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## 前植物生产层

### 林草复合系统的生态学及经济学效益评价

王红柳, 岳征文, 卢欣石

#### 摘要:

综合分析和评价了啤特果树*Pyrus ussuriensis*-紫花苜蓿*Medicago sativa*、啤特果树-小麦*Triticum aestivum* 两种复合系统的生态学效应和经济效益。结果表明: 啤特果树-紫花苜蓿复合系统和啤特果树-小麦复合系统的土壤容重分别为1.39和1.45 g/cm<sup>3</sup>。啤特果树-紫花苜蓿复合系统中非毛管孔隙度(4.72%)和总孔隙度(58.96%)均大于啤特果树-小麦复合系统中非毛管孔隙度(4.15%)和总孔隙度(50.80%), 说明林下种植紫花苜蓿较种植小麦更有利于疏松土壤、改良土壤结构; 啤特果树-紫花苜蓿复合系统的不同土壤层土壤含水量均大于啤特果树-小麦复合系统的土壤含水量, 说明林下紫花苜蓿比小麦的保水蓄水能力强; 紫花苜蓿和小麦的茎叶持水率分别为37.3%和25.8%, 说明林下紫花苜蓿更能减少地表径流, 从而减轻水土流失; 紫花苜蓿比小麦更能有效地缓解地面温度的激增和激减; 种植紫花苜蓿比种粮食作物多收入3 900~8 850元/hm<sup>2</sup>。因此林下种植紫花苜蓿较种植小麦具有显著的生态效益和经济效益。

关键词: 复合农林业; 啤特果树-紫花苜蓿复合系统; 生态学效应; 经济效益

### An analysis of economic benefit and social effect of Pi Te apple alfalfa complex ecosystem

WANG Hong-Liu-, YUE Zheng-Wen, LU Xin-Shi

#### Abstract:

The objective of this research was to compare the ecologic and economic benefit of Pi Te apple (*Pyrus ussuriensis*)-alfalfa (*Medicago sativa*) and wheat (*Triticum aestivum*)-alfalfa complex ecosystem in Linxia, Gansu Province. Soil bulk density was 1.39 and 1.45 g/cm<sup>3</sup>, non capillary porosity was 4.72% and 4.15%, and overall porosity was 58.96% and 50.80%, respectively. Soil holding water capacity in the first ecosystem was higher than that in the second. Water holding rate in leaves stems of alfalfa and wheat was 37.3% and 25.8%. Income in the first ecosystem was more than the second. These indicate M.alfalfa are more beneficial to the soil conservation and economic development than wheat in the apple ecosystems.

Keywords: agri forestry *Pyrus ussuriensis*-*Medicago sativa* complex ecosystem ecologic benefit economicd benefit

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