

EFFECTS OF LIQUID FERTILIZER CONTAINING 5-AMINOLEVULINIC ACID ON THICKENING GROWTH IN TULIP BULBS

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We have developed a functional foliar liquid-fertilizer Pentakeep-V (PKV), including 5-aminolevulinic acid (0.3%) and micronutrients. In this experiment, we examined the promotive effects of this PKV on thickening of seed bulbs in tulip plants grown under field conditions. The PKV was applied as a foliar spray at 1:2000 and 1:5000 dilutions respectively, at the flowering stage. The solutions were sprayed at least 6 times prior to harvesting time. For seed-bulbs in the 6 cm size class, PKV increased the numbers of 7 and 9 cm of bulb size compared to the controls. Treating seed-bulbs in the 8 cm size-class resulted in increased numbers of bulbs in the 9 and 10 cm size classes. Foliar application of the 1:2000 solution significantly increased the thickening growth and the multiplication rate of seed bulbs in tulip. Results from this study indicate that the foliar applications of PKV at the flowering stage are very useful for improving thickening and multiplication of seed-bulbs in tulip.