

Author:  [ADVANCED](#)Volume  Page Keyword:    

[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1349-1008

PRINT ISSN : 1343-943X

**Plant Production Science**

Vol. 10 (2007) , No. 3 372-379

[\[PDF \(537K\)\]](#) [\[References\]](#)

## Variation in Growth and Yield Performance of Seventeen Water Chestnut Accessions (*Trapa* spp.) Collected from Asia and Europe

[Lalith Suriyagoda](#)<sup>1)</sup>, [Susumu Arima](#)<sup>2)</sup>, [Akihiro Suzuki](#)<sup>2)</sup> and [Md Aminul Hoque](#)<sup>3)</sup>

1) Faculty of Agriculture, University of Peradeniya

2) Faculty of Agriculture, Saga University

3) Department of Agronomy and Agricultural Extension, University of Rajshahi

(Received: July 26, 2006)

**Abstract:** Water chestnut is an aquatic annual herb, and its fresh, edible fruit is a valuable crop. The huge variation in growth and yield of water chestnuts has not been well documented. In this study, the yield performance of 17 water chestnut lines, eight from China (*Trapa acornis* L., *T. bicornis* L., *T. bispinosa* Roxb, *T. quadrispinosa* Roxb), one from France (*T. natans* L.), one from India (*T. bispinosa* Roxb.), three from Italy (*T. natans* L.), three from Japanese (*T. incisa* L., *T. japonica* Flerov, *T. natans*.L. var. *rubeola* Makino), and one from Korean (*T. japonica* Flerov.) were cultivated in Saga City, Japan during the summer, 2005, and the morphological characters of their fruit were analyzed. European lines were early flowering, but had a lower yield due to poor canopy density and lower rosette density. All the Asian lines had a higher rosette density. In spite of the smaller number of fruits per rosette, the Chinese lines had a higher yield than the other lines because the fruit was larger. The yield performance of the Indian line was similar to that of the Chinese lines. The Korean and Japanese lines produced a large number of small fruits per unit land area. Apart from the variation in fruit size, a huge variation in shape including the height, width and the spines were observed. Path analysis revealed that productive rosette number  $m^{-2}$  and the single fresh fruit weight are two direct yield determinants while number of fruits per rosette has indirect negative influence on yield via productive rosette number and single fruit weight.

**Keywords:** [Aquatic plant](#), [Paddy field cropping](#), [Trapa](#), [Water chestnut](#), [Yield](#)

To cite this article:

Lalith Suriyagoda, Susumu Arima, Akihiro Suzuki and Md Aminul Hoque: "Variation in Growth and Yield Performance of Seventeen Water Chestnut Accessions (*Trapa* spp.) Collected from Asia and Europe". *Plant Production Science*, Vol. **10**, pp.372-379 (2007) .

---

doi:10.1626/pps.10.372

JOI JST.JSTAGE/pps/10.372

Copyright (c) 2007 by The Crop Science Society of Japan

---



---

[Japan Science and Technology Information Aggregator, Electronic](#)

