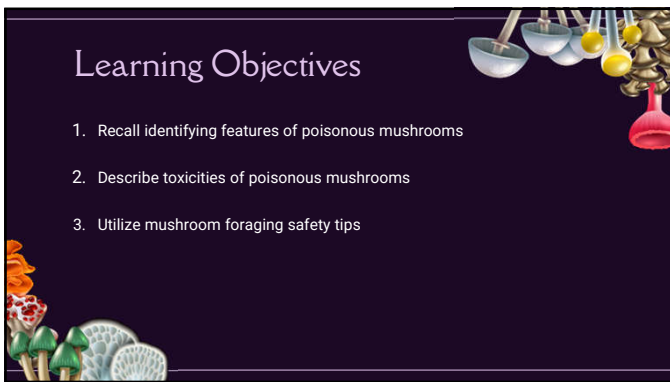
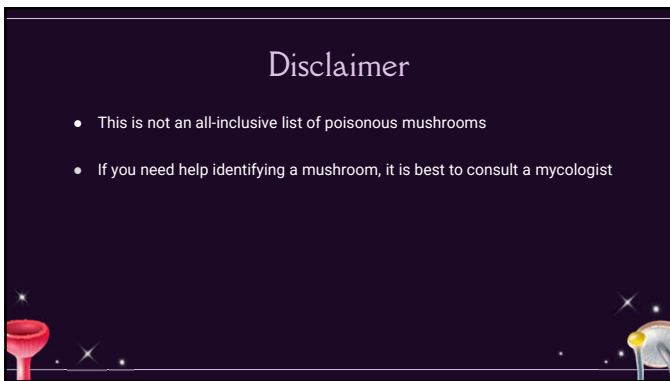


1



2



3

What is a Mushroom?

- Mushroom is the **fruiting body of a fungus** → reproductive structure
- Fungi **lack chlorophyll**, making them unable to photosynthesize
- Fungi **obtain food by using enzymes** to break down organic matter

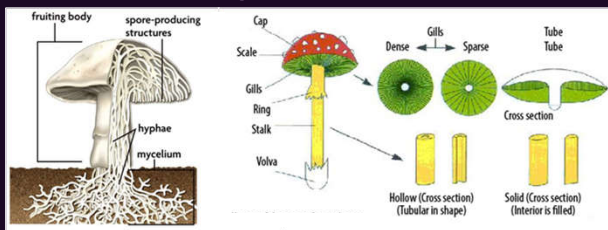
4

Mushrooms and Toxicology

- < 0.25% of reported human exposures
- Majority of mushroom ingestions are **not lethal**
- > 100,000 mushroom species exist; < 0.1% are known to be toxic

5


Anatomy of a Mushroom



6

Death Cap

Scientific name	<i>Amanita phalloides</i>
Identifying features	<ul style="list-style-type: none"> • White gills • Ring/veil • Cup (underground)
Toxin(s)	Cyclopeptide
Symptoms if ingested	<ul style="list-style-type: none"> • Nausea, vomiting, diarrhea (early) • Liver failure, kidney failure (late)
Symptom onset	<ul style="list-style-type: none"> • Early symptoms: 5-24 hours • Late symptoms: 2-6 days
Symptom duration	Initial symptoms resolve for 12-26 hours



7

How confusing can it be?



Amanita citrina v. alba *Leucoagaricus leucothites* *Amanita bisporigera* (DEADLY)

Amanita princeps *Amanita phalloides* (DEADLY)

8

Peach-colored Fly Agaric

Scientific name	<i>Amanita perscincia (muscaria)</i>
Identifying features	<ul style="list-style-type: none"> • Peach-colored cap with white spots • White gills • Bulb and veil
Toxin(s)	Ibotenic acid and muscimol
Symptoms if ingested	<ul style="list-style-type: none"> • Hallucinations, delirium • Dizziness, tiredness • Seizures
Symptom onset	20 minutes to 5 hours
Symptom duration	Varies



9

False Morel

Scientific name	<i>Gyromitra esculenta</i>
Identifying features	<ul style="list-style-type: none"> • Brown to reddish brown • Brain-like
Toxin(s)	Gyromitrin
Symptoms if ingested	<ul style="list-style-type: none"> • Nausea, vomiting, abdominal pain • Headache, weakness, cramping • Rare: seizures, delirium
Symptom onset	5 to 10 hours
Symptom duration	2 to 7 days



10

False morel vs. True morel



11

Alcohol Inky, Inky Cap

Scientific name	<i>Coprinopsis atramentaria</i>
Identifying features	<ul style="list-style-type: none"> • Habitat: decomposing wood • Color: gray to gray brown • Cap: bell-shaped to convex • Gills: white, hollow → inky with age • Spores: black
Toxin(s)	Coprine
Symptoms if ingested*	<ul style="list-style-type: none"> • Nausea, vomiting, flushing, tachycardia
Symptom onset	48 to 72 hours
Symptom duration	1 to 2 hours



*if alcohol is ingested.


12



13

Jack-o-Lantern Mushroom

Scientific name	<i>Omphalotus illudens</i>
Identifying features	<ul style="list-style-type: none">• Habitat: decomposing wood• Color: bright orange• Cap: smooth & convex → upturned• Gills: closely, decurrent, orange• Spores: white to pale yellow
Toxin(s)	Illudin
Symptoms if ingested	<ul style="list-style-type: none">• GI symptoms (nausea, vomiting, diarrhea)
Symptom onset	15 minutes to 2 hours
Symptom duration	Varies




14



15

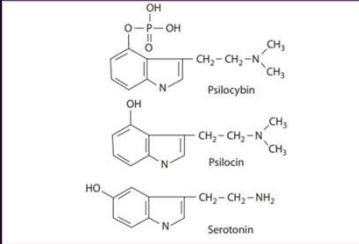
Magic Mushrooms

Scientific name	<i>Psilocybin cubensis</i>
Identifying features	<ul style="list-style-type: none"> Habitat: small groups on dung of herbivores (nitrogen rich soil) Color: whitish/pale, yellowish brown, darkest in center, bluish on margin Cap: bell-shaped → flat Gills: notched, close, white/gray Spores: purple-brown
Toxin(s)	Psilocybin → psilocin
Symptoms if ingested	<ul style="list-style-type: none"> Hallucinations, visual distortions, mydriasis, ataxia, tachycardia, tremor
Symptom onset	1 to 2 hours
Symptom duration	6 to 12 hours



16

Structural Similarity



17

Galerinia marginata vs. *Psilocybe cyanescens*

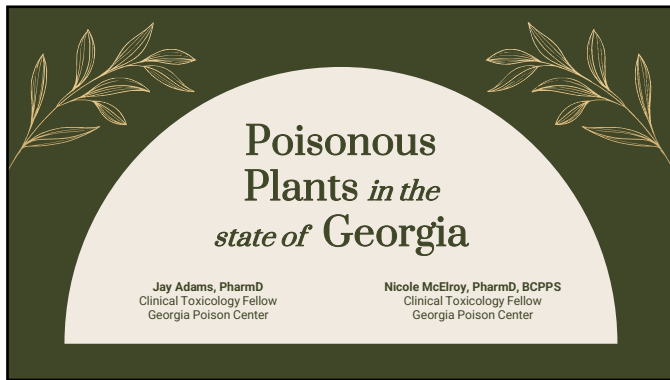


18

Foraging Dos and Don'ts

<p style="text-align: center;">DOs</p> <ul style="list-style-type: none">• Use caution when collecting mushrooms in unfamiliar territories• Recognize look-a-likes• Bring two baskets, one for mushrooms you definitely know are safe, one for those you are unsure of	<p style="text-align: center;">DON'Ts</p> <ul style="list-style-type: none">• Don't harvest in toxic areas• Don't harvest rare or exotic mushrooms• Wear gloves!
---	---

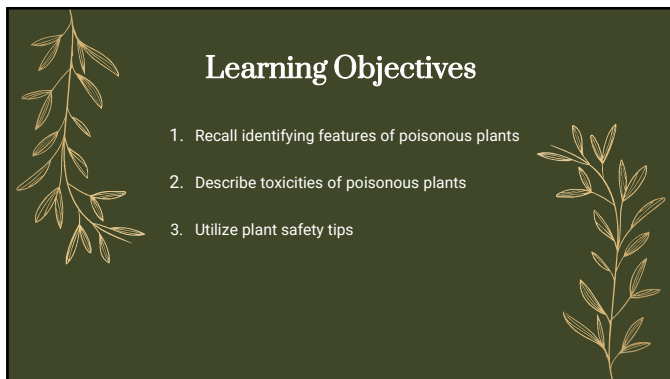
19



**Poisonous
Plants *in the*
state of Georgia**

<p>Jay Adams, PharmD Clinical Toxicology Fellow Georgia Poison Center</p>	<p>Nicole McElroy, PharmD, BCPPS Clinical Toxicology Fellow Georgia Poison Center</p>
--	--

20



Learning Objectives

1. Recall identifying features of poisonous plants
2. Describe toxicities of poisonous plants
3. Utilize plant safety tips

21


Disclaimer

- This is not an all-inclusive list of poisonous plants
- If you need help identifying a plant, it is best to consult a botanist

22

Water Hemlock


Scientific name	<i>Cicuta maculata</i>
Identifying features	<ul style="list-style-type: none">• Grows 2 to 6 feet tall
Toxin(s)	Cicutoxin
Organ affected	Brain
Symptoms if ingested	<ul style="list-style-type: none">• Nervousness, tremors• Excessive mouth watering• Seizures
Symptom onset	15 minutes
Symptom duration	Varies



23


Water Hemlock vs. Queen Anne's Lace

How to Spot the Difference

Queen Anne's Lace	Poison Hemlock
	



Protect Yourself!

24




Foxglove

Scientific name	<i>Digitalis purpurea</i>
Identifying features	<ul style="list-style-type: none"> • Downward, bell-shaped, pink-purple flowers • Up to 5 feet in height
Toxin(s)	Digitoxin, digoxin
Organ affected	Heart
Symptoms if ingested	<ul style="list-style-type: none"> • Vomiting, headache • Abnormal heart rhythms • High or low heart rate
Symptom onset	Hours
Symptom duration	Hours to days






25




Lily of the Valley

Scientific name	<i>Convallaria majalis</i>
Identifying features	<ul style="list-style-type: none"> • White, downward, bell-shaped, sweetly scented flowers • Leafless flower stalk
Toxin(s)	Convallatoxin, strophanthin
Organ affected	Heart
Symptoms if ingested	<ul style="list-style-type: none"> • Vomiting, headache • Abnormal heart rhythms • High or low heart rate
Symptom onset	Hours
Symptom duration	Hours to days






26



Monkshood



Scientific name	<i>Aconitum</i>
Identifying features	<ul style="list-style-type: none"> • Purple/blue hood-shaped flower • 1 to 3 feet high
Toxin(s)	Aconitine <ul style="list-style-type: none"> • Highest concentration in roots, seeds
Organ affected	Heart, brain
Symptoms if ingested	<ul style="list-style-type: none"> • Tingling, paralysis, seizures • Low heart rate, abnormal heart rhythm • Nausea, vomiting, cramping
Symptom onset	Minutes
Symptom duration	3 to ~24 hours

27

Castor beans



Scientific name	<i>Ricinus communis</i>
Identifying features	<ul style="list-style-type: none"> • Annual evergreen 1-5m tall • Red to green or purple stems • Flowers: 5-parted, bloom Aug-Nov • Fruit: Red, green, or purple spiny, capsules containing 3 seeds
Toxin(s)	Ricin
Organ affected	Stomach, heart, liver, kidney
Symptoms if ingested	<ul style="list-style-type: none"> • Nausea • Low blood pressure • Liver and kidney dysfunction
Symptom onset	4 to 8 hours depending on route of exposure
Symptom duration	4 to 36 hours

28

Jimsonweed, Devil's Trumpet


Scientific name	<i>Datura stramonium</i>
Identifying features	<ul style="list-style-type: none"> • Typically grown in canola fields • Prickly, round seedpod • Flowers are trumpet-shaped (white to purple color)
Toxin(s)	Atropine, scopolamine, hyoscyamine
Organ affected	CNS, heart, skin, bladder,
Symptoms if ingested	<ul style="list-style-type: none"> • Fever • Elevated heart rate • Dry skin/mouth
Symptom onset	1 to 4 hours, more rapid if smoked
Symptom duration	Hours to days


29

Deadly nightshade, Belladonna



Scientific name	<i>Atropa belladonna</i>
Identifying features	<ul style="list-style-type: none"> • Fruit resembles black/shiny cherry • Dark green leaves, oval and unevenly shaped • Bell-shaped, dull purple flowers with green tinge
Toxin(s)	Belladonna alkaloids
Organ affected	Brain, heart, skin, bladder
Symptoms if ingested	<ul style="list-style-type: none"> • Fever • Elevated heart rate • Dry skin/mouth
Symptom onset	1 to 4 hours, more rapid if smoked
Symptom duration	Hours to days




30

 **Pokeweed**


Scientific name	<i>Phytolacca americana</i>
Identifying features	<ul style="list-style-type: none">• Large rootstock• 2-10 feet tall by 2-3 feet wide• Greenish-white flower
Toxin(s)	Phytolaccotoxin
Organ affected	Stomach
Symptoms if ingested	<ul style="list-style-type: none">• Nausea• Vomiting• Diarrhea• Abdominal cramps
Symptom onset	30 minutes to 6 hours




31

 **Plant Safety**


- Know the names of all the plants in your home and yard
 - A nursery, florist or your county extension agent can help you to identify a plant
 - Label all your plants with their names so you can tell what it is if a piece has been eaten
- Keep house plants, seeds and bulbs out of the reach and sight of children and pets
- Keep weed and bug killers in a locked cabinet, out of reach of children and pets
 - Never put them in bottles used for drinking
 - Keep children and pets away from lawns recently treated with chemicals



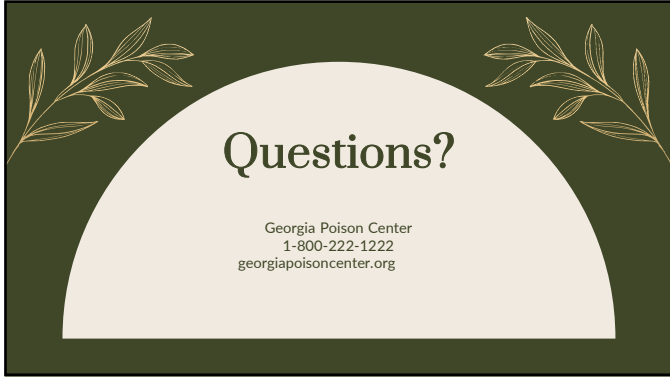
32

 **Plant Safety**

- Do not eat wild plants or mushrooms
 - Remove mushrooms that are growing in your yard
 - Throw them away in a covered garbage can
 - Teach your children to never put any part of a plant into their mouths
 - Cooking poisonous plants does not make them safe to eat



33



34
