**Organic Liquid Fertilizer from Moringa Leaf (*Moringa Oliefera*) Extract and Onion Peel (*Allium Cepa* L.) Extract for Increased Plant Growth and Disease Control**

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**Abstract**

Plant-based extractions have been habitually used by farmers and have been reported to greatly impact on crop yield and improved pathogenic tolerance. *Moringa oliefera* is a tropical plant with numerous benefits. Moringa leaf extract contains growth regulators; cytokinin, zeatin, and minerals such as K, Ca, and Fe which can accelerate plant growth. Red large onion (*Allium cepa* L.) is one of the most popular consumed vegetable in the human diet. Onion peels contain approximately 234 mg of potassium per bulb, the most significant nutrient utilized as fertilizer for plants though onion peels throw away as kitchen waste and are a good source of minerals like Ca, Mg, Zn, and Fe. Red onions contain phytochemicals like flavonoids. The presence of flavonoids gives the action of antiviral and antimicrobial activities. In the preparation process of fertilizer, onion peels are soaked in water (100g/ 1L) for 48 hours and blended to obtain a liquid solution. Moringa leaf extract is obtained by grinding Moringa leaves mixed with a liquid onion peel solution. An amount of 25ml of the solution is applied to plants at any growth stage. According to the observations, this liquid fertilizer has been showing propitious effects against major bacterial diseases in the early stage such as bacterial blight and bacterial leaf spot. Also, this liquid fertilizer is effective in controlling pests such as beetles, aphids, and thrips. This organic liquid fertilizer is a good alternative for high-cost, inorganic fertilizers as well as a promising solution for poor resource farmers.

*Key words: Moringa leaf extract, Onion peel solution, Organic liquid fertilizer*



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