**Fitting Cover crops in Dryland systems**

**Background:** Cropping system diversification with cover crops can provide several benefits. These include improving soil quality, nutrient cycling, weeds and pest suppression, and reduce wind erosion. Cover crop adoption is not widely popular in water-limited environments because cover crops utilize water that otherwise would be available to the subsequent cash crop. Utilizing cover crops for forage can provide economic benefits and help offset loss in revenue associated with decrease in wheat yields when cover crops are grown in place of fallow.

**Fig. 1. Cover crop options in dryland crop production systems**
Cover crops have very good forage production potential

Figure 2. Cover crop biomass before and after grazing near Marquette, KS in 2018-2019 and 2019-2020 growing seasons.

Figure 3. Spring planted cover crop biomass near Brownell, KS.
Figure 4. Soil bulk density measured after grazing of cover crops in spring 2019 near Marquette, KS.

Fig. 5. Soil bulk density measured after grazing of cover crops in spring 2020 near Marquette, KS.
Fig. 6. Figure 4. Mean weight diameter of soil aggregates as affected by cover crop treatments in spring 2020 near Marquette, KS.

Fig. 7. Mean weight diameter influenced by cover crop management in spring 2020 near Hays, KS.
Fig. 7. Soil residue cover measured in August 2020 after cover crop termination and before winter wheat planting near Brownell, KS.

Fig. 8. Crop residue at wheat planting near Brownell, KS.

Fig. 7. Soil organic carbon content measured in 2020 after cover crops near Marquette, KS.
Fig. 8. Cover crop management effect on mean weight diameter (MWD, mm) of water stable aggregates from the 0- to 5-cm soil depth in 2019 (A.) and 2020 (B.) near Brownell, KS.

†Means with the same letter are not significantly different (α =0.05) among cover crop treatments.