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Effect of green manure crops treatments on the soil conditions and corn yield production**Kang Bo Shim, Min Tae Kim, Sung Gook Kim, Kun Ho Jung, Chung Guk Kim, Jae Un Lee and Young Up Kwon**
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This study was conducted to find optimum mixed sowing ratio of green manure crops to improve the chemical soil condition as well as to increase the crop yield potential which will foster the utilization of green manure crops in the upland field in view of environment friendly agriculture. According to the study, the mixed ratio, 50:50, of hairy vetch and green barley showed highest nitrogen production yield, 17.2 kg per 10a, in the soil due to the relatively higher organic nitrogen supply from the hairy vetch plant as well as nitrogen fixation from the air rather than other mixed ratio. Otherwise, other soil chemical conditions, such as pH, EC, Av. P_2O_3 and exchangeable cations, showed different results depending on the mixed sowing ratio of green manure crops. In case of pH, the mixed ratio, 100:0, treatment showed to increase to 7.0 from 6.0 of control (chemical fertilizer treatment). Available P_2O_3 amount showed highest at the mixed ratio, 100:0, treatment as 453 mg/kg. We also conducted the experiment to compare the effect of the mixed sowing treatment of green manure crops on the production of corn cultivated as a succeeding plant of green manure crops. The mixed ratio, 50:50, of hairy vetch and green barley treatment showed highest yield potential of corn as 153 kg per 10a in seed weight which is due to the relatively higher organic nitrogen supply from the hairy vetch plant as well as nitrogen fixation from the air rather than other mixed ratio. In the mixed sowing treatment of hairy vetch 100 and barley 0 ratio, the corn production showed 148 kg per 10a which is 5 kg lower than that of hairy vetch 50 and barley 50 ratio, but showed statistically no difference between those two treatment. Therefore, we found that green manure crops, such as hairy vetch, green barley and rye were very effective crops to improve the soil fertility and gave the positive effect to the crop cultivation and, in turn, increased the yield potential.

Biography

Kang Bo Shim has completed his PhD from Seoul National University. He is a Senior Researcher of Crop Cultivation & Environment Research Division, National Institute of Crop Science, Rural Development Administration at South Korea. He has published more than 20 papers.

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