

The Effect of Soil Textures on the Flowering characteristics and Green Manure Yield of Crimson Clover (*Trifolium incarnatum* L.) in Upland Soil

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ABSTRACT

Crimson clover, a legume crop, is a landscape crop and green manure crop that can be sowing in spring and autumn. Its red flower blooms in May, and serves various roles such as landscape composition, weeds suppressing, prevention of soil loss and nutrient on sloping land and supplying nitrogen and organic matter in soil. Thus, in order to utilize this crop in agriculture land, we evaluated the growth characteristics of crimson clover cultivated in four different soil textures, sand, sandy loam, loam, and clay loam.

The nitrogen content of crimson clover was 15.8 g kg⁻¹ and C/N rate was 20.3. Its growth was good in sandy loam and loam. Its plant height was 42.5 cm in sandy loam and 49.5 cm in loamy, respectively, which are approximately 20 cm longer than the sand and clay loam. The crimson clover in sandy loam and loam bloomed about seven days earlier than those in sand and clay loam. Regarding number of flower per hill and flower length, there were no difference between soil textures. Dry weight of crimson clover was 2.5 Mg ha⁻¹, 2.3 Mg ha⁻¹ each in sandy loam and loam. Therefore, it was approximately 0.8 ~ 1.1 Mg ha⁻¹ higher than dry weight of sand and sandy loam. Plant height and dry weight of crimson clover was increased late harvest time. Nitrogen contribution were higher in loam and clay loam, when it was respectively 51.3 kg ha⁻¹, 53.5 kg ha⁻¹. Therefore, according to flowering properties and dry weight, the growth and development of crimson clover was finest in sandy loam and loam.

Keywords: Crimson clover, Soil texture, Paddy soil, Green manure, Flowering characteristics

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