1. Sericea lespedeza control on rangeland

Sericea lespedeza is a state-wide noxious weed in Kansas and therefore needs to be controlled. Sericea lespedeza has a tremendous seed bank potential that helps reestablish stands.

Although June is the preferred month to treat sericea lespedeza with certain herbicides, good control can still be obtained during the first couple weeks of July. Hot weather and advancing maturity will reduce control of sericea using herbicides until the plants start to bloom in August and September.

Remedy Ultra (triclopyr) and PastureGard (triclopyr + fluroxypyr) can provide effective control when applied during early July when the sericea plants are still in a vegetative growth stage. Broadcast applications of Remedy Ultra at 1 to 1.5 pints/acre and PastureGard at 2 pints/acre should be applied in spray volumes of 10 to 20 gallons/acre.

Products containing metsulfuron, such as Escort XP, Cimarron Plus, and Chaparral are generally more effective in the late summer when sericea lespedeza is actively blooming. Recommended rates are 0.5 oz/acre of Escort XP, 0.625 oz/acre Cimarron Plus, and 2.5-3 oz/acre Chaparral.

For spot application, mix 1 fl. oz. PastureGard per gallon of water, use a 1% solution of Remedy Ultra in water, 0.3 grams Escort XP per gallon of water, or 0.7 grams Chaparral per gallon of water. Addition of a dye will help you see what plants have already been treated. Aerial applications of these products should be done with a minimum spray volume of 3 gallons per acre. Higher spray volumes, e.g. 5 gallons per acre, will generally be more effective.

Areas that contain sericea lespedeza and have been hayed can be sprayed with herbicides about 4-6 weeks after harvest. Likewise, herbicides sprayed after grazing can provide good control of sericea lespedeza.
Herbicide treatments will need to be repeated every 2 to 4 years to keep this invasive species in check. Initial treatments should reduce dense stands to the point where spot treatment can be used in future years. Left untreated, sericea lespedeza will dominate a site, greatly reducing forage production and species diversity.

Sericea lespedeza in late vegetative growth stage. Photo by Walt Fick, K-State Research and Extension.

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2. Reclaiming flooded land: Woody debris

When flood water recedes, a landowner may find that some new “organic matter” has been deposited on the field, but in the form of woody debris, which may cause some problem in future field operations.

This woody debris can easily be up to 2 to 3 inches in diameter, or more. In many cases, the debris will be too scattered to burn.

The main risks of woody debris include damage to harvest equipment and during planting operations. Larger diameter branches (>3”) will not readily decompose and might wedge into the planter units, and short logs could pose a hazard to combines.

Some possible solutions include the following:
* Residue managers or row cleaners on the planter might be able to move the smaller debris out of the way. Take the planter to the field as early as possible to test whether or not it can open and close the furrow without plugging repeatedly. Strip-tillage equipment may also be able to move woody debris out of the row.

* Flood-deposited debris is often oriented in one direction, so it might be possible to plant the rows in a direction parallel to the flood debris.

* If it is not at all practical to pick up the residue manually, a harrow or drag could be used to collect or windrow the debris into piles for collecting later, or perhaps burning in place.

* If none of this is workable or attractive, some type of cutting tillage (e.g. disk) may be the only alternative.

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3. Factors to consider before burning wheat residue

Many producers may be planning to burn their wheat stubble this summer to help control volunteer plants, weeds, and certain diseases. While burning is inexpensive, producers should understand the true value of residue ahead of time. Some of the information below comes from K-State Extension publication MF-2604, The Value of Crop Residue.

There are four main factors to consider.

**Loss of nutrients**

The products of burned wheat stubble are gases and ash. Nutrients such as nitrogen (N) and sulfur (S) are largely combustion products, while phosphorus (P) and potassium (K) remain in the ash. When residue is burned, about a third of the N and S will volatilize. The nutrients in the ash may remain for use by the plants, if it doesn’t blow away first. Therefore, instead of cycling these important plant nutrients back into the soil, they can essentially become air pollutants when the residue is burned.

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Amounts present in 5,000 lbs of wheat straw</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>27.0</td>
</tr>
<tr>
<td>P₂O₅</td>
<td>7.5</td>
</tr>
<tr>
<td>K₂O</td>
<td>37.5</td>
</tr>
<tr>
<td>S</td>
<td>5.0</td>
</tr>
</tbody>
</table>

**Protection from soil erosion**

Bare soil is subject to wind and water erosion. Without residue, the soil will receive the full impact of raindrops, thus increasing the amount of soil particles that may become detached during a rainfall event. Bare, tilled soils can lose up to 30 tons per acre topsoil annually. In no-till or Conservation Reserve Program (CRP) systems where residue is left, annual soil losses are
often less than 1 ton per acre. The detachment of soil particles can lead to crusting of the soil surface, which then contributes to greater amounts of sediment-laden runoff, and thus, reduced water infiltration and hotter, drier soils.

Leaving residue on the field also increases surface roughness, which decreases the risk of both wind and water erosion. Most agricultural soils in Kansas have a “T” value, or tolerable amount of soil loss, of between 4 and 5 tons per acre per year, which is about equal to the thickness of a dime. To prevent water erosion, 30% ground cover or greater may be needed to reduce water erosion to “T” or less, especially in fields without erosion-control structures such as terraces.

Standing stubble is more effective at preventing wind erosion than flat stubble.

**Moisture infiltration rates and conservation**

Wheat residue enhances soil moisture by increasing rainfall infiltration into the soil. Residues physically protect the soil surface and keep it receptive to water movement into and through the soil surface. Without physical protection, water and soil will run off the surface more quickly.

Ponded infiltration rates were measured at Hesston in September 2007. Very low infiltration rates (1.9 mm/hr) were observed for continuous winter wheat in which the residue was burned each year prior to disking and planting the following crop. In contrast, high infiltration rates (13.3 mm/hr) were observed for a no-till wheat/grain sorghum rotation.

Another way residue increases soil moisture is by reducing evaporation rates. Evaporation rates can decline dramatically when the soil is protected with residue. Residue blocks solar radiation from the sun and keeps the soil surface cooler.

**Soil quality concerns**

Over time, the continued burning of cropland could significantly degrade soil organic matter levels. By continually burning residue, soil organic matter is not allowed to rebuild. Soil organic matter is beneficial for plant growth as it contributes to water holding capacity and cation exchange capacity. Soil organic matter binds soil particles into aggregates, which increases porosity and soil structure and thus, increases water infiltration and decreases the potential for soil erosion. One burn, however, will not significantly reduce the organic matter content of a soil.

If producers do choose to burn their wheat stubble, timing is important. It’s best to burn as late as possible, close to the time when the next crop is planted. This minimizes the time that the field will be without residue cover and vulnerable to erosion. Before choosing to burn residue, producers should check with the USDA Natural Resources Conservation Service and/or the Farm Service Agency to find out if this will affect their compliance in any conservation programs.

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4. Gray leaf spot alert

Gray leaf spot is building rapidly in many corn fields in northeast and north central Kansas. Rains earlier in June have allowed the disease to gain a foothold in the lower canopy and it is beginning to move upward in some fields. One field in Pottawatomie County had lesions on the ear leaf, and pollination had not begun yet.

As a reminder, gray leaf spot lesions tend to be rectangular. Early lesions are small, necrotic spots with chlorotic haloes that gradually expand to fullsized lesions. Expanding lesions are initially tan and later turn gray on the underside of the leaf during moist conditions as the fungus begins to sporulate.

![Gray leaf spot of corn.](image)

*Photos by Doug Jardine, K-State Research and Extension.*
A spray calculator to assist in fungicide application decisions is available on the K-State Department of Agricultural Economics Agmanager.info web site at: http://www.agmanager.info/crops/prodecon/decision/CropSpray.swf.

Producers can put in their numbers to determine whether or not a fungicide application would be profitable. As an example, the following parameters could be entered in the spread sheet:

Yield potential = 200 bu  
Yield response to spraying = 10% 
Price = $3.25 
Chemical and application costs = $23.00 
Net benefit = $39.20

In the above example, a yield response of 3.7% is needed to break even. Many fields that are planted to more resistant hybrids, especially when rotation and tillage are used, probably would not reach the breakeven level.

Products containing both a strobiluron and a triazole mode of action work well. Those currently registered in Kansas include Headline AMP, Quilt, Quilt Xcel and Stratego.

From: K-State Plant Disease Alert, June 30, 2010 http://www.plantpath.kstate.edu

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5. Comparative Vegetation Condition Report: June 13 – 29

K-State’s Ecology and Agriculture Spatial Analysis Laboratory (EASAL) produces weekly Vegetation Condition Report maps. The most recent VCR maps from EASAL are below:
Map 1. The Vegetation Condition Report for June 13 - 29, from K-State’s Ecology and Agriculture Spatial Analysis Laboratory shows that vegetative conditions continue to be greener than the long-term average. In particular, northwest Kansas, despite lower-than-normal rainfall in June, has better-than-normal production rates. Part of this is due to the late spring, and slower-than-usual plant progress.
Map 2. The U.S. Corn Belt comparison to the 21-year average shows that there has been continued rapid crop progress in the Ohio River Valley. Rapid plant development is also seen in the western High Plains, despite lower-than-average rainfall. The eastern High Plains, particularly in western North Dakota and Eastern Minnesota, are lagging behind usual progress where heavy rains continued to produce flood problems.
Map 3. During this period, the favorable weather patterns can be seen across much of the lower 48 states. Areas of Minnesota and eastern North Dakota have seen some improvement, but still lag behind normal production.

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These e-Updates are a regular weekly item from K-State Extension Agronomy and Steve Watson, Agronomy e-Update Editor. All of the Research and Extension faculty in Agronomy will be involved as sources from time to time. If you have any questions or suggestions for topics you'd like to have us address in this weekly update, contact Steve Watson, 785-532-7105 swatson@ksu.edu, or Jim Shroyer, Research and Extension Crop Production Specialist and State Extension Agronomy Leader 785-532-0397 jshroyer@ksu.edu