Quercus macrocarpa - Burr Oak or Mossycup Oak (Fagaceae)

**Quercus macrocarpa** is a massive shade tree that can tolerate prolonged drought and is native to the Eastern U.S. Burr Oak was planted extensively in the Great Plains during the 1800's as a fire resistant, drought tolerant, shade tree.

**FEATURES**

**Form**
- Large shade tree
- Maturing at about 70' tall x 60' wide under urban conditions, but much taller and wider in its native habitat
- Upright oval growth habit in youth, becoming rounded, spreading, and massive with age
- Slow to medium growth rate

**Culture**
- Full sun to partial sun (partial shade tolerant in youth)
- Performs best in full sun in moist or dry, neutral or alkaline pH soils, but is very urban tolerant (including tolerance to severe drought, pollution, high pH soils, poor soils, sandy soils, and compacted clay soils) and also adapts to acidic soils
- Propagated by seeds
- No serious diseases or pests
- Moderately available in B&B form
- Member of the White Oak group; some of these may hybridize freely in the wild, resulting in a blending of such traits as leaf shape and acorn caps

**Foliage**
- Alternate, dark green, strongly obovate, and deeply sinuate in the middle of the leaf blade, with about 3 pairs of lobes on the narrow lower one-third of the leaf and 5-7 pairs of sublobe lobes on the wide upper one-third of the leaf
- The large dark green leaf blade (about 10” long x 5” wide) is thick and leathery, having a lighter-colored underside that yields a more subtle bicolor in the breeze as compared to some other White Oak Group members, and is supported by a short yet stout petiole
- Overall leaf shape resembles a base fiddle or violin, but the detailed leaf structure (depth of sinuses and prominence/number of lobes) is quite variable, even on the same twig
- Autumn color is yellow-brown to yellowish green and usually poor

**Flowers**
- Yellow-brown pendulous male catkins are obvious and prominent in late Apr., but are ornamentally insignificant, as are the very small pistillate flowers

**Fruits**
- A huge (1.5” long) oval acorn with a thick cap that is fringed at the lower end, covering almost the entire nut (hence the common names of Burr Oak or Mossycup Oak), borne singly on a stout short peduncle, and maturing in a single season

**Twigs**
- Brown-gray, very stout and bold-textured, and often slightly corky after the first year

**Trunk**
- Gray, very deeply furrowed and grooved with age, with vertical, flattened, narrow ridges (up to 4” thick on very old trees) that primarily run parallel to each other, forming a very distinctive appearance and contributing to the very bold texture of mature trees

**USAGE**

**Function**
- Shade tree for large lawns, golf courses, parks, open fields, or naturalized areas, including areas that are very dry in the summer
- Valuable timber tree, with its wood prized for beams, boards, railroad ties, furniture, and floors

**Texture**
- Very bold texture in foliage and when bare
- Thick density in foliage but open density when bare

**Assets**
- Very urban tolerant (including extreme drought tolerance and alkaline soil tolerance)
- Very bold texture (in both summer and winter)
- Nuts attract wildlife (large birds, deer, squirrels)
- Very cold hardy

**Liabilities**
- Difficult to successfully transplant due to its coarse root system, including a deep tap root
- Relatively slow growth rate for a shade tree
- Autumn color is usually poor
- Significant fruit and leaf litter with age

**Habitat**
- Zones 2 to 8
- Native to the North and Central U.S.; adapted to the Great Plains (where its thick bark aids in survival during occasional prairie grass fires)

**SELECTIONS**

**Alternates**
- Trees of very bold texture (*Ailanthus altissima, Carya ovata, Ginkgo biloba, Gymnocladus dioicus, Juglans nigra, Quercus alba, Quercus prinus*, etc.)
- Trees for very dry sites (*Celtis occidentalis, Fraxinus pennsylvanica, Gleditsia triacanthos, Populus deltoides*, etc.)
- Shade trees capable of massive dimensions (*Acer saccharum, Carya ovata, Catalpa speciosa, Fraxinus americana, Ginkgo biloba, Liriodendron tulipifera, Populus deltoides, Quercus alba, Quercus rubra, Ulmus americana*)

**Cultivars – Variants – Related species**
- Straight species is the available form