

植物生产层

播种方式对紫花苜蓿+无芒雀麦草地土壤碳密度和组分的影响

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摘要:

2007年在内蒙古民族大学农学院试验农场以种植2年的单播紫花苜蓿(Medicago sativa)、单播无芒雀麦(Bromus innermis)、隔行混播和同行混播人工草地为研究对象,采用分层取样法研究了不同播种方式对土壤有机碳密度及氧化稳定性的影响。结果表明:在牧草生长时期,土壤有机碳密度以隔行混播草地最大,为11.59 t/hm²,其次为单播紫花苜蓿草地,二者显著高于单播无芒雀麦草地、同行混播草地(P<0.01);氧化稳定系数,隔行混播草地最大(1.28),同行混播草地次之(1.16),二者亦显著(P<0.05)高于单播紫花苜蓿草地(1.00)、单播无芒雀麦草地(0.85);表明混播有利于土壤有机碳的稳定,且隔行混播较之同行混播更有利于土壤有机碳的积累。

关键词: 紫花苜蓿; 无芒雀麦; 隔行混播; 同行混播

Effects of sowing methods on soil carbon density and composition in the alfalfa and Bromus inermis pasture

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Abstract:

A experiment was conducted to investigate the soil organic carbon density and oxidative stability coefficient among four grasslands by multi layer sampling method, including two year alfalfa single pasture, Bromus innermis single pasture, interlacing mixture pasture of alfalfa and B. innermis, and inline mixture pasture of alfalfa and B. innermis. This study indicated that the soil organic carbon density was the biggest with the 11.59 t/hm² in the interlacing mixture pasture of alfalfa and B. innermis, and was the second in the alfalfa single pasture during the growth season. The soil organic carbon density in the interlacing mixture pasture of alfalfa and B. innermis and alfalfa single pasture was significantly greater than that in the B. innermis single pasture and inline mixture pasture of alfalfa and B. innermis (P<0.01). The highest oxidative stability coefficient was found in the interlaced mixture pasture of alfalfa and B. innermis with 1.28 and the oxidative stability coefficient was 1.16 in the inline mixture pasture of alfalfa and B. innermis. The oxidative stability coefficient of alfalfa single pasture and B. innermis single pasture were 1.00 and 0.85, respectively. This study implied that Mixed sowing was the better for the stabilization of soil organic matter and interlacing mixture method was better than inline mixture method.

Keywords: alfalfa Bromus inermis interlaced mixture inline mixture

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