How the bird’s nest fern (*Asplenium nidus* L.)

Whether the bird’s nest fern increase the species richness of epiphyte?

If it does, whether the soil microbes contribute to the effect?

Whether the soil of a bird’s nest fern is affected by the litter of the host tree?

Whether the soil microbe community different among the bird’s nest fern on different host trees?

How will the species composition on different size of the fern will be?

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Control the large-scale environmental factor: choose the host tree with the same environment (e.g. along the creek?)

Control the microclimate:

Choose the host tree with a similar DBH or height.

Choose the sample from the lowest branch with the control height range

Get three samples for each tree with different sizes/ages (size range?)

Record the distance to the ground, the distance to the branch, size of the fern and species composition

Soil sample

Fern soil

Control soil on the branch

host of the bird’s nest fern: with different family

PSF

Is the soil microbiome change with the age of the fern?

Does the age of the fern also include the positive effect of other colonizers that benefit them for colonizing?

When more and more species colonizing into the fern how will the microbiome change?

IBT

size, isolation, and age of the bird’s nest fern

the bigger the fern the older it is (?

How is the species composition on the bird’s nest fern? Is the size include the different richness of the species?

other environmental factors

height of the bird’s nest fern

species diversity of a bird

choose the tree species

sample with a different host and also with different size

record the height

location of the fern

collect soil

1.山蘇花(Asplenium antiquum Makino)：植株叢生成巢狀，單葉，葉身向下延至基部，葉脈 在葉緣處聯合形成網脈，孢膜長，長於中軸到葉緣的一半。產於中海拔山區。

2.臺灣山蘇花(Asplenium nidus Linn. )：植株叢生成巢狀，葉革質，單葉，葉身向下延至基 部葉脈在葉緣處聯合，形成網脈，孢膜短，短於中軸到葉緣的一半。葉片較狹長，葉片 先端較突，葉緣呈波狀，葉背孢子囊線形，長於葉片上半葉兩側中央，中肋較粗，作為 蔬菜生產時產量較高。產於中低海拔山區。

3.南洋山蘇花(Asplenium australasicum (J. Sm. ) Hook.)：外形似山蘇花，但其中肋遠軸面具 隆起之脊，且具極短之柄，此外，孢膜長約為中軸到葉緣的一半。產於低海拔山區。

\*炒山蘇大多為南洋山蘇

<http://kplant.biodiv.tw/%E5%8F%B0%E7%81%A3%E5%B1%B1%E8%98%87%E8%8A%B1/%E5%8F%B0%E7%81%A3%E5%B1%B1%E8%98%87%E8%8A%B1.htm\>

先祐’s thesis

species composition of epiphyte is different below the bird’s nest fern

Three common species that grow below the bird’s nest fern

***Ophioderma pendula 帶狀瓶爾小草***

Vittaria zosterifolia 垂葉書帶蕨

Asplenium neolaserpitiifolium 大黑柄鐵角蕨