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Biomass production in Typha angustata (Aquatic macrophytes)

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Abstract
The Production on temperate condition in Typha species may exceed that of tropical swamps, however without venturing into the possibilities caused of higher standing crop and the rates of production in tropical and substrapical regions. Underground and Aboveground Biomass and their ratios at flowering time in different natural stands of Typha angustata near Agra, India ware studied in the field and experimentally over a periad of eleven months (June To April) The underground biomass was 40-50% of the aboveground biomass in both natural and experimental conditions.

Keywords: Typha angustata

Introduction
A comparison of biomass of below ground and aboveground parts of Typha angustata with other emergent species growing in different habitats reveals that Typha angustata also ranks among the most productive wetland species.
Biomass production of above ground parts of Typha angustata has been estimated for both undisturbed (Upstream, river, Yamuna and Keetham reservoir) and annually cut (downstream sites) stands, Typha are frequently eaten by wetland mammals such as muskrats, that also use them to construct feeding platforms and dens, providing nesting and resting pleas for waterfowl, all though Typha are native wetlend plants, they can be aggressive in their competition with other native species.
An introduced or hybrid species may be contributing to the problem control is difficult. The most successful strategy appears to be mowing or burning to remove the aerenchymous stalks, following by prolonged flooding.

Materials and Method
The emergent macrophyte have been investigated greater detail in temperate and some tropical regions. Primary production of emergent macrophytes is also higher in tropical and subtropical regions than in the temperate regions. A young stand of Typha angustata has been found to have the highest net production, Typha are considered dominant competitions in wetlands in many areas and they often exclude other plants with their densecanopy they are among the most abundant wetland plants. Different species of cattals are adapted to different water depths. Will developed aerenchyma make the plants tolerent of submerision. Leaves are glabrous (hairless), linear, altrenate and mostly based on a simple, jointless stem that bear the flower spikes. The plant monocious with unisexual flower that developed indense racemes. The numerous male flower from a narrow spike at the top of the vertical stem. Each male (staminate) and hairs and wethers once the pollen is shed. Large numbers of tiny female flower form a dense sausage shaped spike on the stem below the male spike.

Fig 1: Typha angustata

The biomass of belowground organs often, did not exceed 4500g/m^2 (Sharma and Gopal, 1977, Sharma and Pradhan, 1983, Saxena, 1986) [4] However, it was little higher (4800 g/m^2) in Typha angustata growing in the Srinagar (Kaul *et al*. 1972, 1978, Handoo and Kaul, 1982).
Biomass of both above ground and below ground parts of emergent macrophyte of temperate region such as *Typha angustifolia*, *Typha domingensis Typha glauca* and Typha latifolia ranged in between 1500- 4040g/m^2 and 500-6000 g/m^2 respectively. Above ground and below ground pars of undisturbed stand of Typha angustata ranging from 3188.9 to 5920 g/m^2 and 304.5 to 461.5 g/m^2 respectively. Gopal and Sharma (1977) also noted that annual cuttingof above ground shootsimprove growth behaviour in *Typha elephantina*.

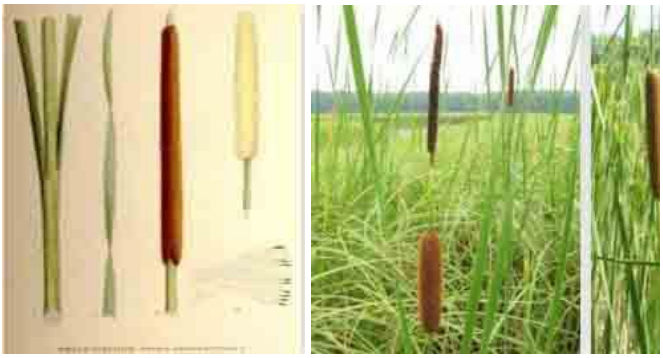

Fig 2: *Typha angustifolia*

A number of factors such as the water balance temperature nutrient plant density and chlorophyll concentration etc., affect the primary production in different environments. The studies in India and other tropical regions are too fragmentary. There are few investigations of the actual photosynthesis and respiration of fresh water macrophytes in tropics.
It can be safely said that a longer growth period is the most important factor. The plant growth occurs almost throughout the year.

Typhaceae

Typha angustata Bary et. chand	Apr.- May	WLH
Typha elephantina Roxb.	Jun- July	WLH

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Result

It belong to the family Typhaceae. A robust marh plant, up to 10 feet high. Leaves 8 feet ong 1/2 to an inch broad, semicylindric, above the sheath, acute; Male and female spikes separated by considerable interval, up to12inches long brown. Male flower paler and more slender. Pollens simple, Female flowers mixed with clavate sterile pistillodes. Bracteoles of female flowers subspathulata, equalling the linear stigmas, both longer than the hairs. The seeds are minute, 0.2 millimeters (0.008 in) long, and attached to fine hairs. When ripe the heads disintegrate in to a collony fluff from which the deeds disperse by wind.

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