

Effect of Growth Media on Vegetative Growth and Flowering of *Rumex vesicarius*, L. (Hommaidh)

Abdul-Wasea A. Asrar

Plant Production Department, College of Food and Agriculture Sciences, King Saud University, P.O. Box 2460 Riyadh 11451, Saudi Arabia

Received on : 2/8/2009

Accepted : 10/12/2009

ABSTRACT

The agricultural soil is very important factor that affect the growth of ornamental plants and flowers because of the great relationship between the soil and plant growth. Therefore, six different soil types and media were used for growing hommaidh or sorrel (*Rumex vesicarius*, L.). The present study was conducted to investigate the best growth in the different soil types and media during two seasons (2007/2008). The soil types and media were : silty loam, sand, silty loam + sand, silty loam + peatmoss, silty loam + sand + peatmoss and peatmoss + perlite. Each medium was prepared by adding an equal volume of each ingredient in the mix. The recorded data were : plant height, stem diameter, number of main branches, number of sub-main branches, number of leaves per plant, number of nodes per plant, leaf area (cm²), root length, fresh and dry weights of plant and number of inflorescences per plant. The most significant effect was obtained by the mixture of peatmoss and perlite.

Keyword: *Rumex vesicarius*, *Polygonaceae*, *Hommaidh*, *Soil types*, *Growth media*

INTRODUCTION

Rumex vesicarius, L. is a winter annual commonly called the sorrels or hommaidh. The genus *Rumex* belongs to the family *Polygonaceae*. In western Europe, the genus *Rumex* contains mostly perennial herbs but also some annuals grow in widely different habitat types: from shallow river edges to calcareous lakes, in woodland and on open places as well as on different soil types. The species which belong to the genus are supposed to be evolutionary related and similar traits and life-histories are expected. Any difference in ecological responses among the species might indicate possible adaptations to the occupied habitat. In the life cycle of plants with sexual reproduction, the germination process is a key stage, each species can germinate and establish seedlings in a characteristic set of conditions, called " safe life " or regeneration niche. A comparison of the germination requirements of related species may show how the germination process is adapted to habitat conditions and how it regulated environmental factors (Jozef, et al. 2002).

Most of the introduced flowering ornamental plants do not adapt well to the harsh conditions of the local climate in the Arab Peninsula. On the other hand, the natural flora of the region is rich in beautiful plants with high potential for ornamental uses. One of these indigenous plants is *Rumex vesicarius* L., which is locally known as " hommaidh". It is a wild annual herbaceous plant (Migahid, 1978 and Mark, 1994), which is found in most of Saudi Arabia regions and especially in Eastern Najd. The plant has attractive leaves and

attractive racemes with flowers that turn into winged beautiful fruits of reddish to pink and yellowish orange colours (Migahid, 1978). The process of seed germination is affected by several factors, notably water, the temperature, light and oxygen. Different availability of any of these factors with the different soil types used for the cultivation of seeds and growth. Soil development can be divided into two main kinds: natural soil and artificial soil.

Due to the lack of studies on the vulnerability of the environmental factors such as soil type on growth of *Rumex vesicarius*, there is a need to study the impact of using a variety of soil mixtures on the rate and intensity of the growth of plants to determine the appropriate environment for plants with a distinct vegetative growth, thick with beautiful and numerous flowers to be used for cultivation and decoration as new promising plants in a mixture of different soil environments in the parks, streets as well as the different landscapes.

Dilraj et al. (2001) studied the germination of *Rumex spinosus* in pots containing sand, silt loam or clay to determine the effect of different growth media in the germination of the weed. The fruits initiation was lesser in sandy loam soils. Plant height, number of primary branches and leaves per plant, as well as the number of branches per plant were highest in plants sown in sandy loam soil. Mansour and Hussein (2002) found that the growth of some kinds of Sudanese grass in sand resulted in less plant height, fresh and dry weight compared to those only planted in the mud or a mixture of sand and silt by 1: 1. Henderson (2000) mentioned that