September 2023

Agriculture and Natural Resources

University of Kentucky | Martin-Gatton College of Agriculture, Food and Environment

A Message From Your ANR Agent:

This time of year, things are starting to slow down for many farmers and gardeners. There are some important things that need to be done. This is the time of year I prefer to do soil tests. This time of year is perfect for making pH adjustments. Pike county is different from other counties; parts of the county test traditional mountain soil and parts test almost identical to the bluegrass. You cannot tell by looking at it. You must do a soil test. Simply take a few slices of the soil about 1" thick and down to the depth of the shovel. Mix your samples in a plastic bucket. Mix well. Then bring me about a sandwich baggie full. Tell me what you wish to grow. It normally takes about 2 weeks to get the test back.

A second really important thing to do this time of year is landscape and garden sanitation. You can prevent a lot of problems next year by cleaning and sanitizing this fall. Check your calendar. One thing I preach is keeping everything you do with your animals or in the garden on a calendar. It is a method of keeping records that should be easy for everyone to do. Keep it near where you work and write everything you do down. It will make next years decisions much easier and save a lot of time. It will tell you what you did and when to plan for it in 2024. Absolutely clean up the landscape and garden!

I included an article on wildfire preparedness. We always have fire problems due to people burning off their gardens or weedy areas. With all the problems on the news in Hawaii I thought it might be something for you to think about.

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Inside this issue:

UK COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF KENTUCKY — COLLEGE OF AGRICULTURE

Taking Soil Test Samples

W.O. Thom, G.J. Schwab, L.W. Murdock, and F.J. Sikora

The most important part of making fertilizer recommendations is collecting a good, representative soil sample. Soil test results and fertilizer recommendations are based solely on the few ounces of soil submitted to the laboratory for analysis. These few ounces can represent several million pounds of soil in the field. If this sample does not reflect actual soil conditions, the results can be misleading and lead to costly over- or under-fertilization. It is necessary to make sure that the soil sample sent to the laboratory accurately represents the area sampled.

Sample Timing

Soil samples can be collected through much of the year, although fall (September to December) or spring (February to April) are the best times. Fall sampling will often result in a faster return of results and recommendations. Fall sampling will also allow the grower time to have the fertilizer applied well before planting the next crop. However, fall sampling results in lower pH and soil test K levels when conditions are dry. In either case, a field should always be sampled the same time of the year in order to make historical comparisons.

Most fields should be sampled every three to four years. High-value crops, such as tobacco, commercial horticultural crops, alfalfa, red clover, and corn silage, should be sampled annually so that plant nutrient levels can be monitored more closely. Application of manure can change soil test phosphorus, potassium, and zinc levels dramatically, so sampling manured fields each year is also recommended.

Tools You Need

A soil probe, auger, garden trowel, or a spade and knife are all the tools you need to take the individual cores that will make up the "field" sample (Figure 1). You will also need a clean, dry, plastic bucket to collect and mix the sample cores. Be sure not to use galvanized or rubber buckets because they will contaminate the sample with zinc. Soil sample boxes or bags and information forms for submitting samples are available at all county Extension offices.

Collecting Field Crop Samples

An individual sample should represent no more than 20 acres except when soils, past management, and cropping history are quite uniform. The most representative sample can be obtained from a large field by sampling smaller areas on the basis of soil type, cropping history, erosion, or past management practices (Figure 2). For example, a portion of a field may have a history of manure application or tobacco production while the other part does not. Phosphorus and potassium levels will likely be higher in these areas, causing the rest of the field to be under-fertilized if the field is sampled as one

Figure 1. A soil probe, auger, or spade and knife should be used in sampling soils. The spade sample must be trimmed as shown.

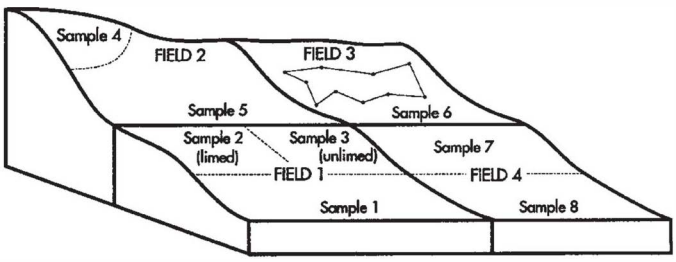

Figure 2. This shows how four fields might require the analysis of one to three composite samples for determining fertility needs. Each composite must contain 10 or more cores, as shown for Sample 6 in Field 3.

unit. It is much better to collect separate samples from these areas because their nutrient requirements are likely quite different from the rest of the field.

If a few years of yield maps are available, these can help identify areas of the field that should be sampled separately.

Soil sampling can also be used to "troubleshoot" areas of the field that are visually different or are consistently low yielding when compared to the rest of the field. Take a sample both from the poor growing area and adjacent areas of good growth. Keep good records indicating where each sample was taken.

Collect at least 10 soil cores for small areas and up to 30 cores for larger fields. Take the soil cores randomly throughout the sampling area and place them in the bucket. **Do not sample:**

- back furrows or dead furrows,
- old fencerows,
- areas used for manure or hay storage and livestock feeding, and
- areas where lime has been piled in the past.

Grid Soil Sampling

With new advances in agriculture and the availability of global positioning satellites, it is now possible to divide a field into smaller units or grid cells that can be sampled individually. Soil test results from each grid can be used to prepare nutrient availability maps of fields. Variable-rate fertilizer and lime applications are then based on these maps. Grid soil sampling and prescription fertilizer maps may result in more accurate recommendations and may lead to greater efficiency in fertilizer use.

Currently the industry standard grid size is 2.5 acres, but Kentucky research shows that variability within areas as small as one acre can be as great as the variability within the entire field. Because soil variability is so high, it is important to treat each grid cell as a field. At least 10 random samples should be collected across the entire grid cell, rather than a few cores from the center of the grid (Figure 3). Grid sampling can be a good way to identify old field boundaries or parts of fields that have had different management in the past if they are unknown to the current producer. This intensive sampling is costly, and limited Kentucky research has not shown a predictable economic benefit when it is compared to the current recommended method of sampling according to soil type, past history, or past management zones.

Sampling after Banded Fertilizer Applications

Care must be taken when sampling no-till fields that have had fertilizer applied in bands rather than broadcast. Phosphorus, potassium, and zinc are immobile in the soil and remain in the concentrated band for several years after application. If these bands are completely avoided during sampling, soil test results will be lower than "actual," leading to over-fertilization. If bands are included too often, soil test results will be higher than "actual," causing an underestimation of fertilizer needs for the crop.

When the location of the bands is known, it is best to sample in the band one time for every 20 cores taken. If the location of the band is unknown, it is best to take pairs of random samples. The first core is completely random, and the second core is taken one-half the band spacing distance in a direction perpendicular to the band direction. For example, if banded fertilizer was applied on 30-inch spacing, the first core would be randomly selected, and the second sample would be taken 15 inches away (perpendicular to the direction of the band). This process would be repeated at least 10 times in a small field and up to 30 times in a larger field. The more cores that are collected, the more closely the sample will represent "actual" field conditions.

Collecting Lawn or Garden Samples

Sample gardens, lawns, and landscaped areas separately. Collect cores randomly from each area. The area to sample for trees includes the soil below the width of the tree. For shrubs, flower beds, and gardens, sample just the soil where the plants are growing. You should sample problem areas and areas with shrubs, trees, or flower beds separately from other turf or lawn areas. **Do not sample:**

- compost areas,
- under the drip-line of trees, and
- close to driveways or streets.

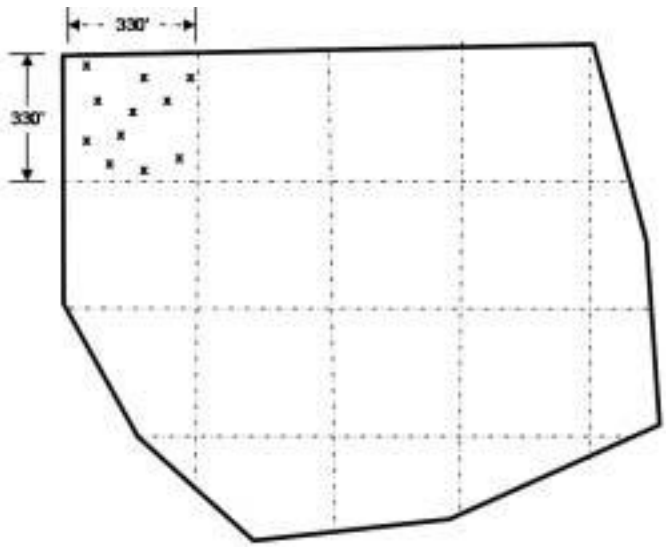

Figure 3. A field can be divided into 2.5-acre grid cells, as shown in the diagram above. Each cell should be treated as an individual field, and approximately 10 random cores should be taken from each cell.

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Sample Depth

One commonly overlooked component of soil sampling is the depth of soil to be tested. Most plant nutrients accumulate at the soil surface. This nutrient stratification is a result of past broadcast fertilizer applications and decomposition of plant residue on the soil surface. Because there is a higher concentration of nutrients on the soil surface, soil test values usually go down as the sample depth is increased. To obtain accurate and consistent (between different years) results, samples must be taken to the following depths for these areas:

Tilled Areas—Take soil cores to the depth of the tillage operation (usually 6 to 8 inches).

Non- or Reduced-Tilled Areas—Take soil cores to a depth of 3 to 4 inches for pastures, no-till planting (where fertilizer or lime remains on the soil surface), and minimum-till planting (where fertilizer is incorporated only in the surface 1 to 2 inches).

Lawns and Turfgrasses—Collect soil cores to a depth of 3 to 4 inches.

Sample Preparation

After all cores for an individual sample are collected and placed in the bucket, crush the soil material and mix the sample thoroughly (Figure 4). Allow the sample to air dry in an open space free from contamination. **Do not dry the sample in an oven or at an abnormally high temperature.** When dry, fill the sample container with the soil (Figure 5).

Figure 4. Break up clods while a sample is moist, and spread out to air dry in a clean area.

Sampling and preparing the soil for submission is only half of the process. The other equally important part is filling out a sample information sheet so that the desired crop, tillage, and other information can be considered when making the fertilizer recommendation (Figure 5). The sample information sheet contains all the important information required to provide accurate lime and fertilizer recommendations. Sample information sheets for the University of Kentucky Soil Testing Laboratory can be found on the Web at <http://soils.rs.uky.edu/sample1.htm>. The types of forms available are the:

- agricultural form,
- home lawn and garden form, and
- commercial horticulture form.

Figure 5. Thoroughly mix the air-dried sample, fill the sample bag or box, mark with your sample designation, fill out the information sheet, and take the sample to your county Extension office.

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Each form asks for primary and alternative crops, as well as other background information. The amount of background information needed depends on the crop to be grown. Table 1 is provided as a guide to the background information needed for major agricultural crops (a) and home lawn and garden plants (b). Help on filling out the forms can be provided by your county Extension office.

It is very important to complete the pertinent sections of the sample information form. This will assure that you receive the most accurate fertilizer recommendations possible. Soil samples should be taken to your county Extension office; from there they will be sent to the UK Soil Testing Laboratory. Results and recommendations will be e-mailed to the county office usually within one to two weeks of submission.

Table 1. List of required crop information for accurate lime and fertilizer recommendations.

A. Agricultural Soil Sample Form

	Primary Crop			
Required Information	**Corn**	**Soybeans**	**Tobacco**	**Forages**
Previous crop	yes[1]	no[2]	yes	no
Primary management	yes	no	no	yes
Previous management	yes	no	no	no
Primary use	yes	no	no	yes
Previous use	no	no	no	no
What was there 2 years ago?	no	no	yes	no
Soil drainage	yes	no	yes	no

B. Home Lawn and Garden Soil Sample Form

	Primary Crop		
Required Information	**Vegetables & Fruits**	**Turfgrass**	**Landscape Plants**
Turfgrass location	no[2]	yes[1]	no
General information	no	yes	no

[1] Yes = Information is needed for accurate recommendations.
[2] No = Information is not needed for accurate recommendations.

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PPFS-GEN-04

Plant Pathology Fact Sheet

Landscape Sanitation

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Extension Plant Pathologist

&

Amanda Sears
Extension Horticulture Agent

Importance of Sanitation

Diseases can become a significant problem in commercial and home landscape plantings (Figure 1A), resulting in premature leaf drop, dieback, decline, and even plant death. When diseases do occur, it is often presumed that fungicides are the most important and effective disease management tools available. However, a good sanitation program can help reduce the need for chemical controls and can improve the effectiveness of other practices for managing disease. This often-overlooked disease management tool reduces pathogen numbers (Figure 1B) and eliminates infective propagules (inoculum such as fungal spores, Figure 1C; bacterial cells; virus particles; and nematode eggs) that cause disease.

For example, certain foliar fungal and bacterial leaf spots can become prevalent during rainy or humid growing seasons. When disease management is neglected, pathogen populations build-up and continue to increase as long as there is susceptible plant tissue available for infection and disease development. Infected plant tissue infested soil, and pathogen inoculum all serve as sources of pathogens that can later infect healthy plants.

Figure 1. When marigold blossoms infected with Botrytis are left in the landscape (**A**) pathogen levels build up on diseased tissues (**B**), resulting in the production of numerous additional infecting spores (**C**).

Figure 2. Fallen leaves can serve as a source of inoculum (fungal spores) for additional infections. Many pathogens overwinter in fallen debris and then produce infective spores the following spring.

Reduction of pathogens by various sanitation practices can reduce both active and dormant pathogens. While actively growing plants can provide host tissue for pathogen multiplication (Figure 1), dead plant material (foliage, stems, roots) can harbor overwintering propagules for months or years (Figure 2). These propagules can travel via air/wind currents, stick to shoes or tools, or move with contaminated soil or water droplets. Thus, prevention of spread of pathogens to healthy plants and the elimination of any disease-causing organisms from one season to another are the foundations for a disease management program using sanitation practices.

Sanitation Practices

Elimination and/or reduction of pathogens from the landscape results in fewer pathogen propagules. The following sanitary practices can reduce amounts of infectious pathogens:

- Remove diseased plant tissues from infected plants. Prune branches with cankers well below the point of infection (Figure 3). Cuts should be made at an intersecting branch. Rake and remove fallen buds, flowers, twigs, leaves, and needles (Figure 4).

- Disinfest tools used to prune galls and cankers. Cutting blades should be dipped into a commercial sanitizer, 10% Lysol disinfectant, 10% bleach, or rubbing alcohol between each cut. If using bleach, rinse and oil tools after completing work, to prevent corrosion.

- Discard perennial and annual plants that are heavily infected and those with untreatable diseases (e.g. root rots, Figure 4; and vascular wilts). Dig infected plants to include as much of the root system as possible, along with infested soil.

- Trees and shrubs infected with systemic diseases (e.g. Dutch elm disease, Verticillium wilt, bacterial leaf scorch) that show considerable dieback should be cut and the stump removed or destroyed (e.g. by grinding).

- If infected plants are to be treated with fungicides, prune or remove infected tissue (flowers, leaves) and debris to eliminate sources for spore production or propagule multiplication. This should be done before fungicide application. Fungicide effectiveness may be reduced when disease pressure is heavy, which can result when pathogen levels cannot be reduced sufficiently by chemical means (fungicides).

Figure 3. Cankers are common overwintering sites for disease-causing pathogens. Remove infected branches, making cuts well below points of infection.

Figure 4. Heavily infected plants or those with untreatable diseases, such as black root rot (above), should be removed from the landscape.

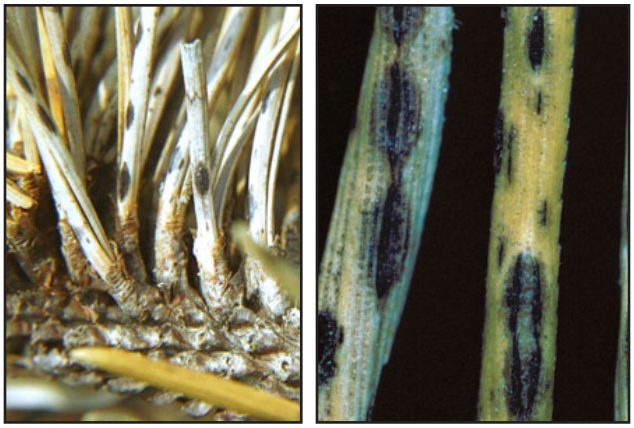

Figure 5. Black fruiting structures of the pine needlecast pathogen contain spores. Removal of infected plant tissue helps reduce amounts of inoculum in the landscape

- Discard fallen leaves, needles (Figure 5), prunings, and culled plants. Never leave diseased plant material in the landscape, as pathogens may continue to multiply by producing spores or other propagules. Infected plant material should be buried, burned, or removed with other yard waste.

- Do not compost diseased plant material or infested soil because incomplete composting (temperatures below 160˚ F) may result in survival of propagules.

- Homeowners should be cautious about storing diseased limbs and trunks as firewood or using the woodchips as mulch. For example, wood from trees infected with Dutch elm disease should be debarked before placing in a firewood pile.

- Remove weeds and volunteer plants to prevent establishment of a "green bridge" between plants. A green bridge allows pathogens to infect alternate hosts until a more suitable one becomes available. Be sure to remove aboveground parts AND roots.

- Soil from container-grown plants should not be reused from one season to the next because pathogens can survive in soil.

Additional Resources

- Extension Plant Pathology Publications
http://www2.ca.uky.edu/agcollege/plantpathology/extension/pubs.html

Reviewed by Paul Vincelli, Extension Plant Pathologist **Issued July 2013**

Photos by R.K. Jones, North Carolina State University (Fig. 1A), M.C. Shurtleff, University of Illinois (Fig. 1B), David Cappaert, Michigan State University (Fig. 1C), Theodor D. Leininger, USDA Forest Service (Fig. 2), Joseph O'Brien, USDA Forest Service (Fig. 3, right), Elizabeth Bush, Virginia Tech (Fig. 4, left), Bruce Watt, University of Maine (Fig. 4, right), Andrej Kunca, National Forest Centre, Slovakia (Fig. 5, left), Robert L. Anderson, USDA Forest Service (Fig. 5, right), courtesy Bugwood.org; and John R. Hartman, University of Kentucky (Fig. 3, left)

NEP-226

Growing Your Own
A beginner's guide to gardening

Kale

In recent years, kale has been called a "super food" because of the ways it can benefit our health. Kale is a cool-season crop and may be among the first vegetables you harvest from your garden in the spring.

Varieties

- **White Russian**—flat leaves with notched edges that are blueish green with white stems and leaf ribs.
- **Red Russian**—like White Russian, it has flat leaves with notched edges that are blueish green, but with red to maroon stems and leaf ribs.
- **Lacinato**—also called dinosaur kale, has long and more narrow leaves than the Russian variety with dark green puckered leaves.
- **Blue Knight**—bluish green to yellow green leaves that are ruffled on the edges and curl inward; very productive, mild flavor.

Red Russian
(Rick Durham)

Lacinato
(Rick Durham)

Redbor
(Rachel Rudolph)

Blue Knight
(Rick Durham)

Prizm
(All-American Selections)

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SNAP Putting Healthy Food Within Reach
USDA Supplemental Nutrition Assistance Program

This institution is an equal opportunity provider.

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EFNEP Expanded Food and Nutrition Education Program

This work is supported by the Expanded Food and Nutrition Education Program from the USDA National Institute of Food and Agriculture.

- **Vates**—similar in appearance to Blue Knight, in that leaves are ruffled on the edges and curl inward, but less blue; very productive, and flavorful.
- **Dwarf Siberian**—like Blue Knight but leaves are more compact and tightly bound with more curls on the edges; productive, mild flavor
- **Redbor**—similar in shape to Blue Knight with leaves that are ruffled on the edges and curl inward, but with purple leaves; makes a great addition to salads.
- **Prizm**—a recent All-American selection winner with deep green leaves that are ruffled on the edges and compact; attractive for use in containers.

How much to plant

A 5- to 10-foot row of kale should provide enough leaves for fresh use for one person. Plant more if you wish to freeze kale leaves for storage, or if you are feeding more than one person.

How much and when to plant

Kale is a cool-season crop and can withstand frosts and freezing temperatures. Plant seeds or transplants mid- to late March in Kentucky. Kale leaves will become bitter during the hot summer months. A fall garden planting can be made in late July to mid-August. The fall planting often remains productive until very cold temperatures in winter causes growth to stop.

Plant about 4 to 6 seeds for each foot of row and cover the seed about ¼ to ½ inch deep. After they begin to grow, thin seedlings to 8 to 12 inches apart. The removed plants can be added to salads or soups. You may also find ready-to-transplant seedlings at your local garden center. These can be planted about 12 inches apart in the garden. For more information on transplanting, see *Preparing Your Garden* (NEP-219) at http://www2.ca.uky.edu/agcomm/pubs/NEP/NEP219/NEP219.pdf.

Pests and disease

Wet soils may promote "damping off," a disease that affects young seedlings. The stem will have a soft, wet spot where it meets the soil. Young seedlings do not recover from damping off. To prevent this disease, make sure seedlings have well drained soil and are not overcrowded. Once growing, though, kale is not likely to get a disease.

Pests that affect kale include aphids, caterpillars, and flea beetles. If you notice problems with insect damage, call your local county Extension office for advice on treatment and control, or consult the UK Cooperative Extension publication, *Growing Vegetables at Home in Kentucky* (ID-128) at www2.ca.uky.edu/agcomm/pubs/id/id128/id128.pdf.

Damping off is a disease in which the seedling gets soft and rotten where the stem meets the soil.
(Paul Bertrand, University of Georgia, Bugwood.org)

Harvesting

As lower leaves expand, they may be removed from the plant. It is best to pick kale in the morning while it is cool. Cutting the leaves is better than breaking them off since there is less damage to the plant. Harvest leaves by cutting them away from the stem with a pair of scissors. It is common to remove 2 to 3 leaves per plant every 7 to 10 days. The younger leaves at the top of the plant will be more tender than the older leaves lower on the plant. After the taste of the leaves becomes bitter due to hot weather, it is best to remove plants from the garden.

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Harvest kale by cutting the leaves from the plant with scissors.
(Rick Durham)

Serving

Kale contains many vitamins, such as A, C, and K. It promotes heart health and can help prevent cancer.

To eat raw: Wash leaves in lukewarm water. Remove roots, rough ribs, and center stalks if they are large or fibrous. Serve in a salad.

To cook: Add washed greens to a medium-sized saucepan with ¼ inch of water. Bring water to a boil. Cover and cook until tender. Crisp and tender leaves may require 5 to 10 minutes. Kale may also be sautéed in a skillet with other vegetables or cooked in a soup.

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Storing

Kale leaves should be refrigerated in a plastic bag or in the crisper drawer. Leaves will stay fresh for 7 to 10 days.

To freeze: Wash young, tender green leaves thoroughly and cut off woody stems. Blanch greens for 2 to 3 minutes, cool, drain, and package. Leave ½-inch headspace, seal, label, and freeze. Frozen greens can be stored up to 1 year.

Summary

Varieties
There are many varieties of kale. Varieties that grow well in Kentucky are: White Russian, Red Russian, Lacinato, Blue Knight, Vates, Dwarf Siberian, Redbor, and Prizm.

How much to plant
A 5- to 10-foot row of kale should provide enough leaves for fresh use for one person.

How and when to plant
Kale is a cool-season crop and can withstand frosts and freezing temperatures. When grow- ing kale make sure to leave space between the plants.

Pest and diseases
Pests that affect kale include aphids, caterpil- lars, and flea beetles. A disease that affects young kale will make the stem soft where it touches the soil.

Harvesting
It is common to remove 2 to 3 leaves per plant every 7 to 10 days. Cutting the leaves is better than breaking them.

Serving
Kale can be eaten raw in a salad or sautéed, steamed, or cooked in a soup.

Storing
Kale leaves should be refrigerated in a plastic bag or in the crisper drawer. They can also be frozen.

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Steps to Keep Cooler Temperatures from Chasing Bugs Indoors

By Laura Skillman, Published Oct. 16, 2002

As temperatures cool, spiders, flies and lady beetles may begin invading homes around Kentucky. Pest proofing, or cutting down on entryways can reduce problems indoors.

Some of the same techniques used to keep pests from inside a home can also help conserve energy by keeping heat inside. Mike Potter, University of Kentucky Cooperative Extension Service Entomologist, offers six steps to help keep pests out. Install door sweeps or thresholds at the base of all exterior entry doors.

To see if you need sweeps, check for light filtering under doors while lying on the floor. Gaps of a 16thof an inch or less will permit entry of insects and spiders while a quarter inch wide gap (the diameter of a pencil) is a large enough for entry of mice. Pay particular attention to the bottom corners, as this is where insects and rodents often enter, he said. Apply caulk along the bottom outside edge and sides of door thresholds to exclude ants and other small insects.

Garage doors should be fitted with a bottom seal constructed of rubber because vinyl weather stripping may seal poorly in cold weather. Gaps under sliding glass doors can be sealed by lining the bottom track with a quarter inch to 3/4 inch-wide foam weather strip.

Additionally, seal utility openings where pipes and wires enter the foundation and siding, such as around outdoor faucets, receptacles, gas meters, clothes dryer vents, and telephone/cable TV wires. These are common entry points for rodents, ants, spiders, yellowjackets and other pests, Potter said. Holes can be plugged with caulk, cement, urethane, expandable foam, steel wool, wire mesh, or other suitable sealants.

Caulk cracks around windows, doors, fascia boards and other areas where it may be needed. Use a good quality silicone or acrylic latex caulk. Although somewhat less flexible than pure silicone, latex-type caulks clean up easily with water and are paintable. Caulks that dry clear are often easier to use than pigmented caulks since they don't show mistakes.

Buy a good caulking gun. Features to look for include a back-off trigger to halt the flow of caulk when desired, a built-in "slicer" for cutting the tip off of new caulking tubes, and a nail for puncturing the inner seal. Hardware stores sell guns with these features for less than $10. Prior to sealing, cracks should be cleaned and any peeling caulk removed to aid adhesion. For a professional look, smooth the bead of caulk with a damp rag or a moistened finger.

Repair gaps and tears in window and door screens. Doing so will help reduce entry of flies, gnats, mosquitoes and midges during summer, and cluster flies, lady beetles, and other overwintering pests in autumn. Certain insects, in particular leafhoppers and hackberry psyllids, are small enough to fit through standard mesh window screen. The only way to deny entry of these tiny insects is to keep windows closed during periods of adult emergence. Install quarter-inch wire mesh (hardware cloth) over attic, roof, and crawl space vents to prevent entry of birds, bats, squirrels, rodents, and other wildlife.

Be sure to wear gloves when cutting and installing hardware cloth, as the wire edges are razor sharp. Invest in a chimney cap to exclude birds, squirrels, raccoons and other nuisance wildlife.

Finally, consider applying an exterior (barrier) insecticide treatment. While sealing is a more permanent way to exclude pests originating from outdoors, comprehensive pest proofing is labor-intensive and sometimes impractical.

For someone requiring an alternative, pest proofing can be supplemented by an exterior treatment with an insecticide. Homeowners will get the most for their efforts by applying longer-lasting liquid formulations containing synthetic pyrethroids sold at hardware/lawn and garden shops. Apply with a pump up sprayer, hose end sprayer or other applicator, treating at the base of all exterior doors, garage and crawl space entrances, around foundation vents and utility openings, and up underneath siding. It may also be useful to treat around the outside perimeter of the

foundation in a 2 to 6-foot-wide band along the ground, and 2-3 feet up the foundation walls.

Anyone who chooses not to tackle these activities may wish to hire a professional pest control firm. Many firms now offer pest proofing as an adjunct to other services. When all else fails, a vacuum cleaner or broom is often the best response to the occasional bug that wanders in from outdoors.

For more information regarding pest control, contact Suzanne Stumbo, Pike County ANR Extension Agent.

Fall Calving Can Be Producer Option

By Laura Skillman, Published Sep. 30, 2005

"There is a definite advantage of selling fall-born calves in the spring and early summer." Kevin Laurent UK Extension Animal Sciences Associate

In some areas of Kentucky, cattle producers are showing a growing interest in switching to or adding a fall calving season to their beef cattle operation. Traditionally, Kentucky cattlemen have used spring for calving, with cattle sometimes giving birth in less than desirable weather conditions. With the increased interest in fall calving, researchers at the University of Kentucky College of Agriculture underwent a multiyear project looking at the advantages and disadvantages of both systems. "Logically, you can see some advantages to fall calving, and better weather conditions is what attracts most people," said Kevin Laurent, UK Extension animal sciences associate. "Especially, if you've been through a wet, cold February and March resulting in a round of bad spring calving, then September and October look attractive."

Additionally, a producer can breed cattle grazing stockpiled fescue in November and December when the forage is at its nutritional peak. Fescue is again in a growth cycle from April to June, coinciding with the peak cattle inventory for fall calving herds in terms of number and size of animals. Historical data also give a marketing advantage to fall-born calves. "There is a definite advantage of selling fall-born calves in the spring and early summer," Laurent said. "That's partly because most producers calve in the spring, which means a larger number of calves are for sale in the fall." A disadvantage of fall calving is a producer will need to provide supplemental feed for the calves in the winter. No matter the forage program a producer has, January through March are difficult times for livestock and the calves are going to need more than just their mother's milk to thrive. Feed consumption will also be higher in a fall calving system because a nursing cow in a cold environment is going to consume more feed.

To compare the two calving systems, UK researchers studied four tests of 20 cows each for three years. There were two groups each of fall calving cows and spring calving cows, with one group of each on low endophyte fescue and one on high endophyte fescue. Sept. 15 to Nov. 15 were the fall calving dates and Feb. 15 to April 15 were spring calving dates. Winter feeding programs consisted of stockpiled fescue and hay from November to January. From February through April, every cow received 50 pounds of corn silage with no additional feed for the calves.There was no difference in pregnancy rates between groups, but actual weaning weights for spring-born calves were 20 pounds heavier.

Winter hay costs were nearly double for fall herds. But, calf mortality rates were 1.8 percent in fall compared to 6.8 percent in spring. "Basically, on pregnancy rates the jury is still out," Laurent said. "Weaning weight advantage is to spring, feed costs advantage is to spring. Calf mortality is a huge advantage to fall due basically to better weather conditions. Fall also has the marketing advantage with calves selling some 5- to 6-percent higher than the spring-born calves. Based on the UK trials, a preliminary economic analysis shows that a producer can net approximately $20 more per calf by calving in the fall. Laurent said there are not a lot of advantages one way or the other, and the

decision boils down to personal choice.“The No. 1 factor to consider during the calving season is labor,” he said. “If you work off the farm and can’t be there when weather conditions are poor and cattle are calving, then that’s an issue. On the other hand, if you are a grain farmer, September and October are your busiest times, and you may hardly have time to even drive through the pasture to see what’s happening in your herd.”Fall calving requires a good forage program. If a producer doesn’t have an above- average forage program or silage, he may not want to calve in the fall. In addition, there are some good, inexpensive feedstuffs such as grain byproducts (e.g., soyhulls, corn gluten, distillers grains) that can be used to creep feed calves from January through March. But if a producer doesn’t want to deal with this extra labor, especially in muddy conditions, then they might not want to fall calve.UK researchers are planning a follow-up study with less reliance on silage and more on forages, including warm-season grasses, Laurent said.

Horseback riding safety

Saddle Up Safely Rider Safety Program, University of Kentucky

Every year, millions of Americans participate in horseback riding activities. Riders are often six feet above the ground on horses weighing more than 1,000 pounds capable of 35 miles-per-hour speeds. So while horseback riding can be very enjoyable, there are inherent dangers in working with horses. In 2007, 78,000 people were seen in U.S. emergency rooms due to horse-related injuries; 9,600 of those were admitted to the hospital for further treatment.

Accidents and injuries do not discriminate. They can happen to experienced and inexperienced riders alike. Most injuries happen during recreational riding rather than in sporting events and may occur both while you are on horseback or while you are on the ground taking care of your horse.

The most common injuries in horseback riding are fractures, bruises and abrasions, sprains and strains, internal injuries, and concussions. Injuries are most often caused by falls, but people can be kicked, stepped on or fallen on by horses. While any horse can cause injury, calm older horses belong with novice riders and inexperienced or high-strung horses belong with experienced riders.

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Disabilities accommodated with prior notification.

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General safety tips

- Ensure that the skill of the rider is matched to the horse's temperament.
- Become familiar with horses and their behavior and safe horse-handling practices.
- Regularly inspect riding equipment and replace anything worn or damaged. Ensure the horse's tack fits well and is suited for the type of riding being done.
- Do not drink alcohol or use drugs while riding or working around horses.
- Avoid loose-fitting clothing that could get caught in riding equipment and cause dragging or trapped limbs.
- Ensure that horse trainers /instructors are trained in cardiopulmonary resuscitation (CPR) and basic first aid.

Percent of emergency room visits requiring an overnight stay in a hospital

Cause of Injury	Seen in Emergency Room	Admitted to Hospital	Percent Admitted
Bicycling	515,871	29,143	6%
Football	455,193	8,061	2%
ATVs/Mopeds/Minibikes	278,671	32,532	11%
Baseball/Softball	277,702	4,413	2%
Swimming	155,322	6,094	4%
Horseback Riding	78,527	10,174	13%

Source: National electronic injury Surveillance System, 2007 estimates
www.cpsc.gov/neiss/2007highlights.pdf

Head, neck and spine injuries

Head, neck and spine injuries are often the most severe horseback-riding related injuries, and head injuries are the most likely to result in death. The likelihood of death from a head injury is greatly increased if the rider is not wearing a helmet. In one study, riders not wearing a helmet were four times more likely to die when injured than those who wore helmets.

Helmets worn while riding and working around horses should be certified by the American Society for Testing and Materials (ASTM) and the Safety Equipment Institute (SEI). The helmet should fit snugly on the head, with firmly secured but comfortable chin straps. Any helmet that has undergone an impact should be discarded and replaced. Many helmet manufacturers also recommend that helmets be replaced every three to five years due to wear and tear and possible compacting of cushioning materials.

International studies of equestrian-related injuries emphasize that the use of appropriate helmets significantly reduces the number and severity of head injuries.

Modern helmets are affordable and much more comfortable than older versions thanks to better ventilation, lightweight materials and their availability in multiple sizes. Helmets are even available with a Western hat style!

Protect Your Head One out of every nine horseback-related injuries seen in an emergency room is a head injury.

Fell from horse	125	58%
Kicked by horse	40	19%
Horse fell on rider	28	13%
Stepped on	11	5%
Foot caught in stirrup/dragged	4	2%
Bitten by horse	1	1%
Other (hit by car, saddle broke, hit fence, rolled ankle dismounting)	4	2%
Total	213	100%

Source: UK trauma Registry

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Chest and abdominal injuries

Body protectors are available to reduce the risk of bruises, abrasions, and some rib and shoulder injuries. However, they are not capable of preventing serious spinal, chest and abdominal injuries that may be received from falls or kicks.

Body protectors are designed to cover either the chest or the chest and abdomen. Some include protection for the shoulders and collarbones.

Protectors can be worn over clothing or under a jacket. They should be fitted according to the manufacturer's recommendations. Age, storage and temperature ranges can affect the protective material and lessen its effectiveness.

Manufacturer's guidelines for cleaning, maintenance and replacement of all safety gear should be followed at all times.

Tetanus shot

Make sure you have had a tetanus shot within the past 10 years and always get a booster if you suffer an open-skin injury such as a wound or laceration.

Things that can spook a horse

- Sudden noises such as alarms, screams, approaching vehicles
- Sudden or unexpected movements (by people or animals)
- Crowds of people
- Wasps and other insects
- Dogs that are not confined or on a leash
- Umbrellas opening, camera flashes

Other safety tips

- Be aware of the weather forecast before riding.
- Have a National Oceanic and Atmospheric Association (NOAA) weather radio in the barn and heed weather warnings.
- At the first sight of lightning or rumble of thunder, get off the horse and head for a barn.
- Do not stand under trees or by metal gates or fences when it is storming.
- Avoid riding in the woods during hunting season or at least wear bright orange at those times.

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Arm and leg injuries

Nearly half of all horse-related injuries occur in the arms, fingers and legs. The following precautions can help with safety:

- **Wear proper footwear.** Wearing proper riding boots and shoes can help prevent many horse-related injuries. Shoes or boots should have a 1-inch heel that prevents the foot from slipping through the stirrup. They should cover the ankle. Steel-toed boots are not recommended. Boot soles should have smooth treads.
- **Use safety stirrups.** In the event of a fall, safety stirrups break away or unleash the foot and prevent the rider from being dragged.
- **Use toe stoppers.** Toe stoppers are attached to the stirrups and help riders maintain balance and prevent the foot from slipping through the stirrup.
- **Wear gloves.** Gloves may help prevent the reins from slipping out of your hands and provide some hand protection. Gloves also provide a sturdier grip, particularly in wet weather.
- **Learn emergency dismounts.** Have an experienced instructor show you how to quickly dismount from a horse, which may be necessary on a runaway horse or in other situations.
- **Always approach the horse with caution.** Learn how to read a horse's behavior in order to anticipate sudden movements. Do not approach directly in front or behind a horse. For less experienced riders, grooming and feeding should be done under experienced supervision. Learn how to safely lead a horse.

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Injuries in children

Nearly one in five emergency department visits for horse-related injuries involves a child under age 15.

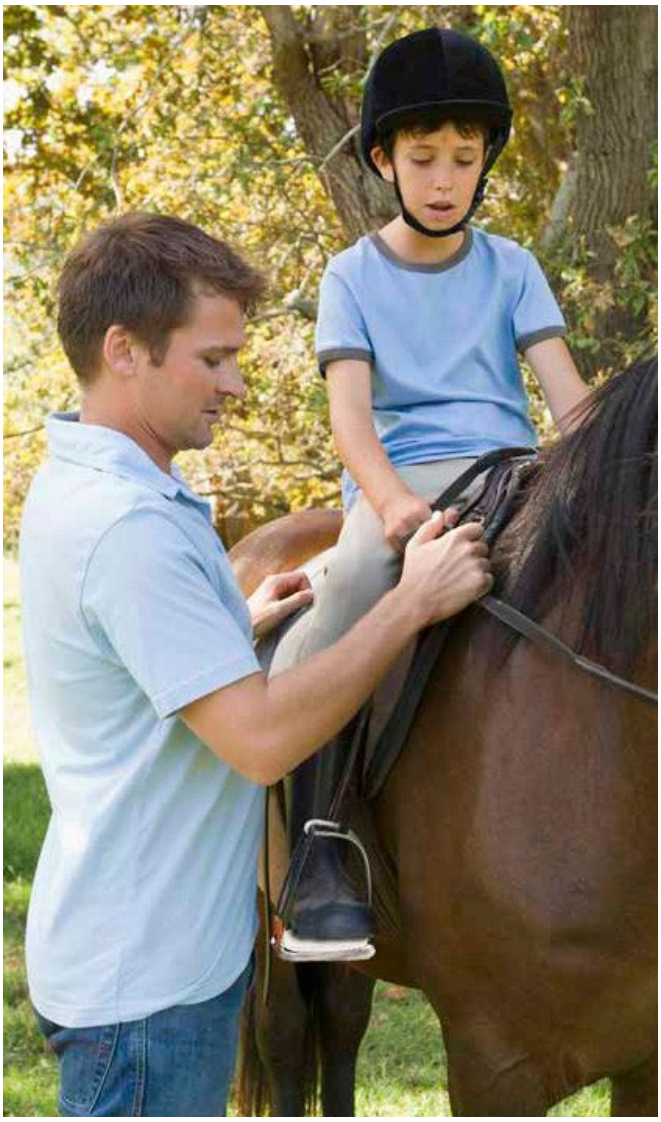
Special precautions should be taken when children are riding. Children should:

- Possess the balance and coordination to stand, sit and walk independently. They must be able to interact with the horses and other riders in a safe and efficient manner. They should possess the social skills and maturity that are age appropriate for the lesson, which will allow them to interact properly with the instructors and other students.

- Receive lessons from an experienced, qualified instructor who has a history of safely teaching children. The American Riding Instructors Association and the Certified Horsemanship Association offer a list of certified instructors. See the Resources section of this booklet.

- Take lessons in riding and handling horses. Lessons should take place in a safe, flat, uncluttered, fenced location away from traffic or external noises.

- Ride with supervision and only on horses properly trained for beginner and novice riders.



The North American Riding for the Handicapped Association can direct you to accredited therapeutic equine programs at www.narha.org.

For more information contact Suzanne Stumbo, Pike County ANR Extension Agent

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Wildfire Preparedness

By Simone Lewis - National Weather Service Charleston, WV

When the word ***wildfire*** comes to mind, images of burning forests in the western United States usually enter the thoughts of most. But did you know that Kentucky is also prone to wildfires? In fact, the state averages 1,447 wildfires a year! The following article will discuss what weather conditions are favorable for wildfire development, the weather alerts that are issued during periods of favorable fire weather, and what you can do to prepare for and prevent wildfires.

Photo Credit: Kentucky Emergency Management

The first question on your mind is probably "What is Fire Weather"? Essentially, fire weather is any sort of weather that can ignite or lead to rapid spread of fires. This includes thunderstorms (which contain strong gusty winds and lightning that can lead to rapid spread or ignition of a fire), days when the relative humidity is low (often in the early spring and fall seasons), and windy days (which acts to not only spread wildfires but also leads to the drying of vegetation, making it more susceptible to burning).

Wildfire Prevention

Most wildfires in the state of Kentucky are caused from arson or from uncontrolled debris burning. In fact, 90% of all wildfires in Kentucky are caused by humans. Unlike many fires in the western United States, most of the fires in Kentucky are fought by firefighters *on the ground* (Source: Kentucky Energy and Environment Cabinet). They are putting their lives in danger to control the spread of these fires. It is therefore important to always be fire aware, and heed any Fire Weather Watches or Red Flag Warnings issued by the NWS.

Here are some general guidelines to follow when the following products are issued:

Fire Weather Watch = BE PREPARED! Dangerous fire weather conditions are possible in the next few days but are not occurring yet.

Red Flag Warning = TAKE ACTION! Dangerous fire weather conditions are ongoing or expected to occur shortly. During a Red Flag Warning, you should avoid or use extreme caution when dealing with anything that could pose a fire hazard.

- Do not start a campfire or ignite a burn pile.

- Do not burn trash.
- Avoid using a lawnmower, chainsaw, or any other equipment that may emit sparks.
- Do not dispose of cigarette butts on the ground or outside of your car.
- If using an outdoor grill, make sure to have a water source nearby and do not dispose of the ashes until the Red Flag Warning has expired or been canceled AND the ashes are fully extinguished!
- Watch for smoke nearby. If you spot an unattended fire, call 911 and report it immediately!

What do I do to prepare?

Take personal responsibility by preparing long before the threat of a fire, so your home and family are ready.

- If there are concerns of fire potential, create a defensible space by clearing brush that is easier to ignite away from your home.
- Put together a basic emergency supply kit. Check emergency equipment, such as flashlights and generators.
- Plan escape routes and make sure all those residing within the home know the plan of action.
- Sit down with your family and close friends, and decide how you will get in contact with each other, where you will go, and what you will do in an emergency. Keep a copy of this plan in your emergency kit, or another safe place where it can be accessed in the event of an emergency.
- Review your insurance policies to ensure that you have adequate coverage for your home and personal property in the event of fire.
- Follow the latest NWS forecasts and listen to a NOAA Weather Radio for the latest updates.

Photo Credit: U.S. Forest Service

What are Kentucky's Fire Laws?

Lastly, it's important to know and heed the fire laws and seasons for the state of Kentucky. During the following periods, it is illegal to burn anything within 150 feet of any woodland or brushland between the hours of 6 a.m. and 6 p.m.

- Spring Forest Fire Hazard Season: February 15 - April 30
- Fall Forest Fire Hazard Season: October 1 - December 15

Also, burn bans can be issued at any time of the year if conditions warrant, particularly during periods of drought, and should always be followed.

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