

## عنوان مقاله:

Evaluation of the Benefits of Oat-Soybean and Oat-Groundnut Intercropping in Jilin Province, China

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## خلاصه مقاله:

Evaluation of the Benefits of Oat-Soybean and Oat-Groundnut Intercropping in Jilin Province, China Yong, Yang\* and Mohammad hesam Shahrajabian<sup>۲</sup> ۱- Hami melon research center, Xinjiang Academy of Agricultural Sciences ۲- Assistant ProfessorSenior Researcher- Faculty of Agriculture- Islamic Azad University, Isfahan (Khorasgan) Branch, Isfahan, Iran \* Corresponding author email: yangyongsj@gmail.com Received: ۷ April ۲۰۱۷ Accepted: ۲۴ June ۲۰۱۷ Abstract

Mixing species in cropping systems may lead to a range of benefits that are expressed on various space and time scales from a short-term increase in crop yield to long-term increase in sustainable production of foods. In order to determine the benefits of two intercropping systems, oat-soybean and oat-groundnut, an experiment was conducted in research station of Baicheng Academy of Agricultural Sciences in ۲۰۱۱, Jilin province, China. A randomized complete block design with four replications was used. Treatments comprised different mono cropping and intercropping patterns, TO: sole cropping of oat, TOS-O: oat in the intercropping of oat and soybean, TOG-O: oat in the intercropping of oat and groundnut, TS: sole cropping of soybean, TOS-S: soybean in intercropping of oat and soybean, TG: sole cropping of groundnut, TOG-G: groundnut in the intercropping of oat and groundnut. No nitrogen fertilizer was used in this research. The highest seed yield was obtained for mono-cropping of soybean, followed by mono-cropping of groundnut and oat. Oat seed yields in intercropping of oat and groundnut, and intercropping of oat and soybean were ۱۲۰۸.۰۰ kg/ha, and ۸۳۲.۳ kg/ha, respectively. The highest grain yield was obtained when soybean was grown together with oat, where the higher yield of intercrop is due to the better usage of nutrient, water and light. Land equivalent ratio (LER) in all intercropping patterns were higher than ۱. LER in intercropping of soybean and oat, and intercropping of groundnut and oat were ۱.۴۱, and ۱.۳۰, respectively. With these LER values, ۲۹.۰۷% and ۲۳.۰۷% of land were respectively saved in intercropping of soybean and oat, and intercropping of groundnut and oat, respectively, which could be used for other agricultural purposes. In both intercropping of soybean and oat, and intercropping of groundnut and oat, completion index (CI) were less than ۱, which means that both these two intercropping patterns ... .have positive effects. Keywords: Oat, Soybean, Groundnut, Intercropping

## کلمات کلیدی:

Keywords: Oat, soybean, Groundnut, Intercropping

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