Cropping sequence effect of wheat after dry pea harvested as forage and grain. (C03-miller102011-Oral)

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Abstract:

The productivity of spring wheat was compared in sequence after three crops (pea, mustard and spring wheat) managed in four ways; early termination (with and without forage removal) and grain harvest (with and without straw removal) preceding spring wheat. Where neither soil water nor N limited spring wheat yield, spring wheat yields were equal following all crop stubble treatments, except grain yield was reduced 30% when following spring wheat that was grown to maturity due to localized disease. Where soil water limited spring wheat yield, spring wheat yields varied from 35% following mustard harvested as grain to 85% following pea terminated at the early bloom stage, compared with that on chem fallow. Early termination of spring pea resulted in >49 mm greater soil water, compared to that under spring wheat harvested as grain. Where soil N limited spring wheat yield, grain N yield for wheat following the pea treatments averaged 10 kg ha-1 greater ($P<0.01$) than after the wheat or mustard treatments. Pea was concluded to be a valuable rotational crop in sequence with wheat due to N contribution and conservative soil water use. Early termination of pea (forage removal or green fallow) increased soil N and minimized water use compared to mature pea.

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