



**Science  
Societies**

# **Replacing Summer Fallow With Field Pea in Western Nebraska**

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*Chemical summer fallow plot (left) next to a field pea plot in Sidney, NE, in 2018 during the first half of the crop sequence comparison in a wheat-based dryland cropping system.  
Photo by Samuel Koeshall.*

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Chemical summer fallow is a common practice across the semi-arid High Plains in dryland wheat systems. However, it can lead to degraded soil fertility, dependence upon urea, or reduced precipitation use efficiency. Field pea can be a complimentary crop to wheat that can mitigate potential long-term issues while reducing economic uncertainty for farmers. Although pea can be cultivated in western Nebraska, there have been no site-specific studies comparing fallow to pea in a wheat-based system.

To address this question, a team of researchers conducted a field study comparing summer fallow to pea for three site-years. They measured soil fertility and soil water content over time along with pea and wheat yields. In a recent article in *Agronomy Journal*, the team reported that wheat yields were not reduced with the addition of pea in two of three site-years. Also, across three pricing models, the pea-wheat system increased net profits or reduced net losses compared with fallow-wheat in five out of nine comparisons.

This study shows that farmers in this region would benefit by replacing fallow with pea as a risk management tool to buffer variable wheat markets and access the growing pulse crop market.

Adapted from Koeshall, S.T., Easterly, A.C., Werle, R., Stepanovic, S., & Creech, C.F. (2022). Replacing fallow with field pea in wheat production systems across western Nebraska. *Agronomy Journal*, 114, 3329–3346. <https://doi.org/10.1002/agj2.21194>

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