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**A LITTLE BIT COUNTRY
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Mixtures or Rotations?

Herbicide mixtures appear to be more effective than rotations in slowing the evolution of herbicide resistance, according to a report in *Weed Technology*. Herbicide rotation is now the most common form of herbicide resistance management practice among farmers. Although herbicide mixture is common, there are obstacles to its becoming as common as rotation. The authors of this report conducted a four-year study to determine which method more readily slows herbicide resistance evolution.

From 2004 to 2007, two sites of field pennycress co-occurring with wheat in Saskatchewan were treated with an acetolactate synthase (ALS) inhibitor and bromoxynil/MCPA. Treatments consisted of either a mixture of the two compounds or a rotation of them. For the rotation treatment, by the end of four years the level of resistance of recruited seedlings had increased from 29 percent to 85 percent. For the mixture treatment, by the end of four years the level of resistance was similar to that of the nontreated control.

It is hoped that the findings in this study will encourage the herbicide industry to research and develop a broader range of herbicide mixtures to support what farmer surveys and modeling simulations already indicate: mixtures are the superior method for slowing evolution of resistance to herbicides.

Hackberry Suggested

The two most popular and adaptable trees for this area are no longer recommended for new plantings. For several decades now the beautiful American elm has

been attacked by a fungus disease spread by a beetle. Now the hardy ash tree is being threatened by a boring bark beetle.

People in this area have a strong desire to plant trees, so they ask "What do you recommend in place of American Elm and green ash?" The first tree which comes to mind is the common hackberry. It has a good form and can get quite tall making it a good shade tree. It is probably the best choice for our area where few trees prosper. It can be found in the Midwest and Plains states and as far north in Manitoba and south to Georgia and Oklahoma.

Common hackberry is not a perfect tree. Its form can approach that of a beautiful American elm, but sometimes it can develop into a craggy specimen. However, I do not know of another deciduous tree that can survive our winds and cold weather as common hackberry. Its drought resistance is not that of green ash, but it should do very well in well drained soils where supplemental water is available.

Some folks are not attracted to its light to medium green foliage and the nipple galls often found on the leaves.

If you choose to go with a common hackberry tree, consider the Oahe variety, This was released by USDA-ARS Great Plains Research Station at Mandan and NRCS Plant Materials Center near Bismarck.