



# Preemergence Weed Control

## Before Weeds Emerge

-- more importantly --

## Before Weeds Germinate

# Preemergence weed control options

❖ Mulches prevent germination and establishment by excluding light

❖ Preemergence Herbicides  
Prevent seedling establishment

# Mulches : #1 defense against annual weeds



Bare ground

Mulched

# Mulches

- ❖ Control many annual weeds from seed
- ❖ Do not control perennial weeds from roots, tubers or rhizomes
- ❖ Must be replenished yearly



Pigweed:  
an annual  
weed  
controlled  
by  
mulches



Horsenettle: a perennial weed not controlled by mulches

# Mulches

- ✿ Types: organic, inorganic, geotextile
- ✿ Function: exclude light to prevent seed germination and seedling establishment
- ✿ Also, holds moisture and improves aesthetics

# Kinds of mulches





# What makes a good Mulch?

- ✿ Coarse texture to dry out
- ✿ Aesthetically pleasing
- ✿ Will not wash
- ✿ Relatively weed free
- ✿ Not phytotoxic



Lava rock – some like it,  
some don't



Bark nuggets wash easily



# Phytotoxic mulch?

- ✿ Anaerobic mulches can burn tender plants. Make sure mulches are properly composted and stored

- ✿ Pine straw can stunt pansy growth



Hand Weeded



Pine Straw Mulch

# Pansy beds



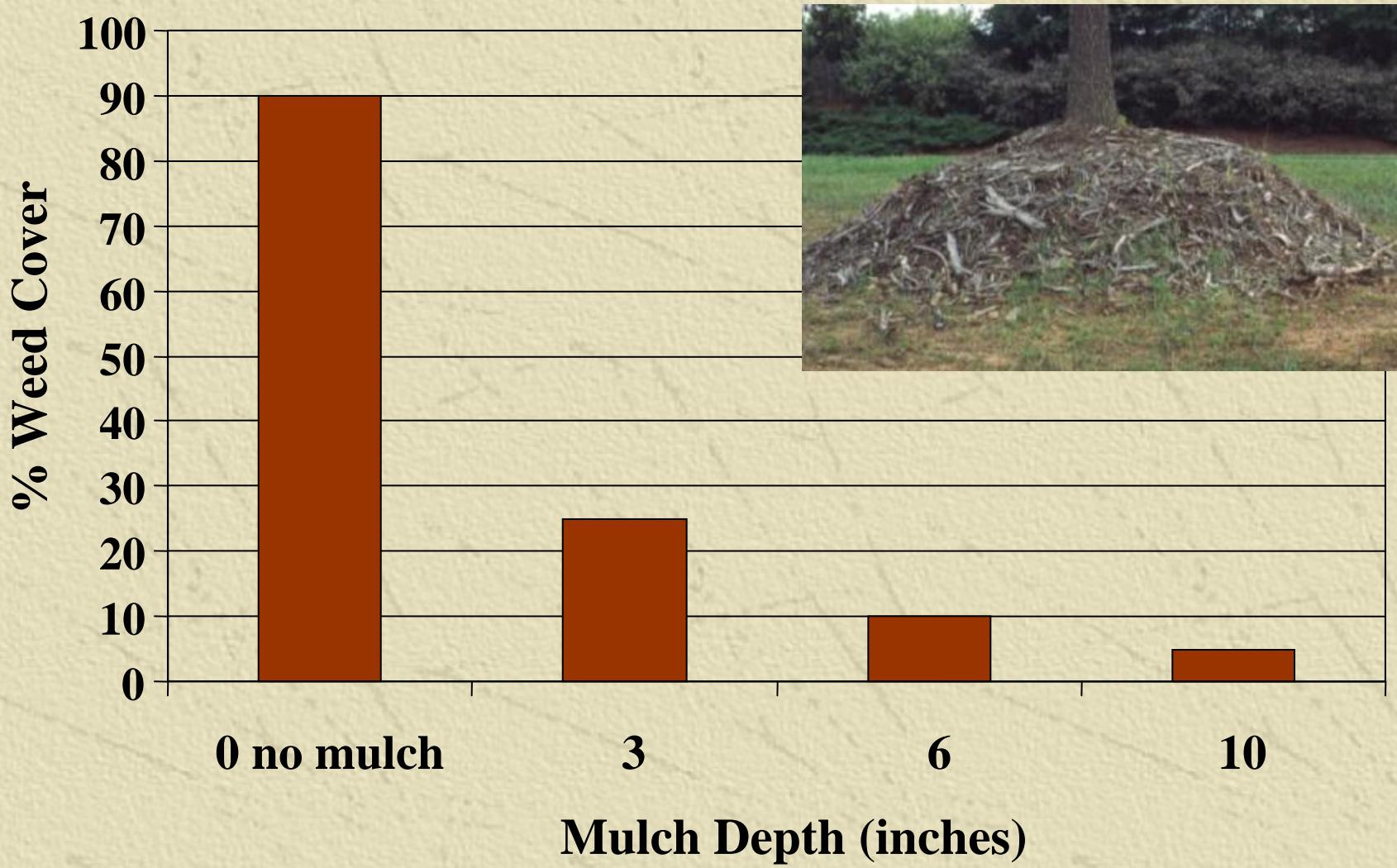
- ✿ Use a fine textured mulch around the plants – composts will do fine because they will be rototilled into the bed the following spring
- ✿ Edge the bed with pine straw to prevent washing

Most annual beds are done this way





# How much mulch is enough?



Source: Greenley and Rakow, 1991

# Mulches -- How Much?

❖ Organic mulches: ~ 3-4 in



❖ Inorganic mulches: ~ 3 in



❖ With a geotextile: ~ 2 in



# How Much Mulch Do You Need?

✿ Bark mulch: 1 cu yd  
covers ~ 100 sq ft to a  
depth of 3 inches



✿ Pine Straw: 1 bale covers  
about 35 sq ft.



# Geotextile fabrics

- # Woven or spun-bonded plastic fabrics
- # Allow water and air to penetrate
- # Often sold at “weed mats” or “weed fabrics”





# Geotextile fabrics -- Advantages

- ✿ Long term annual weed control
- ✿ Soil stabilization
- ✿ Holds moisture
- ✿ Possible add-on service \$\$

# Geotextile fabrics -- Disadvantages

- ❖ Cost – materials and installation
- ❖ Site preparation: eliminate perennial weeds
- ❖ Must cover with mulch
- ❖ Perennial weeds can penetrate
- ❖ Annual weeds grow on top
- ❖ Mulches slip off
- ❖ In heavy soils, it may hold too much moisture
- ❖ Decomposing organic mulches create a humus layer where weeds can germinate

# Geotextile fabrics do not control perennial weeds

- Vegetatively propagated perennial weeds can emerge through geotextile fabrics



Bermudagrass



Nutsedge



Mugwort

Many perennial  
weeds can  
growth through  
geotextile fabric  
mulches



Equisetum will emerge  
through geotextiles

# Weeds germinating on top can grow through the mulch



- ✿ Roots penetrate the fabric more easily than shoots



Weeds growing through the mulch damage the geotextile

# Biggest problem with geotextiles is proper installation



Not installed  
correctly:  
Edges come  
up, mulch  
washes off.

Unsightly and  
ineffective.

# Steps in proper installation



- ✿ Dig trench around perimeter of bed



# Step 2: place geotextile over bed

- ✿ Install geotextile over plants.  
Don't try to plant through the bed
- ✿ Dirt on top of the fabric leads to weeds.



# Step 3: Anchor edges in SOIL (not mulch)



- ✿ Bury edges in soil. [remember, roots will grow through the fabric]
- ✿ Mulch-only will allow edges to come up

# Step 4: Cover with enough mulch to prevent light degradation



# Types of Geotextile fabrics

✿ Lots of different types:

- ◆ Spun bonded
- ◆ Woven
- ◆ Needle punched

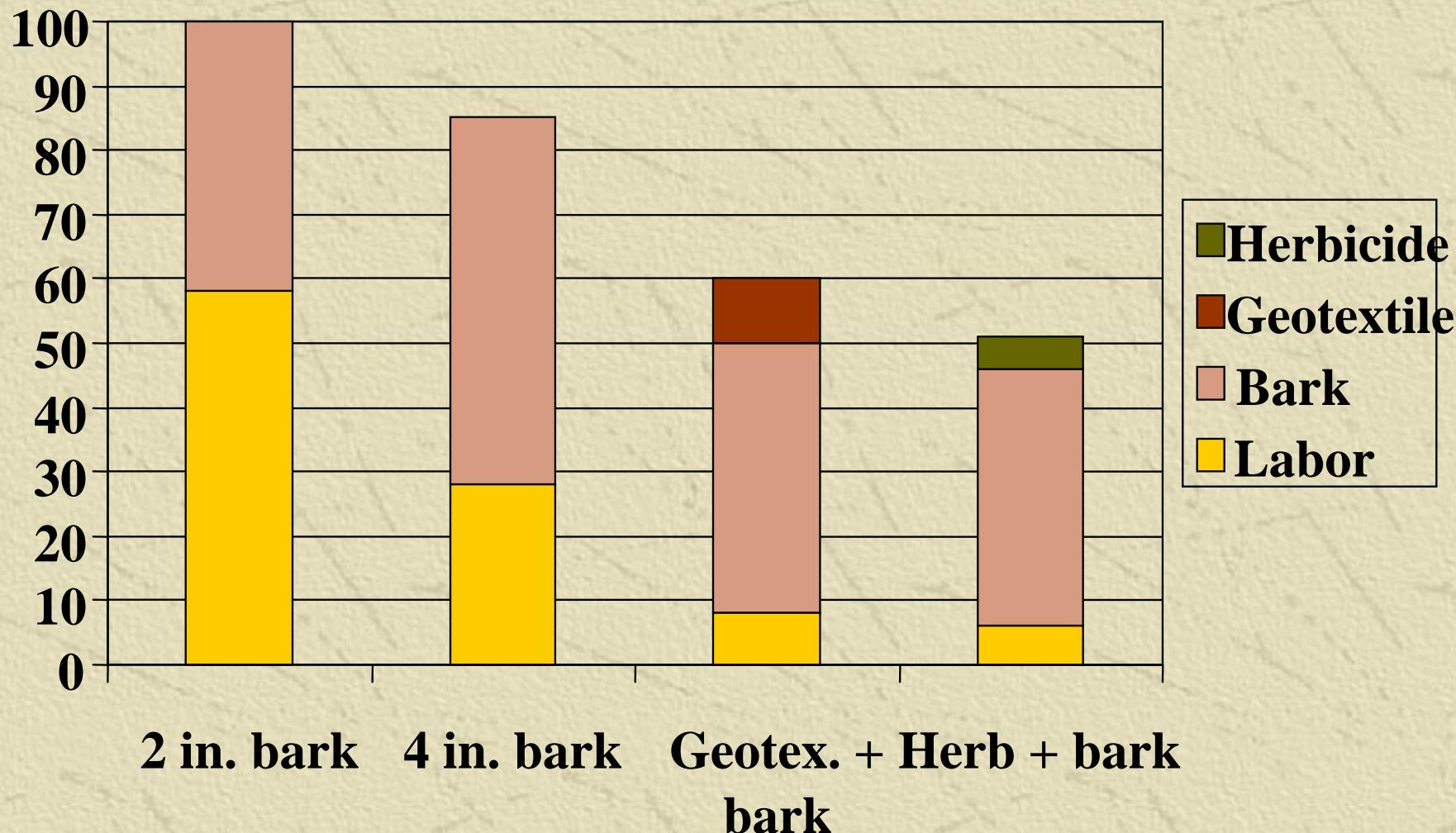
✿ Yes, between consumer and professional grade products.

✿ Smooth vs. textured can make a difference on slopes. Mulches slip off smooth more easily. Install with fiber side up.

# Advice: if you use a geotextile

- ❖ Control perennial weeds before planting
- ❖ Use shallow layers of mulch
- ❖ Keep geotextiles totally covered
- ❖ Remove / kill emerged weeds when small
- ❖ Consider using inorganic mulches
- ❖ Consider preemergence herbicide with geotextile when weeds become abundant or for yellow nutsedge control

# Relative Weed Control Costs



# Biobarrier: An Alternative?

- ❖ Geotextile fabric impregnated with trifluralin
- ❖ Prevents most weeds from growing through the fabric



# Some Weeds Like Growing in Mulches

Herbicides are  
sometimes needed

