

Soil Chromatography

Materials/Equipment

- 125cc flasks
- Qualitative filter paper
- 0.5% AgNO_3 solution
- 1% NaOH solution
- Petri dishes
- Graduated cylinders
- Indirect sunlight
- Dirt!

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Post-Anthropocentric
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Study@ifpae.org



Filter Prep

(Do all of this in (⌘ store ⌘ dry)
in low-light!)

1. Punch hole in center of filter
2. Create wick from filter paper
(Roll a 1" wide strip to make a "straw")
3. Mark 1 1/2 in & 2 1/2 in @ L Angles
4. Pour 3-5ml of 0.5% AgNO_3 into petri dish, let absorb until 1 1/2 in mark.
5. Dry! Good for 3 days

(0.15-0.25mg AgNO_3
to 3-5ml H_2O)

(0.5% AgNO_3 means a ratio of 0.5g/100ml)

Soil Prep

1. mix 5g soil w/ 50ml of

1% NaOH solution

(5g NaOH / 50ml H_2O)

2. Swirl, wait 15 mins, swirl, wait 60 mins
swirl, wait 5 hours, swirl.

3. Cap, keeps for 24 hrs

Testing (Prep in low - light)

1. 5ml soil extract into petri dish
(same technique as filter prep)

2. rest treated disc (w/ NEW filter)
on petri dish.

3. let absorb until merck 2

4. Place in indirect sunlight until
vibrant.

DISPOSAL! $AgNO_3$ solution can be recycled,
or disposed in a supersaturated salt-
water mix, diluted, & down the drain. NaOH can go
down the drain.

Safety: Always wear gloves & eye pro. Work
in well-ventilated areas.

READING CHROMATOGRAPHS

In general, smoother, softer, and more varied shapes and transitions that are warmly brown, yellow, orange, or red, suggest a healthy and biodiverse soil. Here's some specific features to look for!

INTERMEDIATE ZONE
IDENTIFIES ORGANIC
MATTER CONTENT

FADING IN
CENTRAL ZONE
IDENTIFIES
OXYGENATION

WAVY RADIAL STRUC-
TURE SUGGESTS BIO-
MINERAL INTEGRATION

INNER ZONES INDICATE
MINERAL CON-
TENT AND FUNGAL
ACTIVITY

TERMINAL
NODES INDICATE
ENZYME ACTIVI-
TY

SMOOTHER RING
TRANSITIONS
SHOW ORGANIC
MATTER
INTEGRATION

INTERNODE
STAINING SHOWS
NUTRIENT AVAILABILITY

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