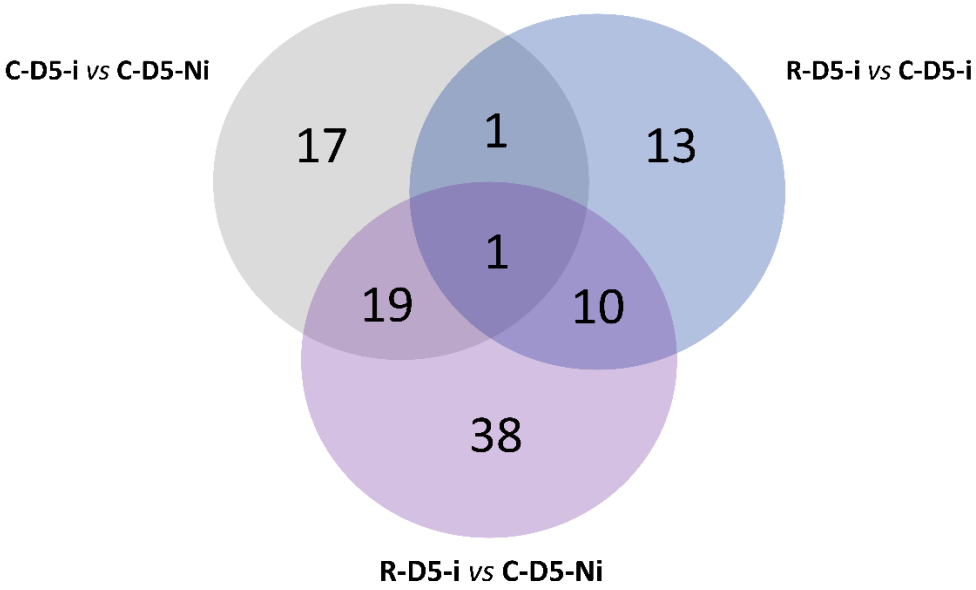
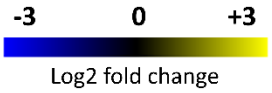
SUPPLEMENTARY FIGURES

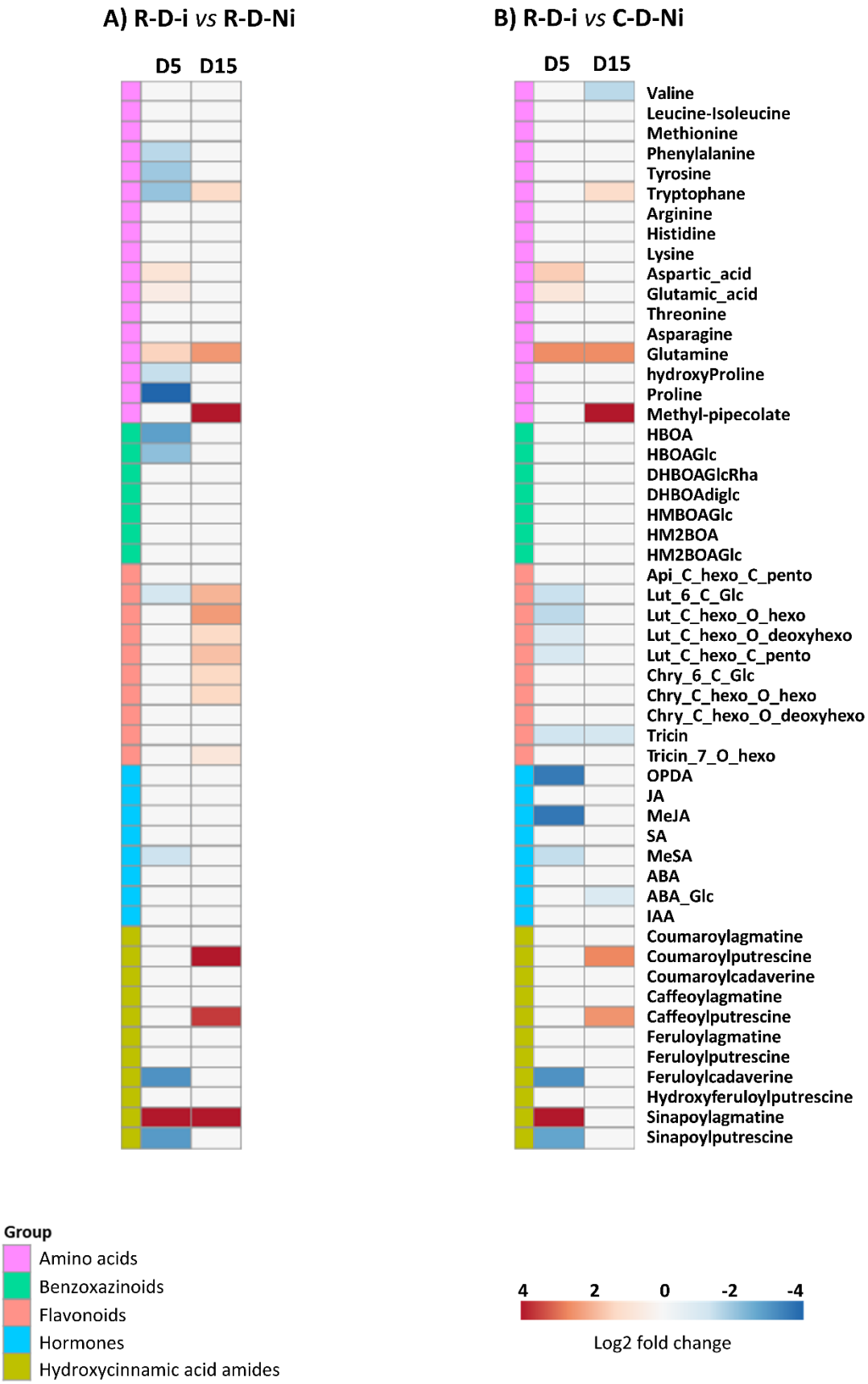


SUPPLEMENTARY FIGURE 1 | Venn diagram of the number of differentially expressed genes observed during the fungus effect (C-D5-i *vs* C-D5-Ni), the priming effect (R-D5-i vs C-D5-i) and the whole deregulation on gene expression caused by the rhamnolipid treatment followed by *Z. tritici* infection (R-D5-i *vs* C-D5-Ni) at five days after treatment. Wheat cultivar Alixan, *Z. tritici* T02596 strain and a rhamnolipid concentration of 500 $mg.L^{-1}$ were used. Abbreviations : C stands for a mock treatment while R is for Rh-Est-C12 application ; Ni relates to a mock inoculated wheat while i means inoculated plants with *Z. tritici* ; D5 indicates the sampling date of the third-leaves, corresponding to five days after treatment.



	A	B		
TA54418_4565			Cold acclimation protein WCOR413	Response to abiotic stress
U73211			Cold acclimation protein WCOR410c (Wcor410c)	
CA624093			Low temperature induced protein	
AF058794			COR39 (cor39)	
TA73273_4565			ATP-dependent RNA helicase	
TA84187_4565			Protein phosphatase type 2-C	
TA92949_4565			Efflux transporter, RND family, MFP subunit	
TA62230_4565			NAC transcription factor	
CF133748			Myb-related protein	
DQ286566			WRKY transcription factor (WRKY)	
TC421665			Transcription factor Myb2	
AY781354			DREB transcription factor 4A (DREB4)	
EF028787			CBFIVd-D22	
EF028785			CBFIVd-A22	
TC369712			Salt stress root protein RS1	
TC436852			Hly-III related proteins	
TA59927_4565			Monodehydroascorbate reductase	
TA59060_4565			22 kDa drought-inducible protein	
TA102260_4565			Nitrite reductase apoprotein	Response to oxidative stress
TC401354			Metallothionein-like protein type 3	
BQ161851			Peroxidase	
CK212695			Class III peroxidase 62 precursor	
TA61435_4565			Peroxidase 6	
TC384087			Glutathione S-transferase	
TA61129_4565			Glutathione transferase	
CA600821			Metallothioneine type2	
TC429241			Peptide methionine sulfoxide reductase	
TA51226_4565			Glutaredoxin	
TC426538			Chitinase 2	Response to pathogens
TA72415_4565			Chitinase	
TC442947			ENOD40-like protein	
EF570122			Pathogen-inducible transcription factor ERF3	
TA76681_4565			HS1-like protein	
TA57993_4565			MutT/nudix-like	
TA84120_4565			Protein EGG APPARATUS-1	Flowering and seed maturation
TC404192			AAA ATPase, central region (50.1 kD)-like protein	
TA70093_4565			U2AF small subunit	
TA86268_4565			CONSTANS interacting protein 5	
TA70788_4565			Dormancy/auxin associated protein	Growth and development
TA61980_4565			Abscisic stress ripening-like protein	
DQ435671			Alpha tubulin-1D (TUBA-1D)	
TC405303			Mitogen-activated protein kinase 7	
L27516			Wcs66	
TA61828_4565			Non-specific lipid-transfer protein	Cell wall structure and function
TA66611_4565			Fasciclin-like protein FLA15	
CK152333			Type 1 non specific lipid transfer protein precursor	
TA87087_4565			Cinnamyl alcohol dehydrogenase	
CK207368			Cellulose synthase BoCesA7	
TA77295_4565			3-ketoacyl-CoA synthase	
TA77906_4565			Hydroxyproline-rich glycoprotein-like	
TA60114_4565			UDP-D-xylose epimerase 2	
TA61116_4565			Non-specific lipid-transfer protein 4.3 precursor	
TA92734_4565			Diap1 protein	Chloroplast structure, light harvesting, carbohydrate metabolism
TC371150			Chlorophyll a/b-binding protein WCAB precursor	
CK217674			Chloroplast pigment-binding protein CP24	
TA55816_4565			Light-harvesting complex I	
TA61423_4565			Chloroplast pigment-binding protein CP24	
TA59583_4565			Light-regulated protein precursor	
EU492898			Ribulose-1,5-bisphosphate carboxylase	
TA70102_4565			Phosphoenolpyruvate carboxykinase	
TA91251_4565			Isoform ERG1b of A2WWV5	
TA52838_4565			Glycine rich protein	Amino acid metabolism
TC393988			Glycine/proline-rich protein	
TA69140_4565			L-allo-threonine aldolase-related protein	
TA69994_4565			Glutamate dehydrogenase	
TA82049_4565			Bifunctional aspartokinase/homoserine dehydrogenase 2	
TA67255_4565			Heat-shock protein precursor	Protein metabolism
HM209063			Heat shock protein 70-like (HSP70)	
TC391450			ATP-dependent Clp protease ATP-binding subunit	
JX104551			SNAP34	
TA53535_4565			Ubiquitin carrier protein	
TA58123_4565			Fatty acid desaturase	Lipid metabolism
TA87662_4565			Acyl-ACP thioesterase	
TA52495_4565			Lysophospholipase-like protein	
TA81385_4565			Phosphoenolpyruvate carboxylase	Signaling, transcription, translation, etc.
TA68843_4565			Exonuclease family protein	
TA54635_4565			EF-hand Ca2+-binding protein CCD1	
TA73684_4565			Serine/threonine protein kinase	
D16416			Zinc-finger protein WZF1	
AY881102			Putative MAPK protein kinase (MAPK1a)	
TA74203_4565			Receptor-like protein kinase	
TA85618_4565			DEAD-box ATP-dependent RNA helicase 26	
CA721206			Zinc finger protein 219	
EF040602			ZIM motif-containing protein	
TA51878_4565			Susceptibility homeodomain transciption factor	
TC389894			Tetratricopeptide repeat (TPR)-containing protein-like	

SUPPLEMENTARY FIGURE 2 | Heatmap representation of differentially expressed genes (DEGs) in (A) wheat leaves treated with Rh-Est-C12 and infected with *Z. tritici* compared to non-infected and treated leaves (R-D5-i *vs* R-D5-Ni), and (B) the whole response specter of DEGs in wheat leaves treated with Rh-Est-C12 and infected with *Z. tritici* compared to the non-treated and non-infected control plants (R-D5-i *vs* C-D5-Ni), at five days after treatment. Wheat cultivar Alixan, *Z. tritici* T02596 strain and a rhamnolipid concentration of 500 $mg.L^{-1}$ were used. Gene-related physiological processes are represented on the right part of the heatmap and were determined using NCBI, AmiGO 2 Gene Ontology, KEGG and UniProt. Significant relative change in gene transcription is expressed in Log2 ratio, according to the yellow-blue color scale, using the WebMev software. Abbreviations : C stands for a mock treatment while R is for Rh-Est-C12 application ; Ni relates to a mock inoculated wheat while i means inoculated plants with *Z. tritici* ; D5 indicates the sampling date of the third-leaves, corresponding to five days after treatment.


A) R-D-i vs R-D-Ni
D5
D15
B) R-D-i vs C-D-Ni
D5
D15
Valine
Leucine-Isoleucine
Methionine
Phenylalanine
Tyrosine
Tryptophane
Arginine
Histidine
Lysine
Aspartic_acid
Glutamic_acid
Threonine
Asparagine
Glutamine
hydroxyProline
Proline
Methyl-pipecolate
HBOA
HBOAGlc
DHBOAGlcRha
DHBOAdiglc
HMBOAGlc
HM2BOA
HM2BOAGlc
Api_C_hexo_C_pento
Lut_6_C_Glc
Lut_C_hexo_O_hexo
Lut_C_hexo_O_deoxyhexo
Lut_C_hexo_C_pento
Chry_6_C_Glc
Chry_C_hexo_O_hexo
Chry_C_hexo_O_deoxyhexo
Tricin
Tricin_7_O_hexo
OPDA
JA
MeJA
SA
MeSA
ABA
ABA_Glc
IAA
Coumaroylagmatine
Coumaroylputrescine
Coumaroylcadaverine
Caffeoylagmatine
Caffeoylputrescine
Feruloylagmatine
Feruloylputrescine
Feruloylcadaverine
Hydroxyferuloylputrescine
Sinapoylagmatine
Sinapoylputrescine
Group
Amino acids
Benzoxazinoids
Flavonoids
Hormones
Hydroxycinnamic acid amides
4
2
0
-2
-4
Log2 fold change

SUPPLEMENTARY FIGURE 3 | Heatmap representation of differentially expressed genes (DEGs) in (A) wheat leaves treated with Rh-Est-C12 and infected with *Z. tritici* compared to non-infected and treated leaves (R-D5-i *vs* R-D5-Ni), and (B) the whole response specter of DEGs in wheat leaves treated with Rh-Est-C12 and infected with *Z. tritici* compared to the non-treated and non-infected control plants (R-D5-i *vs* C-D5-Ni), at five days after treatment. Wheat cultivar Alixan, *Z. tritici* T02596 strain and a rhamnolipid concentration of 500 $mg.L^{-1}$ were used. Gene-related physiological processes are represented on the right part of the heatmap and were determined using NCBI, AmiGO 2 Gene Ontology, KEGG and UniProt. Significant relative change in gene transcription is expressed in Log2 ratio, according to the yellow-blue color scale, using the WebMev software. Abbreviations : C stands for a mock treatment while R is for Rh-Est-C12 application ; Ni relates to a mock inoculated wheat while i means inoculated plants with *Z. tritici* ; D5 indicates the sampling date of the third-leaves, corresponding to five days after treatment.