ABSTRACT

Onion is a horticultural commodity that has many benefits. The demand for onions that continues to increase from year to year and the increase in population growth can be overcome by opening up new land for agriculture, one of which is the use of Ultisol soil with the help of the use of organic and inorganic fertilizers. This study aimed to determine the effect of organic and inorganic fertilizers to increase Calcium-exchangeable, Magnesium-exchangeable, C-Organic, Base Saturation and onion nutrient uptake and onion yield on Ultisol soil. Experimental Farm, Faculty of Agriculture, Malikussaleh University from February to April 2024. This research used a single-factor group randomized design method consisting of 5 treatments and 3 replications. The observation parameters were wet stalk weight, dry stalk weight, tuber weight (tons/ha) and number of tubers. Crab shell could increase Calcium-exchangeable by 3.52%. Cow manure+crab shell+solid inorganic compound fertilizer could increase Magnesium-exchangeable 0.03% and base saturation by 20.71%. Cow manure could increase C-organic by 1.64% and crab shell could increase calcium uptake by 0.40%. Cow manure could increase the weight of wet stems by 21.96%, the weight of dry stems by 22.27%, the weight of bulbs (ton/ha) by 4.78% and the number of onion bulbs by 5.8%.

Keywords*:* *Calcium-exchangeable, Crab shell, Magnesium-exchangeable.*