

PROPAGATION PROTOCOL FOR

Wild Rice

(*Zizania palustris* L. [Poaceae])

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Wild rice has enormous importance to the Ojibwa people, as a food and for use in social and religious ceremonies. It is also an important food source to the Dakota Sioux, Winnebago, Meskwaki, Omaha, and Ponca (Moerman 1998). The indigenous word for wild rice is “Manoma” or “Manomin;” the Menominee of Wisconsin name literally means “Wild Rice People.”

For centuries, Native Americans harvested wild rice. Before the grain ripened, women in canoes would bend a group of stalks together and wrap the heads with bark strips. Once mature, grain was harvested by bending the long stalks over the canoe and shaking off the ripened grain with ricing sticks, and by cutting the bundled stalks for processing at camp. Because some rice was not fully ripened, wild rice was cured before storage by drying it in the sun

KEYWORDS: *Zizania palustris* L., Ojibwa, germination

NOMENCLATURE: ITIS (1998)

for a few days, drying it on racks above fire, or drying or parching the grains in a large metal kettle over a slow fire. In the later process, some grains would pop or break resulting in a flavor preferred by many.

Threshing, to remove the tough hull covering the grain, was traditionally work for men and boys. Treading on grain in shallow holes lined with a skin or filling barrels with grain and pounding it with a stick were common threshing methods. Hulls were winnowed by pouring the rice over a blanket and using a breeze or a birch bark fan. An intricate system of agitating shallow trays (similar to modern separators) was used by at least 1 tribe to remove chaff. Clean rice was put in bags made of skins or boxes made from cedar bark or fiber or birch bark (Densmore 1974). Wild rice was traditionally prepared in several ways. Often it was boiled and eaten plain or with maple sugar or used in soups and stews made from wild game or berries.

Upper Michigan, northern Wisconsin, and Minnesota east and north of the Mississippi River were the primary wild rice regions in the US (Hitchcock 1971). Today, wild rice is of economic importance. One major market is Grey Owl Foods,

a marketing organization owned by Native Americans from 72 reservations in Saskatchewan, Canada (NSWRDP 1999).

Seed Propagation

Wild rice seed requires 3 to 4 mo of storage in cold water 1 °C (34 °F) to break seed dormancy that is caused by a tough, impermeable pericarp covered by a wax layer, and an imbalance of growth promoters and inhibitors. Fresh seeds, however, can be germinated by carefully removing the pericarp from directly above the embryo and although these seeds cannot be planted directly, they can be germinated in water and the seedlings transplanted later.

Germination in natural stands starts when water temperatures reach 7 °C (45 °F), usually in late April and early May. In the natural germination sequence, dormancy is broken by cold and low oxygen levels in the mud over winter and germination begins when increased aeration occurs from water flow in spring. The primary root emerges 7 to 10 d after the emergence of the coleoptile. Usually, by 3 wk, seedlings have at least 3 true leaves without the waxy covering that is still submerged. These leaves eventually die, and 2 wax covered, floating



Wild rice (*Zizania palustris*).

leaves emerge 29 d after germination. Upright aerial leaves appear 10 d later and tillering begins after another 10 d (Oelke 1982).

Wild rice flowers in late July, and grain forms during August. Stands are harvested in late August and early September (Oelke 1982). The adventitious root system is shallow with a lateral spread up to 30 cm (12 in).

Up to 50 tillers per mature plant can be produced from the main stem and its tillers. Many tillers bear panicles. Wild rice requires from 106 to 130 d for maturation in north central

Minnesota, depending on the growing season and local variety. Many native varieties are recognized by Native Americans, each growing in its own niche of water depth, temperature, mud, and water quality (Oelke 1993).

Description, Distribution, and Habitat

Zizania palustris L. is a tall aquatic grass with culms 10 to 30 cm (4 to 12 in) tall and flat leaf blades 6 to 40 mm (0.25 to 1.5 in) wide. The inflorescence is an open panicle 20 to 50 cm (8 to 20 in) tall with many 10- to 15-mm-long (0.4 to 0.6 in) spikelets with a long awn. The grain is 2 or more times longer than Asian rice (*Oryza*).

Wild rice is found in wet meadows, marshes, and lake margins in water 0.9 to 2.4 m (3 to 8 ft) deep. It is common in most of southern

Canada east of the Rocky Mountains and the Great Lakes region of the US (Hitchcock 1971).

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