

Observations of Magnolia Leaf Hardness after the 20 Degree Frosts of October 15, 16, and 17, 1973

- M. denudata*, all clones - Browned but not dead. Normal dehiscence and drop.
M. macrophylla, Cumberland Falls clone - Immature leaves on bud browned - mature leaves completely unhurt. No change in appearance thawed.
M. tripetala - All leaves browned and killed.
M. fraseri - Leaves not browned. Slowly took on a nice mahogany autumn color.
M. pyramidata - Leaves hurt more than *fraseri*, but same reddish mahogany autumn color.
M. salicifolia - Absolutely unhurt. Leaves thawed dark green and look like midsummer.
M. kobus borealis - Unhurt, starting to fall naturally now. French clone dark green and 12" seedling from Merrill in L.O. garden fresh as a daisy.
M. liliflora 'Orchid' - Scarcely hurt. Browned much less than *denudata* or the *soulangiana* grex.
M. hypoleuca - Brown but not limp. Dropped.
M. virginiana - No change from pre-freeze.
M. dawsoniana - Devastated - leaves dead, thawed out brown and brittle, Dehiscence not normal. Cut juicy petioles to avoid tearing bark.
M. sprengeri 'Diva' - Leaves killed on grafted plants but plant near apartment window much less hurt, and a hardy seedling, fresh green. Shaded seedlings, under *kobus*, much less hurt than most, which would indicate sun on frozen leaves hurt them.
M. cylindrica grafts - Look dead. Buds dark. Seedling not hurt.
M. acuminata - Were turning color when freeze came on. No damage and leaves now falling normally. Not limp.
M. × 'Watsonii' - Leaves brown and drooping.
M. cordata - Browned more than *acuminata*, but seedlings in L.O. garden not hurt at all and thawed green. 'Honey Bee' clone about same as seedlings.
M. × 'Veitchii Rubra' - Not hurt, dropping normally.
M. × 'Veitchii' - Leaves browned.
M. × 'Veitchii' × denudata - U.S.D.A. slds. Leaves limp and wet.
M. stellata - Whites unhurt, 'Rubra' browned.
M. × loebneri clones - Not much hurt, but a little more damage than *kobus borealis*.

It is difficult to evaluate the above as an indication of hardiness, since *M. grandiflora* leaves are, of course, unhurt, and leaves were killed dead on superhardy trees like *M. tripetala* (and Cottonwood Poplar). The fact remains that in the subgenus *Yulania*, leaf damage followed the lines of known winter hardiness almost to the letter (exception was *M. liliflora* var. 'Orchid'), and also followed the lines of spring shoot hardiness to frost. In pruning *M. dawsoniana*, I noted brown pith on '71 wood, which was not evident on *M. sprengeri*.

*** P.J.S.