



University of Zabol  
Graduate school  
Faculty of Agriculture  
Department of Horticultural Sciences

**The Thesis Submitted for the Degree of M. Sc (in the field  
of Production of greenhouse products)**

**Evalue of the effect of biofertilizer  
pretreatment and culture medium on  
germination and seedling  
developmetal indices of two Papaya  
cultivars**

**Supervisor**  
Dr. M. Aran

**Advisor**  
Dr. A. R. Rahimian Booger

**By**  
A. Najm

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## **Abstract**

Papaya (*Carica papaya* L.) is an important garden crop in tropical and subtropical regions, which is often consumed fresh. In order to investigate the pretreatment of papaya seeds by biofertilizers and also the type of growing medium in the production of two varieties of papaya, a factorial experiment was conducted in the form of a completely randomized design with 3 replications in the research greenhouse of Zabol University. The test treatments include varieties in 2 levels (Red Lady and Bangladeshi), seed pretreatment in 4 levels (distilled water, mycorrhiza, seaweed extract and humic acid) and culture medium in 5 levels (superbiocompost + perlite + vermicompost, superbiocompost + perlite + cocopeat, superbiocompost + vermicompost + cocopeat, perlite + vermicompost + cocopeat and superbiocompost + perlite + vermicompost + cocopeat). The results showed that the Red Lady variety in perlite + vermicompost + cocopeat cultivation medium in terms of leaf number (7/72), stem diameter (3/28 mm), seedling height (21/94 cm) and total carbohydrate (123/10 mg) was superior in grams of leaf fresh weight. Red Lady cultivar with seaweed extract pretreatment had the lowest germination period (3/07) and the highest germination index (6/87) and germination value (24/46). Also, the Red Lady variety in perlite + vermicompost + cocopeat and seaweed extract pretreatment has the highest germination rate (120/83), seed germination (31/81), leaf area (61 cm<sup>2</sup>), root length (9/99 cm), Fresh weight of the whole plant (4/99 g), fresh weight of the root (0/87 g), fresh weight of the stem (4/12 g), dry weight of the whole plant (0/42 g), dry weight of the roots (0/11 g), stem dry weight (0/32 g), chlorophyll a (1/86 mg/g leaf wet weight), chlorophyll b (1/80 mg/g leaf wet weight) and total chlorophyll (3/67 mg/g leaf wet weight) had the highest values. The results of this research showed that the cultivar Red Lady improved the germination, growth and biochemical characteristics of papaya seedlings in perlite + vermicompost + cocopeat culture medium and seaweed extract pretreatment.

**Key words: papaya, priming, seaweed extract, biofertilizers**