

A lush garden scene featuring a well-maintained green lawn in the foreground. In the background, there are several tall trees, a white gazebo, and a wooden pergola. The garden is filled with various plants and flowers, creating a vibrant and shaded environment.

Selecting the Right Turf and Management for Shaded Environments

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There are solutions to the tree shade issue but we won't turn to such barbaric measures!

Woody Vegetation Control

- Cut stump application
- Basal stem application



Dyed Basal oil







Pruning Ornamental Trees, Shrubs, and Vines

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Proper pruning enhances the beauty of almost any landscape tree and shrub and is an essential maintenance practice in home landscaping. On the other hand, improper pruning can destroy the natural beauty of a tree or shrub and reduce its landscape potential by weakening and thus disposing plants to various maladies.

Pruning, like any other skill, requires knowledge and practice to achieve success. Remember that pruning is often the removal of certain plant parts that are no longer effective or of use to the plant. It is done to redirect additional energy for the development of the flowers, fruits, foliage, and limbs that remain. Pruning essentially involves removing plant parts to improve health, landscape effect, or value of the plant. Once the objectives are determined and a few basic principles are understood, pruning is simply a matter of common sense.

Oklahoma Cooperative Extension Fact Sheets
are also available on our website at:
<http://osufacts.okstate.edu>

Why Prune?

- Maintain and improve plant health
- Improve flowering and fruiting
- Remove dead, diseased, broken wood
- Remove crossing or rubbing branches
- Control natural shape and size
- Safety
- Visibility
- Provide for sun exposure and air circulation
- Restore balance/symmetry
- Rejuvenate deciduous shrubs






Drummond's Aster

Tree shade problem sites



Tree shade problem sites

- 
- **Tree competition for sunlight**
 - **Root competition for soil moisture, nutrients and root zone space**
 - **Less air movement, more turf disease in shade**
 - **Reducing turfgrass use in shade solves problems**



Managing Turfgrass in the Shade in Oklahoma

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Introduction

Light is a basic requirement for turfgrass growth and is often limiting in the landscape due to shade provided by trees, shrubs, buildings, homes or other structures. Photosynthetically active radiation (PAR) refers to the spectral range of solar radiation from 400 nm to 700 nm (nanometers). Plants contain chlorophyll, which absorbs light in the PAR range for photosynthesis. All turfgrasses will grow best in full-sun conditions provided their management requirements are satisfied. In shaded areas, the specific wavelengths of light available to a turfgrass plant are altered and the amount of light available can reduce the plant's ability to efficiently perform

trim trees to the point where sufficient light is provided to the turfgrass area. Turfgrasses need light for adequate survival and performance, and even the most "shade tolerant" grass will not thrive in heavily shaded areas (Figure 1).

Plant Selection

While warm-season grasses are generally more heat and drought tolerant than cool-season grasses, cool-season grasses are generally more shade tolerant than warm-season grasses (Tables 1-3). Bermudagrasses (*Cynodon* spp.) are the most commonly planted lawn grasses in Oklahoma. Ber-

Turf Management in Shade

- Be prepared with other planting options



EXTENSION

Table 4. Relative cultivar shade tolerance of bermudagrass and zoysiagrass for Oklahoma lawns¹.

	<i>Bermudagrass</i>	<i>Zoysiagrass</i>
<i>Good</i>		Cavalier, Crowne, Diamond, El Toro, Emerald, Empire, Palisades, Zorro
<i>Fair</i>	Celebration, TifGrand (Tifton No. 4, ST-5)	Meyer
<i>Poor</i>	Riviera, Princess 77, Patriot	
<i>Very Poor</i>	Common, U-3, Tifway (419), Tifsport, Tifgreen, NuMex Sahara, Yukon, Midlawn	

¹ Rankings are relative among selected bermudagrass and zoysiagrass cultivars only.

Tall fescue in a light to medium shade



Turf type vs forage type tall fescue

Left: KY 31, non-turf type

Right: turf-type



light to medium shade



Tall fescue



Perennial ryegrass

St. Augustinegrass

- Raleigh
- TamStar
- Texas Common



Full sun to medium shade

Zoysiagrass

- Seeded
 - Compadre
 - Zenith
- Vegetative
 - Meyer
 - El Toro
 - Palisade
 - Cavalier



Full sun or light shade

Bermudagrass

Bermudagrass

Full sun



Bermudagrasses

- Seeded
 - Riviera
 - Yukon
 - Sahara
- Vegetative commons
 - U-3
- Vegetative hybrids
 - Latitude 36
 - NorthBridge
 - Tifway
 - Astro
 - TifTuf

Turfgrass failure in shade



Tree shade problem sites



Sedges

Perennial sedges

- Yellow nutsedge (left)
- Purple nutsedge (right)





Mix of Native Sedges



Mix of Native Sedges



Annual bluegrass

Alternatives to turfgrass in shade

- Liriope or monkeygrass
- 



Variegated Liriope

Optimize growing conditions for the lawn where feasible

- **Soil testing and diagnostics** – as needed
- **Fixing damaged areas** – seeding, sodding or plugging
- **Fertilization** – match amount and timing to grass present and performance expectations
- **Irrigation** – are you going to irrigate or go “dry land”
- **Mowing** – right height and frequency of mowing
- **Weed control** – tolerating some weeds, hand removal, pre-emergent and post-emergent herbicides

- Abiotic conditions
- compaction
- wear stress





Herbicides

Chemical Weed Control

- **pre-emergent** - control applied so weed is killed when it germinates. Apply before weed germinates.
- **post-emergent** - control applied to existing weeds. Apply when weed is immature for best control.





GROUP **1** HERBICIDE

PULL HERE TO OPEN ►



syngenta.

Herbicide

For the control of grass weeds in landscape areas, roadsides, nurseries, greenhouses, flower beds, groundcovers, interiorscapes, parks, sports fields, golf courses, commercial and residential areas.

Active Ingredient:

Fluazifop-P-butyl

Butyl (*R*)-2-[4-[[5-(trifluoromethyl)-2-pyridinyl]oxy]phenoxy]propanoate* 24.5%

Other Ingredients 75.5%

Total: 100.0%

*Fusilade II Turf and Ornamental Herbicide is an emulsifiable concentrate containing 2 pounds (+) isomer (fluazifop-P-butyl) per gallon.

Contains petroleum distillate.

**KEEP OUT OF REACH OF
CHILDREN
CAUTION**

See additional precautionary statements and directions for use inside booklet.



Summer Annual Grassy Weeds



← crabgrass



← goosegrass

Common Winter Annual Grassy Weeds

annual bluegrass

(*Poa annua*)

downy brome, cheat,

rescuegrass



Pre-emergent Herbicides Used in Landscape Beds, Nursery Production and Turfgrass Management

- Labeled in turf, ornamentals, ground beds under trees include but not limited to the products:
- Surflan (oryzalin)
- Barricade (prodiamine)
- Pendulum (pendimethalin)
- Ronstar (oxadiazon)
- Gallery (isoxaben)

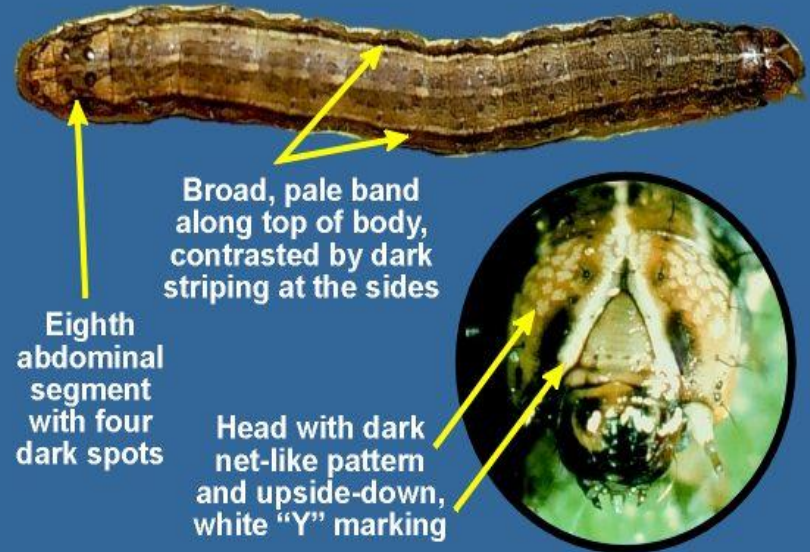
Insecticides

Insect Control

- Principle problems include:
 - White grubs
 - Fall armyworms



Fall Armyworm Identification



Damage from moles

Fungicides

Brown Patch

- Most prevalent on tall fescue
- Disease severity increases with reduced air movement, high temps (80+), high humidity, heavy dew, summer fertilization, heavy shade



Fairy Ring





Fix damaged areas



Steps in establishment

- Remove objectionable species
- No pre-emergent herbicides within 100 days prior to establishment (its use-rate dependent also)
- Tillage, grading, fine raking
- P and K additions if soil testing determined
- Proper seeding rate or laying of sod
- 1 lb of N at time of seeding with P and K
- Mulching?
- Irrigation to keep site moist but not saturated. (several irrigations per day are often needed!)





A tall fescue seedling about 2 days after germination



A tall fescue seedling about 3 days after germination



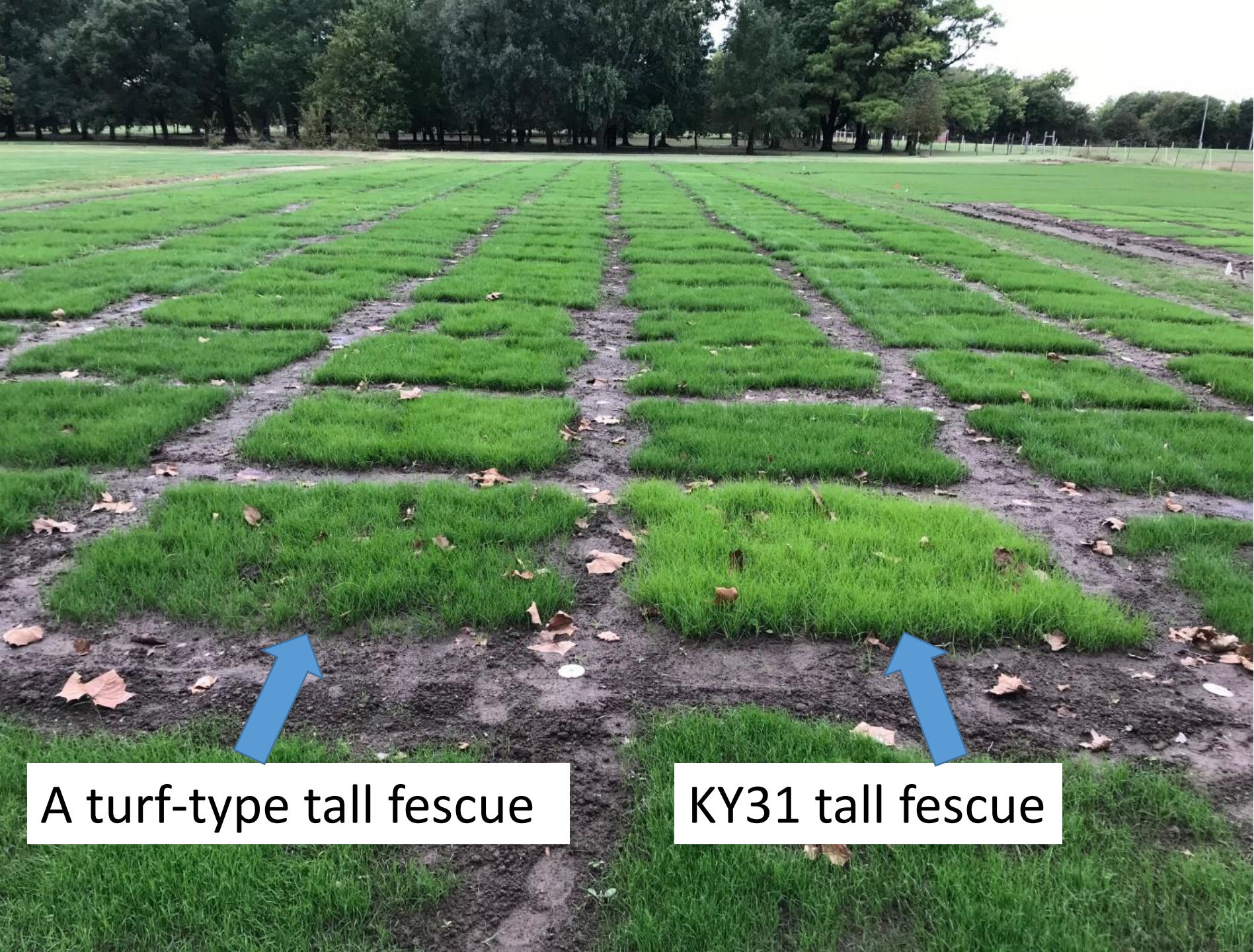


2018 NTEP Tall fescue trial – 130 entries



Tall fescue 26 days after seeding (DAS)

20 DAS



A turf-type tall fescue

KY31 tall fescue

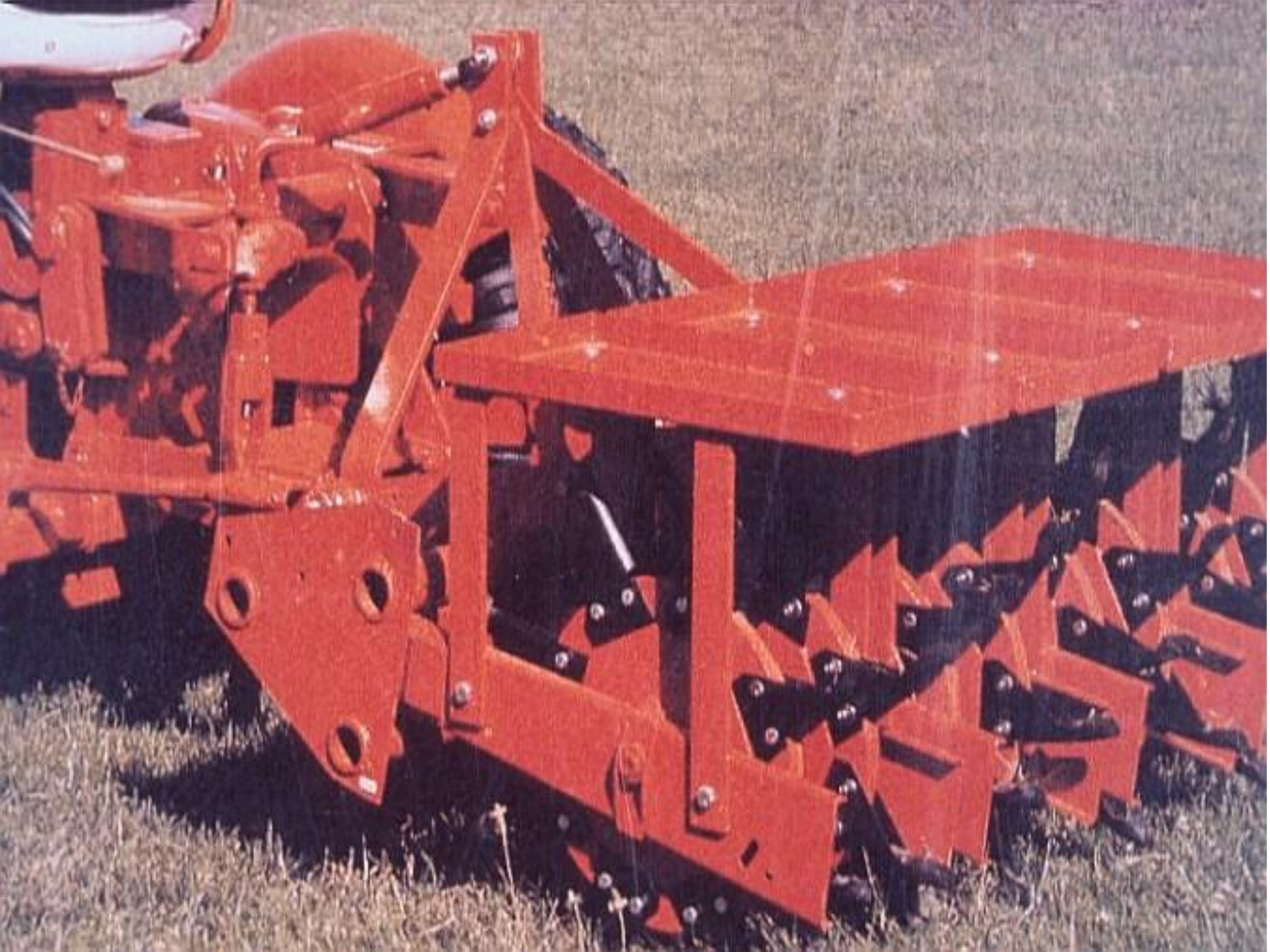
Aerification

Aerification



- provides proper aeration and soil water movement through soil
- remove 1/2" to 1" dia. cores at least 2" deep
 - warm-season grasses prior to greenup or during active growth if irrigation is present
 - cool-season grasses early fall





Irrigation



Soil Physical Problems

Poor surface and subsurface drainage



Installation of drain pipe to improve drainage



Fertilization



A close-up photograph showing a person's hands holding a small amount of dark brown soil. The person is wearing blue jeans and brown work boots. They are sitting on a grassy area. In front of them is a large, light-colored wooden bucket. Inside the bucket, there is a white plastic bag. The person is holding the soil over the bag, as if they are about to put it inside. The text "Soil Testing The Right First Step" is overlaid in white on the image.

Soil Testing The Right First Step

Soil Testing

- \$10.00 basic soil test for soil pH, N, P and K
- Tells you if liming is necessary
- Determines if phosphorus and potassium needed
- Determines nitrogen present which is helpful
- Helps you build the right fertilization program
- Correct fertilization is the basis of resiliency because **“a healthy plant is a more stress tolerant plant” – stress tolerance is the basis of resiliency!**
- **Drought resistance improves with a more extensive root system – your lawn’s root system is more extensive under proper soil fertility**

How to take a Soil Test

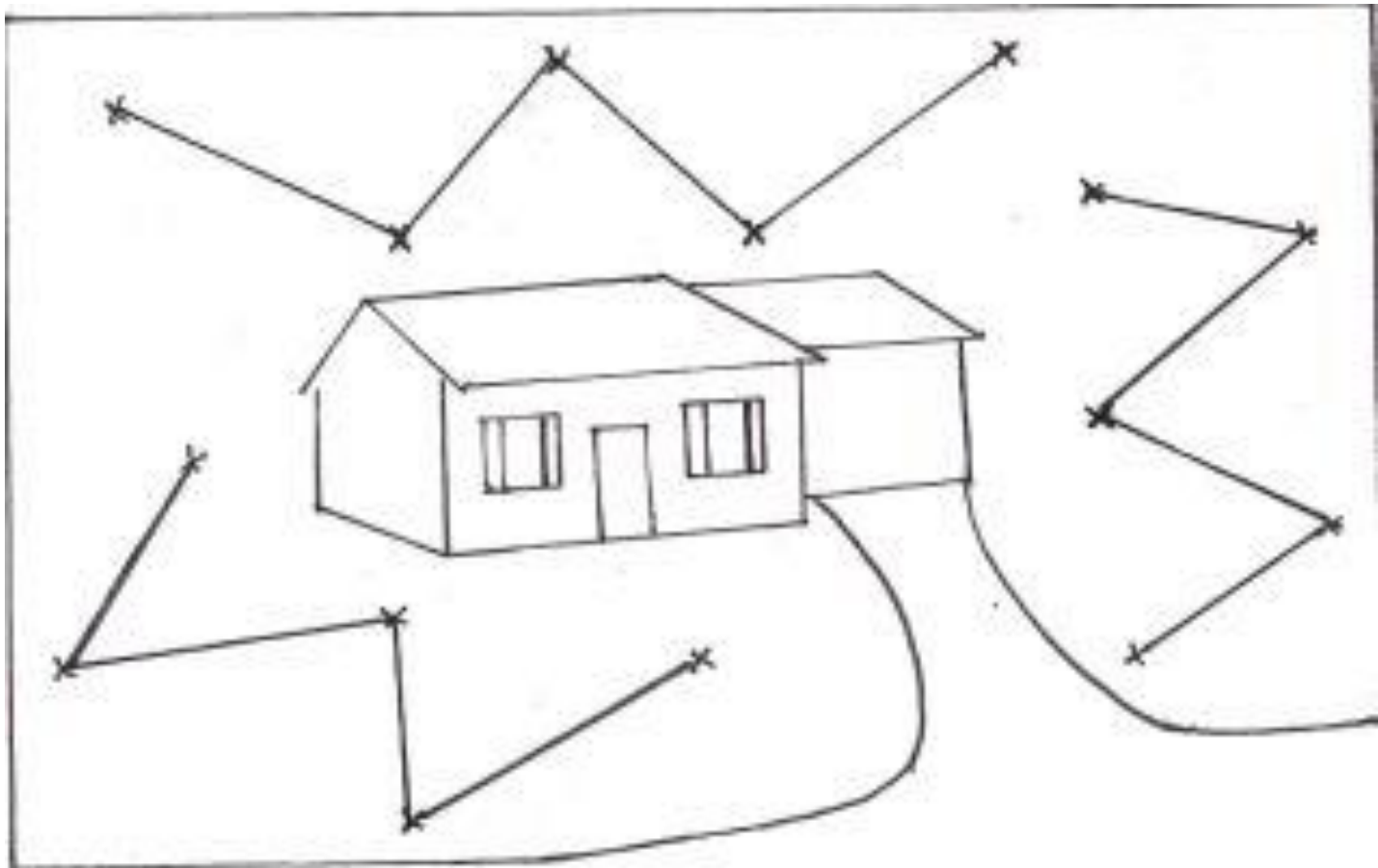
Sample from 0 to 3 or 0 to 6 inches deep?

Remove turf near soil surface



Collect and Mix Multiple Samples

A minimum of 10 samples per Site





Soil sampling

- Need about a pint of soil
- Take to OSU county extension office
- Expect results in 10 to 14 days
- Use results to adjust fertilizer programs or adjust pH of soil if necessary

OSU Turfgrass Fact Sheets

- <http://pods.dasnr.okstate.edu/docushare/dsweb/View/Collection-397>
- Or <http://bit.ly/2pQFBA6>

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