

Dilfuza Djumaeva

ZEF – Ecology and Development Series No. 84

The effect of phosphorus amendments on nitrogen fixation and growth of trees on salt-affected croplands in the lower reaches of Amu Darya, Uzbekistan

The expansion of irrigated agriculture in Central Asia has contributed to cropland degradation as evidenced by widespread high soil salinity and low soil fertility. Afforestation with fast-growing, nitrogen-fixing trees is an ecologically friendly reclamation of such croplands. How to best grow nitrogen-fixing trees was investigated in Khorezm, Uzbekistan. Phosphorus fertilization enhanced nitrogen fixation by ca. 80%, increased tree growth rates and raised leaf nitrogen content of nitrogen-fixers by 24% and thus the fodder value. Measurements with a chlorophyll meter (SPAD-502) allowed assessing the leaf crude protein content and consequently foliage quality throughout growing seasons; it can be used for effectively optimizing feeding times.