGGGGATCGTTAAAGCTTAGCCGAGAGAAG
6	Act-Ter_R_infu	CGCCGAATTGGCGCGGAATTCTACTACTACCCCC

Table S2: Statistical differences over time in MnP and Lcc activity and chitin content in compost as presented in Figure 2. Time points sharing a letter are not significantly different (ANOVA with Bonferroni post hoc test, $p < 0.05$).

	A15			MnP1-1		
	MnP	**Lcc**	**Chitin**	**MnP**	**Lcc**	**Chitin**
PII	-	-	A	-	-	A
Casing	A	A	AB	A	A	AB
Venting	B	B	BC	B	B	BC
After 2nd flush	C	C	C	C	C	C

Table S3: Relative abundance of lignin residues as percentage of total molar area as presented in Figure 3. Standard deviations are indicated between brackets.

		G-residues							
		Guaiacol	**4-methylguaiacol**	**Ethyl-guaiacol**	**4-vinylguaiacol**	**Vanillin**	**Trans-isoeuganol**	**Acetovanillone**	**Guaiacylacetone**
	WS	22 (4)	2.8 (0.5)	1.9 (0.5)	37.4 (6.4)	3.5 (0.7)	2 (0.5)	1.2 (0.3)	2.8 (0.6)
	PII	24.5 (1.4)	3.3 (0.3)	2.1 (0.4)	32.9 (2.9)	2.3 (0.2)	3.4 (0.2)	1.7 (0.2)	2.3 (0.2)
Casing	**A15**	26.6 (5.4)	2.9 (0.8)	1.9 (0.6)	23.2 (6.2)	4.6 (1)	2.9 (1)	4.2 (0.7)	3.1 (0.8)
	MnP1-1	26.7 (5.6)	2.8 (0.7)	1.9 (0.4)	22.4 (5)	4.6 (0.9)	2.8 (0.6)	4.3 (0.9)	3.1 (0.6)
Venting	**A15**	31.7 (3.6)	2.5 (0.4)	1.7 (0.3)	15.9 (1.9)	4.9 (0.6)	2.2 (0.3)	5.4 (0.5)	3.3 (0.4)
	MnP1-1	31.9 (1.6)	2.5 (0.2)	1.8 (0.2)	15.5 (1)	5 (0.4)	2.2 (0.2)	5.3 (0.3)	3.3 (0.2)
After 2nd	**A15**	35.3 (2.9)	2 (0.2)	1.7 (0.2)	13.6 (1.1)	6 (0.4)	1.7 (0.1)	6.2 (0.3)	3.1 (0.2)
	MnP1-1	35.3 (2.8)	2 (0.2)	1.6 (0.2)	13.4 (1.5)	6 (0.8)	1.8 (0.3)	6.4 (0.8)	3.3 (0.4)

		S-residues						
		Syringol	**4-methylsyringol**	**4-vinylsyringol**	**Syringaldehyde**	**4-Allylsyringol**	**Acetosyringone**	**Syringylacetone**
	WS	10 (1.8)	1.3 (0.3)	8.1 (1.5)	1.4 (0.2)	2.1 (0.4)	1.8 (0.4)	1.8 (0.3)
	PII	10.2 (1.5)	1.3 (0.1)	8.5 (1.5)	1.2 (0.2)	3 (0.3)	2 (0.1)	1.5 (0.2)
Casing	**A15**	12.8 (2.6)	1.2 (0.3)	6.6 (1.3)	1.6 (0.3)	2.6 (0.5)	3.7 (0.7)	2.1 (0.4)
	MnP1-1	13.2 (2.8)	1.3 (0.3)	6.5 (1.3)	1.7 (0.3)	2.6 (0.5)	3.8 (0.7)	2.3 (0.4)
Venting	**A15**	15.4 (1.9)	1.1 (0.2)	5.2 (0.6)	1.7 (0.2)	2 (0.2)	4.3 (0.4)	2.6 (0.3)
	MnP1-1	15.6 (1.1)	1.2 (0.1)	5.1 (0.5)	1.6 (0.1)	2 (0.1)	4.4 (0.3)	2.6 (0.2)
After 2nd	**A15**	14.8 (1.4)	0.8 (0.1)	4.4 (0.2)	2 (0.2)	1.7 (0.1)	4.2 (0.3)	2.6 (0.2)
	MnP1-1	14.3 (1.7)	0.8 (0.1)	4.2 (0.6)	2.1 (0.2)	1.7 (0.2)	4.5 (0.5)	2.6 (0.3)

Text 1: Nucleotide sequence of the adapted *mnp1* over-expressed in *A. bisporus*.

CCATGGCTTTCAAAATTCTTCTCAGCCTTATTTTGGCTTTGAACGCCGTCCAATTTATTGCTGGTAC
GCACTTTACTCATATCCTCATATTATTTGCCGACAAGTCAACGATGTAGCTGTTCCTACCAGGAGG
GCGCAATGTGCCGATGGCACCACTGTTTCTAATGAGGCCTGTTGCGTTCTGCTCCCCATTATAGCA
GATATCCAGCCGAACTTGTTCGAAAACGAGTGCGGTGAAGAGGTAATGATTTAATTTTTTGATAGA
GTTACGATATTCAACAGCATATTTATACTTTAGGTCCATGAAACCTTGCGGGCATCATTTCATGATG
CTATCGGATTCTCCAGAGCAGCTGGGTAGGTTCTGACTGTCTGTGGCGGCAGCTAGTATCGCTAAA
ATGATTTCCAGTGGTGGTGGTGCTGATGGTTCTCTCGTCACTTTCGGCGATGTGGAGACGACATTT
GCCGCTAACGCAGGAATCGACGAGATTGTAGAGACATTACGACCTTTTATAAACAGCCACAACAT
CAGTGCCGGCGATTTGTGAGCCTGGACTCATAATCTGTGTTGCATCCTGTTAACGCTCTTCCTAGCA
TCCAGTTTGCAACCGTTGTTGGATTGACCAACTGCCCCGGCGCACCTCGCATACCCTTTTTCTTAGG
CCGCCCAGACGCTACCGCCGCTTCCCCCGATGGTCTTGTCCCTGAGCCCTTCGGTCAGTCTCTCATC
AGCCTTTCCGGTATAATCTACAACCCAAGTTGATAATCAACAGATTCCGTCACGAAAATTCTTGAA
CGCTTCGATGATGCTGGTTTTACCCCCACTGAAGTTGTTGCATTGCTTGCATCGTGAGTCTCTAGAA
CAAGATCGAGAAATATGTGTCCAATCCCCCCGTAGTCATACTGTCGCAGCTTCGGACACTATTGAG
CCCGGTGTAAGTTTATTTCTTCGTCAGTATGCATTCTCATCTCATGAGCACCTTATTCCAGCTCGAA
GGGTAAGACATTCCCTATCAATAAGAAACGTCTCAGTATCCAACGCAACCTCTAGTGTCCCCTTCG
ACTCGACTCCCGGAGAATTTGACAGGCAGTTCTTTATCGAGACTATGCTTAAAGGCACTTCCTTCC
CAGGGTAAGTAGTTCGTTGACATTCGTTACGCATCCTAATTTTGGCAAAGCACTGGGGGGAACCAA
GGTGAAGCCTTATCTCCCTTGCCGGGAGAACTTCGTCTCGAATCCGATGGACTTGTACGTATACAG
TCTTTTGTTGTCTGAATTTGTGATTGTTAACATTATTTATCATTAGTTGGCTCGAGGTCTGTCTTGCT
AACAAAAGGCATCTGATAACATTGAAGGACTAACTTCATCATAGATGAACGAACCGCATGTGACT
GGCAACTCTTCGCTAGTAAGAATGTTTGCCAACCAAGAAGAATAGCTCACCTAAAATTCCACGATA
GCAGATCAACAAAAAATGGCATCGGCATTTAGCGACGCGATGGTCAAACTGTCTCTCGTCGGGCA
AGATAAGAGCCAGTTGATTGATTGTTCAGACGTCATTCCGCGAACGATCCCTTTGACAAATGAACC
ATACTTCCCTGCCGACTTGACCAAAGATGATCTTGAGCAGACCGTGAGTCCAATAGACATTCACAA
TACGATTTCCACTCTGAGCCTGCTTGTTTTTGATACAGTGCCCGGATGAATTTCCTGATTACCCTTC
CAACCCCAGTGTCACTTCGGTCGCGCCAGTGTAAGTTTATGAACAGCTCCAGACGTCTGCTCTTAT
TCACTCTGCGCAAATATCTAGTCCCACCTCGTAAGGATCC

Text 2: Amino acid sequence of adapted *mnp1* over-expressed in *A. bisporus*.

M A F K I L L S L I L A L N A V Q F I A A V P T R R A Q C A D G T T V S N E A C C V L L P I I A D I Q
P N L F E N E C G E E V H E T L R A S F H D A I G F S R A A G G G G A D G S L V T F G D V E T T F A
A N A G I D E I V E T L R P F I N S H N I S A G D F I Q F A T V V G L T N C P G A P R I P F F L G R P D
A T A A S P D G L V P E P F D S V T K I L E R F D D A G F T P T E V V A L L A S H T V A A S D T I E P
G L E G V P F D S T P G E F D R Q F F I E T M L K G T S F P G T G G N Q G E A L S P L P G E L R L E S
D G L L A R D E R T A C D W Q L F A T D Q Q K M A S A F S D A M V K L S L V G Q D K S Q L I D C
S D V I P R T I P L T N E P Y F P A D L T K D D L E Q T C P D E F P D Y P S N P S V T S V A P V P T S