

Phylogenetic tree comparing gene expression profiles across two conditions: OG0000629\_253\_before (left) and OG0000629\_253\_after (right). The tree shows hierarchical clustering of genes based on their expression patterns.

The left side of the tree (OG0000629\_253\_before) displays a large number of genes, including GLY\_0051833, GLY\_0059346, GLY\_0062954, PHA\_0026700, LOC107605494, arharahy.Tifrunner.gnm1.Arahy.16g03794, ardaradu.V14167.gnm1.Aradu.A06g03409, arharahy.Tifrunner.gnm1.Arahy.06g03112, GLY\_0062951, GLY\_0062952, PHA\_0025640, PHA\_0025641, MED\_0000489, MED\_0000490, MED\_0000491, ASP\_0008456, MED\_0000493, MED\_0000494, MED\_0000495, GLY\_0051843, GLY\_0051844, PHA\_0029094, LOC107605492, arharahy.Tifrunner.gnm1.Arahy.16g03791, ardaradu.V14167.gnm1.Aradu.A06g03407, arharahy.Tifrunner.gnm1.Arahy.06g03109, LOC107606310, arharahy.Tifrunner.gnm1.Arahy.17g03513, ardaradu.V14167.gnm1.Aradu.A08g01002, arharahy.Tifrunner.gnm1.Arahy.08g01009, CEC\_0029730, CEC\_0029736, CEC\_0023646, POP\_0005077, POP\_0005078, HEL\_0032394, HEL\_0034527, HEL\_0052141, HEL\_0007421, HEL\_0034809, HEL\_0021165, HEL\_0040428, ARA\_0025363, CUC\_0030054, HEL\_0008141, HEL\_0013690, HEL\_0033326, HEL\_0019860, HEL\_0039150, HEL\_0039250, HEL\_0020574, HEL\_0038078, HEL\_0038661, HEL\_0039276, HEL\_0038437, HEL\_0039359, HEL\_0019073, HEL\_0040518, HEL\_0037524, HEL\_0019583, HEL\_0020165, HEL\_0022510, HEL\_0020683, DUN\_0009265, VIT\_0028197, VIT\_0025113, VIT\_0027486, ACT\_0008049, POP\_0007535, COF\_0020233, COF\_0020234, COF\_0020235, MIM\_0001650, CUC\_0022886, CUC\_0022887, GLY\_0022230, GLY\_0028496, PHA\_0001104, PHA\_0002177, MED\_0037811, ardaradu.V14167.gnm1.Aradu.A09g00591, arharahy.Tifrunner.gnm1.Arahy.09g00611, arharahy.Tifrunner.gnm1.Arahy.19g00717, LOC107618360, GLY\_0050150, GLY\_0053850, PHA\_0011071, PHA\_0011072, MED\_0010686, LOC107614361, arharahy.Tifrunner.gnm1.Arahy.18g00245, ardaradu.V14167.gnm1.Aradu.A08g01173, arharahy.Tifrunner.gnm1.Arahy.08g01196, CEC\_0031295, LOC107619609, arharahy.Tifrunner.gnm1.Arahy.19g00794, ardaradu.V14167.gnm1.Aradu.A09g00668, arharahy.Tifrunner.gnm1.Arahy.09g00681, MED\_0026924, MED\_0026925, CEC\_0030617, ACT\_0017530, ACT\_0026775, ACT\_0025405, COF\_0011421, VIT\_0029570, SOL\_0023980, SOL\_0032465, PRU\_0034162, PRU\_0034163, PRU\_0035034, ARA\_0015700, ARA\_0018089, ARA\_0009891, CUC\_0027722, CUC\_0027723, GLY\_0070991, GLY\_0070993, PHA\_0025988, GLY\_0009913, GLY\_0069704, MED\_0036206, MED\_0036207, LOC107647031, arharahy.Tifrunner.gnm1.Arahy.16g02177, arharahy.Tifrunner.gnm1.Arahy.18g00881, ardaradu.V14167.gnm1.Aradu.A06g02019, arharahy.Tifrunner.gnm1.Arahy.06g01993, arharahy.Tifrunner.gnm1.Arahy.18g00885, arharahy.Tifrunner.gnm1.Arahy.18g00886, PHA\_0024998, PHA\_0024999, GLY\_0035575, MED\_0002756, ardaradu.V14167.gnm1.Aradu.A02g03006, arharahy.Tifrunner.gnm1.Arahy.12g03356, LOC107628609, CEC\_0006191, POP\_0047556, POP\_0047557, POP\_0047558, POP\_0047968, POP\_0005944, SOL\_0017211, SOL\_0018535, SOL\_0017587, SOL\_0017914, SOL\_0007849, SOL\_0009682, SOL\_0017124, SOL\_0017177, COF\_0012542, COF\_0015232, MIM\_0021590, MIM\_0021730, MIM\_0020264, MIM\_0015428, COF\_0015233, COF\_0015235, COF\_0024050, HEL\_0003890, HEL\_0049739, HEL\_0031192, HEL\_0029611, HEL\_0017118, HEL\_0036377, ACT\_0000331, PRU\_0027988, PRU\_0028940, PRU\_0029815, PRU\_0030259, PRU\_0030260, VIT\_0003816, AQU\_0022621, AQU\_0029462, ARA\_0000740, ARA\_0020361, CUC\_0018743, BRA\_0045448, BRA\_0045449, BRA\_0045447, BRA\_0045450, ORY\_0024258, BRA\_0028228, ORY\_0005275, BRA\_0005690, ORY\_0020018, BRA\_0026471, ORY\_0007609, BRA\_0030563, BRA\_0030564, ORY\_0025712, ORY\_0025904, ORY\_0007504, BRA\_0024912, BRA\_0024914, BRA\_0024913, ORY\_0007525, ASP\_0018184, ASP\_0019305, ASP\_0027094, ASP\_0018715, ASP\_0019388, ASP\_0017141, ASP\_0017850, ASP\_0020111, BRA\_0032676, BRA\_0032677, ORY\_0013425, BRA\_0051119, LIR\_0018396, LIR\_0018397, LIR\_0018532, LIR\_0017706, LIR\_0018468, CIN\_0024327, CIN\_0027098, AMB\_0004265, AMB\_0009937, AMB\_0018687, NYM\_0038056, NYM\_0038057, NYM\_0012159, NYM\_0000367, NYM\_0029748, GIN\_0006035, GIN\_0019552, GIN\_0022717, GIN\_0024343, GIN\_0006876, CER\_0041443, CER\_0041444, CER\_0041446, CER\_0041445, CER\_0041447, CER\_0018754, CER\_0018755, CER\_0047628, CER\_0047630, CER\_0047631, CER\_0047627, CER\_0047629, MAR\_0008862, MAR\_0014257, DUN\_0000742, DUN\_0006043, DUN\_0006047, DUN\_0015143, DUN\_0016596, DUN\_0014701, CHL\_0018125, DUN\_0000344, CHL\_0018106.

The right side of the tree (OG0000629\_253\_after) displays a similar set of genes, including GLY\_0051833, GLY\_0059346, GLY\_0062954, PHA\_0026700, LOC107605494, arharahy.Tifrunner.gnm1.Arahy.16g03794, ardaradu.V14167.gnm1.Aradu.A06g03409, arharahy.Tifrunner.gnm1.Arahy.06g03112, GLY\_0062951, GLY\_0062952, PHA\_0025640, PHA\_0025641, MED\_0000493, MED\_0000494, MED\_0000495, MED\_0000489, MED\_0000490, MED\_0000491, GLY\_0051843, GLY\_0051844, PHA\_0029094, LOC107605492, arharahy.Tifrunner.gnm1.Arahy.16g03791, ardaradu.V14167.gnm1.Aradu.A06g03407, arharahy.Tifrunner.gnm1.Arahy.06g03109, LOC107606310, arharahy.Tifrunner.gnm1.Arahy.17g03513, ardaradu.V14167.gnm1.Aradu.A08g01002, arharahy.Tifrunner.gnm1.Arahy.08g01009, CEC\_0029730, CEC\_0029736, CEC\_0023646, POP\_0005077, POP\_0005078, HEL\_0032394, HEL\_0034527, HEL\_0052141, HEL\_0007421, HEL\_0034809, HEL\_0021165, HEL\_0040428, ARA\_0025363, CUC\_0030054, HEL\_0008141, HEL\_0013690, HEL\_0033326, HEL\_0019860, HEL\_0039150, HEL\_0039250, HEL\_0020574, HEL\_0038078, HEL\_0038661, HEL\_0039276, HEL\_0038437, HEL\_0039359, HEL\_0019073, HEL\_0040518, HEL\_0037524, HEL\_0019583, HEL\_0020165, HEL\_0022510, HEL\_0020683, VIT\_0025113, VIT\_0028197, VIT\_0027486, ACT\_0008049, POP\_0007535, COF\_0020233, COF\_0020234, COF\_0020235, MIM\_0001650, CUC\_0022886, CUC\_0022887, GLY\_0022230, GLY\_0028496, PHA\_0001104, PHA\_0002177, MED\_0037811, ardaradu.V14167.gnm1.Aradu.A09g0059