

Appendix S1. Various tissues of *Malus fusca*.

| Number | Complete description |
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| R1 | Flower bud, not including pedicel; sepals enclose flower bud; Field-grown trees |
| R2 | Pedicel; sepals enclose flower bud; Field-grown trees |
| R3 | Stem of inflorescence (rachis), not including pedicels; sepals enclose flower buds; Field- |
| R9 | Flower bud, not including pedicel; petals enclose remainder of flower bud; Field-grown |
| R10 | Pedicel; petals enclose remainder of flower bud; Field-grown trees |
| | Stem of inflorescence (rachis), not including pedicels; petals enclose remainder of flower |
| R11 | bud; Field-grown trees |
| R15 | Petal; petals enclose remainder of flower bud; Field-grown trees |
| R16 | Pistil; petals enclose remainder of flower bud; Field-grown trees |
| R17 | Receptacle; petals enclose remainder of flower bud; Field-grown trees |
| R18 | Sepal; petals enclose remainder of flower bud; Field-grown trees |
| R19 | Stamen; petals enclose remainder of flower bud; Field-grown trees |
| R25 | Stamen filament; flower is open; anthesis; Field-grown trees |
| R26 | Basal section of pistil; flower is open; anthesis; Field-grown trees |
| R27 | Petal; flower is open; anthesis; Field-grown trees |
| R29 | Trichome from pedicel; flower is open; anthesis; Field-grown trees |
| R30 | Sepal; flower is open; anthesis; Field-grown trees |
| R31 | Stigma; flower is open; anthesis; Field-grown trees |
| R32 | Style; flower is open; anthesis; Field-grown trees |
| | Leaves from several nodes along stem of one-year-old shoots, including vegetative nodes |
| | near the base and flowering nodes closer to apex; leaves subtending new shoot are mostly |
| R4 | expanded; Field-grown trees |
| | Petiole from leaves from several nodes along stem of one-year-old shoots, including |
| | vegetative nodes near the base and flowering nodes closer to the apex; leaves subtending |
| R5 | new shoot are mostly expanded; Field-grown trees |
| | Skin, including tissues to 0.5 mm depth, from internodes of one-year-old shoot; leaves |
| R6 | subtending new shoot are mostly expanded; Field-grown trees |
| | Apex of new shoot developing from axillary buds on 1-year-old shoots, includes leaves |
| R8 | <5 mm in length; new shoot has 1 visible leaf; Field-grown trees |
| | Leaf blades from several nodes along stem, including vegetative nodes near the base and |
| | flowering nodes closer to apex; not including midvein; leaves subtending new shoot are |
| R12 | fully expanded; Field-grown trees |
| | Midvein from leaves from several nodes along stem, including vegetative nodes near the |
| | base and flowering nodes closer to the apex; leaves subtending new shoot are fully |
| R13 | expanded; Field-grown trees |
| | Petiole from leaves from several nodes along stem, including vegetative nodes near the |
| | base and flowering nodes closer to the apex; leaves subtending new shoot are fully |
| R14 | expanded; Field-grown trees |
| R37 | Leaf, 1-5 mm from apex of new shoot; new shoot has 5-7 visible leaves; Field-grown |
| | Blade from more apical leaf of new shoot; leaf is ~ 1 week after emergence, new shoot |
| R44 | has 6-10 visible leaves; Field-grown trees |
| R33 | Leaf, 1-5 mm from apex of new shoot; new shoot has 3-5 visible leaves; Field-grown |
| R41 | Blade from more basal leaf of new shoot; new shoot has 6-10 visible leaves; Field-grown |
| R73 | Apical leaf; plants have 14-17 fully expanded leaves; Open-pollinated seedlings |
| R74 | Apical leaf; leaf is fully expanded; plants have a single fully expanded leaf; Open- |
| | Leaf, 1 to 5 mm in length from apex; plant has three fully expanded leaves; Open- |
| R78 | pollinated seedlings |
| | Leaf blade; leaf is mostly or fully expanded; plant has three fully expanded leaves; Open- |
| R82 | pollinated seedlings |
| | Apex of new shoot developing from axillary buds on 1-year-old shoots, includes leaves |
| R22 | <5 mm in length; new shoot has 2-3 visible leaves; Field-grown trees |

- Apex of new shoot developing from axillary buds on 1-year-old shoots, includes leaves <1 mm in length; new shoot has 3-5 visible leaves; Field-grown trees
- R24 Apex and axillary bud of new shoot, includes leaves <1 mm in length; new shoot has 5-7 visible leaves; Field-grown trees
- R34 Apex and axillary bud of new shoot, includes leaves <1 mm in length; new shoot has 6-10 visible leaves; Field-grown trees
- R38 Apex and axillary bud of new shoot, includes leaves <1 mm in length; new shoot has 8-12 visible leaves and is no longer actively growing; Field-grown trees
- R52 Apex and axillary bud of new shoot, includes leaves <1 mm in length; shoot has 8-12 leaves, nascent terminal bud; Field-grown trees
- R56 Apex and axillary bud of new shoot, includes leaves <1 mm in length; shoot is no longer actively growing, terminal bud with bud scales; Field-grown trees
- R60 Apex and axillary bud of new shoot, includes leaves <1 mm in length; shoot is no longer actively growing, terminal bud with bud scales; Field-grown trees
- R67 Shoot apex, includes leaves <1 mm in length; plants have 22-26 fully expanded leaves; Open-pollinated seedlings
- R70 Shoot apex, includes leaves <1 mm in length; leaf is fully expanded; plants have 35-40 fully expanded leaves; Open-pollinated seedlings
- R72 Shoot apex, includes leaves <1 mm in length; plant has three fully expanded leaves; Open-pollinated seedlings²
- R76 Main stem above cotyledon, includes petioles; plant has three fully expanded leaves; Open-pollinated seedlings
- R81 Fruit, minus seeds; fruit is 3-6 mm diameter, prior to floral organ abscission; Field-grown
- R35 Fruit, minus seeds; fruit is 5-8 mm diameter; Field-grown trees
- R40 Fruit, minus seeds; fruit is ~10 mm wide; Field-grown trees
- R49 Fruit, minus seeds; fruit is 10-12 mm length and width, green; Field-grown trees
- R54 Fruit, minus seeds; fruit is 11-12 mm length and width, green; Field-grown trees
- R58 Fruit, minus seeds and skin; fruit is 11-12 mm length and width, green and brown/purple sectors; Field-grown trees
- R63 Fruit skin, green; fruit is 11-12 mm length and width, green and brown/purple sectors; Field-grown trees
- R65 Fruit skin, purple; fruit is 11-12 mm length and width, green and brown/purple sectors; Field-grown trees
- R66 Fruit, minus seeds and skin; fruit is 11-12 mm length and width, green and brown/purple sectors; Field-grown trees
- R69 Seed; fruit is 3-6 mm diameter, prior to floral organ abscission, seeds < 2 mm length; Field-grown trees
- R36 Seed; seed is 2-3 mm length; Field-grown trees
- R42 Seed coat, including some endosperm; seed is ~5 mm length, white; Field-grown trees
- R51 Seed coat; seed is ~5 mm length, white; Field-grown trees
- R55 Seed coat; seed is ~6.5 mm length, brown; Field-grown trees
- R59 Seed coat; seed is ~6.5 mm length, brown; Field-grown trees
- R64 Embryo, dissected from seed; embryo is 1 mm or less in diameter; Field-grown trees
- R39 Embryo; embryo is ~3 mm length, opaque/white, starting to solidify, obvious cotyledons and radicle; Field-grown trees
- R48 Embryo; embryo is ~3 mm length, opaque/white, solid; Field-grown trees
- R53 Embryo; embryo is ~5 mm length, white, solid; Field-grown trees
- R57 Embryo; embryo is ~5 mm length, white, solid; Field-grown trees
- R62 Embryo; embryo is ~5 mm length, white, solid; Field-grown trees
- R68 Cotyledon; plant has three fully expanded leaves; Open-pollinated seedlings
- R20 Hypocotyl; plant has three fully expanded leaves; Open-pollinated seedlings
- R77 Root; plant has three fully expanded leaves; Open-pollinated seedlings
- R79

R80 Skin, including tissues to 0.5 mm depth, from shoot internodes; leaves subtending new shoot are fully expanded; Field-grown trees
