**Table S1.** Mutant and transgenic plants in jasmonates biosynthesis and signaling in rice

| Gene name | Name of mutant/ transgenic lines | RAP ID        | Function                                                                 | Reference         |
|-----------|---------------------------------|---------------|--------------------------------------------------------------------------|-------------------|
| OsHI-LOX  | oshiloxRNAi                      | Os08g0508800  | JA biosynthesis<br>Increases susceptibility to chewing herbivores, but enhances resistance to a phloem feeder when silenced. | [62]              |
| OsAOS1    | pre/cpm1 (precocious/coleoptile morphogenesis 1) | Os03g0767000  | JA biosynthesis<br>The pre/cpm1 plant has long leaves and elongated coleoptiles and mesocotyls, flowers approximately 5 days earlier with the flowers remaining open after flowering, and is partially sterile. | [32,33]          |
| OsAOC     | cpm2/hebiba (coleoptile morphogenesis 2) | Os03g0438100  | JA biosynthesis<br>The mutation in the OsAOC gene produces abnormalities in the spikelet architecture with elongated palea, sterile lemmas, additional bract-like organs, additional anthers and pistils, an early heading time, and elongated coleoptiles and mesocotyls. <br>Increases susceptibility to *Magnaporthe grisea*, the root-knot nematode *Meloidogyne graminicola*, the parasitic plant *Striga hermonthica*, and the generalist cucumber beetle *Diabrotica balteata* <br>Enhances drought and salt tolerance. | [29,30,60,70,76] |
| OsOPR7    | og1/acgl (open glume 1/unclose glume) | Os08g0459600  | JA biosynthesis<br>The mutation in OsOPR7 results in the lemma and palea not being able to fully close during anthesis and malformed, shiveled, and mildewed seeds within open glumes. | [34,35]          |
| OsJAR1    | osjar1                          | Os05g0586200  | Catalyzes the conjugation of JA and an amino acid <br>Loss of function of OsJAR1 and defects in husk closure and anther dehiscence. | [36]              |
| OsCYP94C2b| CYP94C2b_OE                     | Os12g0150200  | Catalyzes the conversion of JA-Ile into 12-OH-JA-Ile and 12-COOH-JA-Ile <br>Increases salt tolerance and increases internode length and plant height under normal conditions when overexpressed. | [106,107]        |
| OsJAZ1    | eg2 (extra glume 2)             | Os04g0653000  | Repressor in JA signaling<br>Increases floret number, culm length, and grain weight; reduces heading time and spikelet fertility; and enhances root growth when overexpressed. <br>Produces extra glume-like structures, alters floral organ numbers and identities, and increases root length when mutated. | [31,45,46]        |
| Gene  | OE          | QTL Name       | Description                                                                 | Reference |
|-------|-------------|----------------|-----------------------------------------------------------------------------|-----------|
| OsJAZ3| OsJAZ3_OE   | Os08g0428400   | Repressor in JA signaling: Increased number of organs in florets, aberrant patterns of organ formation, and repetitious organ production in spikelets when overexpressed in the dominant negative form. | [44]      |
| OsJAZ5| OsJAZ5_OE   | Os04g0395800   | Repressor in JA signaling: Increased floret number, culm length, and grain weight and reduced heading time and spikelet fertility when overexpressed. | [45]      |
| OsJAZ6| OsJAZ6_OE   | Os03g0402800   | Repressor in JA signaling: Increased floret number, culm length, and grain weight and reduced heading time and spikelet fertility when overexpressed. Increased number of organs in florets, aberrant patterns of organ formation, and repetitious organ production in spikelets when overexpressed in the dominant negative form. | [44,45]  |
| OsJAZ7| OsJAZ7_OE   | Os07g0615200   | Repressor in JA signaling: Increased floret number, culm length, grain weight, and heading time when overexpressed. Increased number of organs in florets, aberrant patterns of organ formation, and repetitious organ production in spikelets when overexpressed in the dominant negative form. | [44,45]  |
| OsJAZ8| OsJAZ8_OE   | Os09g0439200   | Repressor in JA signaling: Increased floret number and culm length; reduced heading time, spikelet fertility, and grain weight when overexpressed. Insensitive to JA treatment and loses JA-induced resistance to *Xanthomonas oryzae pv oryzae* when overexpressed in the dominant negative form. | [45,57]  |
| OsJAZ9| OsJAZ9_OE   | Os03g0180800   | Repressor in JA signaling: Increased floret number, culm length, and grain weight; reduced heading time and spikelet fertility and increased salt tolerance when overexpressed. Increases susceptibility to salt stress when mutated. | [10,45,102]|
| OsJAZ10| OsJAZ10_OE | Os03g0181100   | Repressor in JA signaling: Increased floret number, culm length, and grain weight; reduced heading time and spikelet fertility when overexpressed. | [45]      |
| OsJAZ11| OsJAZ11_OE | Os03g0180900   | Repressor in JA signaling: Increased floret number, culm length, and grain weight; a reduced number of days to flowering and spikelet fertility when overexpressed. | [44,45]  |
| Gene       | Description                                                                                                                                                                                                 | Reference(s)          |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| **OsJAZ12**| **Repressor in JA signaling** Increased number of organs in florets, aberrant patterns of organ formation, and repetitious organ production in spikelets when overexpressed in the dominant negative form. | [45]                  |
| **OsJAZ13**| **Repressor in JA signaling** Increased floret number; reduced number of days to flowering, grain weight, culm length, and spikelet fertility when overexpressed.                                               | [45]                  |
| **OsCOI1a**| **Receptor of JA-Ile** Increased plant height and grain length and increased susceptibility to the rice leaf folder (LF) *Cnaphalocrocis medinalis* and the *Rice black streaked dwarf virus* (RBSDV) when silenced. | [39,63,75–41]         |
| **OsCOI1b**| **Receptor of JA-Ile** Delays leaf senescence and reduces fertility and grain filling rate when mutated. Increases plant height and grain length and increases susceptibility to the *Rice black streaked dwarf virus* (RBSDV) when silenced. | [39,40,75]            |
| **OsNINJA1**| **Component of a corepressor complex and connects JAZ and NINJA proteins in JA signaling** Increases susceptibility to the bacterial blight disease caused by *Xanthomonas oryzae* pv *oryzae*, and delays leaf senescence when overexpressed. | [47]                  |
| **OsMYC2** | **Activator of a transcription factor in JA signaling** Regulates senescence-associated genes, inhibits seedling growth, and increases resistance to *Xanthomonas oryzae* pv *oryzae* when overexpressed. Reduces expression of JA-responsive genes when silenced. | [48, 53]              |
| **OsRSS3** | **RSS3’s function is required for root cell elongation and the control of root growth under salinity conditions. A loss of function of RSS3 moderately inhibits cell elongation under normal conditions, but it provokes spontaneous root cell swelling, accompanied by severe root growth inhibition, under saline conditions.** | [1056]                |