

氮素对大葱产量影响和氮素供应目标值的研究

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Study on the effect of nitrogen on green Chinese onion yield and N supplying target value

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摘要 在山东省章丘大葱高产地块,设置不同氮肥处理,研究了施肥对章丘长白大葱产量的影响以及该条件下土壤氮素平衡。结果表明,在磷、钾肥供应充足的前提下,随氮肥用量增加大葱的产量逐渐增加,增产率在37.2%~60.1%;当氮肥用量为360.kg/hm²时,产量接近最高。随着氮肥用量的增加,土壤的残留Nmin量增加。6个处理土壤中残留N分别为42.82、55.24、67.62、91.91、123.72和219.22.kg/hm²。在大葱的整个生长季,土壤有机氮表现矿化量为N.35.11.kg/hm²,有机肥净矿化量为N.43.51.kg/hm²。在大葱缓苗越冬期、旺盛生长期和假茎充实期,氮素的供应目标值分别为38.05、196.20和233.22.kg/hm²,表明在本试验条件下大葱氮肥后移,对提高大葱产量和氮肥利用率都具有重要意义。虽然本试验中大葱氮肥利用率较低,仅为12.72%~35.36%,但单位氮素投入所获得的收益很高。施氮量为120.kg/hm²时,每投资1元钱的氮肥可获得23.91元的收益,即使施氮量达到480.kg/hm²时,氮肥的产投比也达到9.05元。

关键词: 大葱 产量 氮素供应目标值 有机氮矿化 大葱 产量 氮素供应目标值 有机氮矿化

Abstract: An experiment was conducted in Zhangqiu county of Shandong province, which is a famous region for green Chinese onion production. The experiment had 6 N treatments to study its effect on green Chinese onion yield and N supplying target value. Green Chinese onion yield increased with N fertilizer rate when enough P and K fertilizers were applied. The increment was 37.2%~60.08%. The yield was highest at N 360 kg/ha. The residue N in soil increased also with increasing N application rate. The amount of surplus N of the 6 treatments in soil was 42.82, 55.24, 67.62, 91.91, 123.72 and 219.22 kg/ha, separately, presenting a serious concern for underground water pollution. The amount of apparent mineral N of soil and apparent mineral N of the organic manure were 35.11 and 43.51 kg/ha during all stage of green Chinese onion. Recovery of N fertilizer was 12.72%-35.36%. The output/input of N fertilizer was 23.91 for treatment MN1 and 9.05 for treatment MN4. The N supplying target values were N 38.05, 196.20 and 233.22 kg/ha in slow growth stage, fast growth stage and cauloid inflating stage, respectively. It is very important to pay attention to yield, quality, environment and profit for green Chinese onion fertilization.

Keywords:

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