

**EFFECT OF DIFFERENT DENSITIES OF  
*Isachne globosa* (Thunb.) O.Ktze ON GROWTH AND  
YIELD OF RICE**

A dissertation submitted to the  
Faculty of Animal Science and Export Agriculture of  
Uva Wellassa University  
in partial fulfillment of the requirements for the award of the degree of  
Bachelor of Science in Export Agriculture

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**2013**

## ABSTRACT

Weeds become a major constrain in rice production. *Isachne globosa*, is one of the troublesome weed which is difficult-to-manage. Very little information is available on how these species compete with paddy. Therefore, it is important to identify the interspecies competition between paddy and *Isachne globosa*. The effect of weed can be managed by identifying the corresponding weed density. In present study, the growth of *Oryza sativa* (L.) and yield components were observed under different densities of *I. globosa*. Experiment was conducted at Rice Research and Development Institute, Batalagoda, Sri Lanka during 'Yala' season, 2013, as a pot experiment. Complete randomized design (CRD) was used with eight density levels as 0 plants/m<sup>2</sup>, 22 plants/m<sup>2</sup>, 43 plants/m<sup>2</sup>, 65 plants/m<sup>2</sup>, 86 plants/m<sup>2</sup>, 108 plants/m<sup>2</sup>, 129 plants/m<sup>2</sup>, 151 plants/m<sup>2</sup> of *I. globosa* which are containing three replicates.

At the vegetative stage, height of the rice plants, number of leaves per plant, number of tillers per plant and dry weight of plants were reduced by the competition of *I. globosa*. Growth parameters were significant for interaction effect of weed density and the time duration. The weed dry matter accumulation was significantly increased with the weed density. The interspecies competition was significantly started after fourth week of plant growth. Weed density was critically affected on growth parameter where density above 43 plants/m<sup>2</sup>. Weed competition was negatively affected on yield parameters such as number of panicles per square meter, number of spikelet per panicle, grain filling percentage, thousand grain weight and grain yield. Highest yield reduction (45.57%) was observed in 151 *I. globosa* plants/m<sup>2</sup>.

**Key words:** *Isachne globosa*, interspecies competition, yield parameters