



# Supporting Sustainable Management of Private Woodlands

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## Which Walnut Is It?

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I have walnut on my property, but I can't tell if they are black walnut or butternut. What's the difference? (Steve, WFL Chapter)

These species are common in some areas of NY, and have numerous positive attributes. It's not common to have both on the same property, though it is possible. Both are prized for the beauty of their wood, the utility of the walnuts they produce, and their stately appearance. Both have some serious health concerns.

Black walnut (*Juglans nigra*) and butternut, AKA white walnut (*Juglans cinerea*) are in the walnut family, related to the hickories (*Carya spp.*), and native to New York. The geographic range of butternut includes most of NY, except the higher elevations of the Adirondack and Catskill mountains. Black walnut occurs in the state, but more sporadically. It is most common in the Finger Lakes region and lower Hudson River, but also occurs in the St. Lawrence River valley.

In NY, the family Juglandaceae includes the walnuts and hickories. Both species of the walnut genus, as do all of the species of the hickory, have alternate leaves and branches. The leaves of both genera are pinnately compound (Figure 1), and the leaflets have serrate margins (the edge of the leaf or leaflet is the margin). The leaves are large, resulting in a corresponding large leaf scar. The vascular bundles are easily evident in the triangular shaped leaf scar, and arranged in three clusters. Both genera have a nut as a fruit, and the nut is enclosed in a husk. The bark of both genera is rugged, though with the walnuts it is ridged and furrowed. In the hickory genus, the bark is ridged and furrowed for some, but exfoliating plates for others like shagbark hickory.



Figure 1. All species in the walnut family, Juglandaceae, have pinnately compound leaves. Butternut, pictured, has 11 to 23 almost stemless leaflets.



Figure 2. Butternut pith (pictured) is darker than that of black walnut, and both are chambered.



Figure 3. The husks of black walnut (pictured) and butternut lack sutures or splits that are characteristic of the hickory genus.

There are several features that differentiate the walnuts from the hickories. The walnut leaves have more leaflets than the hickories. Walnuts will have 11 to 23 leaflets and the hickories will have 5 to 11 leaflets. The bark of the walnuts is softer, or corkier, allowing indentations with your thumbnail. The bark of hickory is hard and not easy to indent. The pith of walnut is chambered (Figure 2), meaning the center of the twig is essentially hollow, though sectioned every millimeter or so with a divider. The pith of hickory is solid, technically known as homogenous. Finally, the husk enclosing the nut on walnut is softer, the husk lacks sutures or “splits”, and the husk is odiferous when scraped, bruised or crushed; it will stain your hands and clothes (Figure 3). The husk of hickories is harder, and has sutures or splits with 4 sections.

There are several features that allow for easy differentiation of black walnut and butternut. Butternut has 11 to 17 almost stemless leaflets, the margins are serrate (which means toothed), and the leaf stalk is hairy where it meets the stem (Figure 4). Black walnut leaves have 13 to 23 usually hairless leaflets (Figure 5), but otherwise is similar to butternut. The terminal bud on butternut is elongated while the terminal bud on black walnut is almost as wide as long. Pith color on butternut is dark brown and pith color on black walnut is light brown. The bark of butternut is harder than black walnut, but both have a dark inner bark when sliced (Figure 6). Above the leaf scar on butternut is a light-colored fuzzy ridge, which is absent from black walnut. The nut of butternut is elongated, and the nut of black walnut is rounded (Figure 7). Both have edible meat in the nut.

Both species have highly valued and attractive wood, especially the heartwood. Black walnut is slightly darker and some butternut has “worm holes” that add to its character. The wood is relatively soft and easy to work. The BTU value of both species is low and they have limited value as firewood; butternut is not legal in NY to be included as “hardwood” firewood. Both species can be tapped for sap that is boiled into syrup that tastes similar to maple syrup. However, filtering of walnut syrup is complicated by high levels of pectin that clogs filters.

Butternut is afflicted throughout its range by a fungal disease known as butternut canker resulting in a disease syndrome known as butternut decline. The fungus is first apparent in lower branches, and subsequently cankers develop on branches and the stem throughout the



Figure 4. Butternut leaves are hairy, especially where the stalk (called a “rachis”) joins the stem.



Figure 6. A. The ridged and furrowed bark of butternut is dark, chocolate brown when sliced. B. The color is similar to that of black walnut, but butternut bark is denser and harder to slice.



Figure 5. Black walnut leaves are not as hairy as butternut, or hairless, and may have more leaflets than butternut. The number of leaflets is variable.



Figure 7. The nut (without the husk) of black walnut is round (left), and the nut of butternut is elongated (right). Both have delicious though difficult to extract nut meat.



Figure 8. Butter canker is affecting trees throughout the Northeast. Branches develop cankers, which then develop on the stem. The tree slowly declines, and the crown thins as fewer leaves are produced.

tree (Figure 8). Black walnut is susceptible to *Nectria* fungus, but has its greatest risk from thousand canker disease which is a fungus vectored by the walnut twig beetle. Thousands canker disease originated in the western states, but has spread east. It is not yet known from NY.

Both butternut and black walnut grow best on good soils, though black walnut is more restricted to especially fertile, deep and moist soils. Butternut performs better on soils that are dry, rocky or of limestone origin.

Regardless of the species, both butternut and black walnut are interesting and valued species. They have unique attributes that make them attractive and useful to humans and wildlife.

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For additional information on woodland management go to:  
[www.ForestConnect.com](http://www.ForestConnect.com) & [www.CornellForestConnect.ning.com](http://www.CornellForestConnect.ning.com)



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