عنوان مقاله:

Applying Cobb–Douglas production function to model CO۲ emissions of chickpea production under dry farming system in Paveh county, Iran

محل انتشار:

یازدهمین کنگره ملی سراسری فناوریهای نوین در حوزه توسعه پایدار ایران (سال: 1400)

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خلاصه مقاله:

This study examines CO۲ emissions of inputs in chickpea production under dry farming system, and to find relationship between CO۲ emitter inputs and yield in Paveh county, Iran. For this purpose, ۱۲۵ chickpea producers under dry farming system has been investigated for data collecting. Standard coefficients were used to calculate the CO۲ emissions and Cobb-Douglas production function was applied to model CO۲ emitter inputs and chickpea yield. Based on the results, total CO۲ emissions during production process of chickpea under dry farming system was ۲۴۲.۴۷ kg CO۲ eq. per ha and diesel fuel with ۲۹% was the most significant CO۲ emitter inputs among all. After that, pesticides with ۱۱% has the second rank. Moreover, CO۲ ratio was also about ۰.۴۸ that showed per kg of chickpea yield about ۰.۴۸ kg CO۲ eq. was emitted. Econometric results revealed that diesel fuel with elasticity ۱.۳۸ in ۱% and machinery with elasticity ۰.۹۱ in ۵% were the most effective CO۲ emitter inputs. In model analysis can be said R۲ about ۰.۹۴ indicated the acceptable accuracy of model and also, Durbin-Watson test with ۱.۹۶ illustrated that there are not any autocorrelation between variables.

کلمات کلیدی:

Chickpea, CO۲ emission, Cobb-Douglas, Dry farming, Modeling