

Pest Status



Suputa
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References

ISPM 8

- https://www.ippc.int/static/media/files/publications/en/1323945129_ISPM_08_1998_En_2011-11-29_Refor.pdf

Update on the Host Range of Different Species of Fruit Flies in Indonesia.

Suputa, Y.A. Trisyono, E. Martono, & S.S. Siwi, 2010. *Indonesian Journal of Plant Protection*. 16 (2): 62-75.

Pest status

The determination of **pest status requires expert judgement concerning the information available on the** present-day occurrence of a pest in an area

Pest status

Pest status **is determined using information from:**

- individual pest records
- pest records from surveys
- data on pest absence
- findings of general surveillance
- scientific publications and databases

Pest status

- presence of the pest
- absence of the pest
- transience of the pest

Presence

in all parts of the area

only in some areas

except in specified pest free areas

in all parts of the area where host crop(s) are grown

only in some areas where host crop(s) are grown

only in protected cultivation

seasonally

but managed

subject to official control

under eradication

at low prevalence

Absent: no pest records

General surveillance indicates that the pest is absent now
and has never been recorded

Absent: pest eradicated

Pest records indicate that the pest was present in the past. A documented pest eradication programme was conducted and was successful. Surveillance confirms continued absence.

Absent: pest no longer present

Pest records indicate that the pest was transient or established in the past, but general surveillance indicates the pest is no longer present.

The reason(s) may include:

- climate **or other** natural limitation **to** pest perpetuation
- **changes in** hosts cultivated
- **changes in** cultivars
- **changes in** agricultural practices

Absent: pest records invalid

Pest records indicate the presence of a pest, **but the conclusion is reached that the records are invalid or no longer valid, as in the following officially declared cases:**

- **changes in taxonomy**
- misidentification (Bactrocera = Dacus Kalshoven, 1951)

DIPTERA

Tephritidae

The difference between *Bactrocera* spp. and *Dacus* spp.



Bactrocera cucurbitae



Dacus longicornis

DIPTERA

Tephritidae

The difference between *Bactrocera* spp. and *Dacus* spp.



Dacus ciliatus

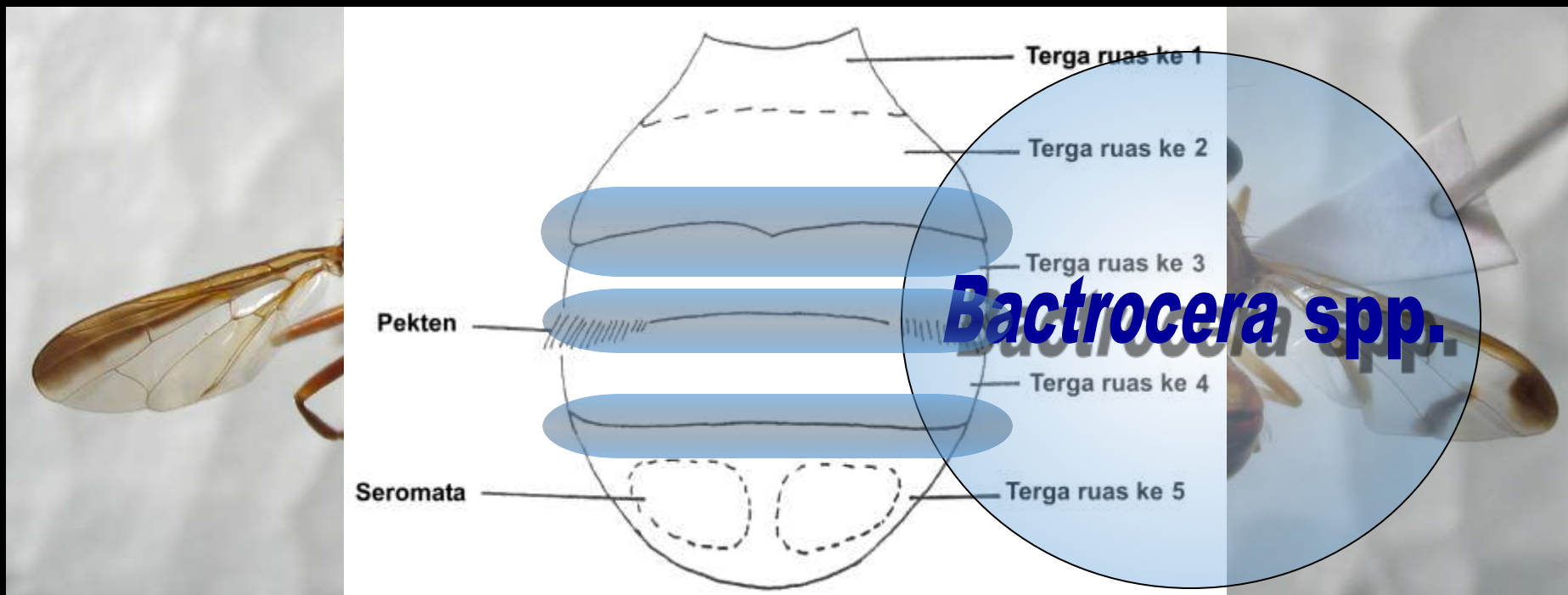


Bactrocera minax

DIPTERA

Tephritidae

The difference between *Bactrocera* spp. and *Dacus* spp.



Dacus longicornis

Bactrocera cucurbitae

Absent: pest records invalid

Pest records indicate the presence of a pest, **but the conclusion is reached that the** records are invalid **or** no longer valid, as in the following officially declared cases:

- **changes in** taxonomy
- misidentification
- erroneous **record**
- changes in national borders **where reinterpretation of the record may be needed**

Absent: pest records unreliable

Pest records indicate the presence of a pest, **but the determination leads to the conclusion that** the records are unreliable, as in the following officially declared cases:

- ambiguous nomenclature
- outdated identification **or diagnostic** methods
- records cannot be considered reliable

Our Fruit Flies!
DORSALIS COMPLEX
or
Not

Supurb@





Thorax predominantly black



Thorax not predominantly black



Lateral postsutural vittae present



Lateral postsutural vittae absent



Medial postsutural vitta absent



Lateral presutural vittae absent



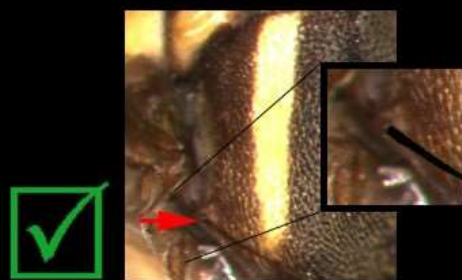
Medial postsutural vitta present



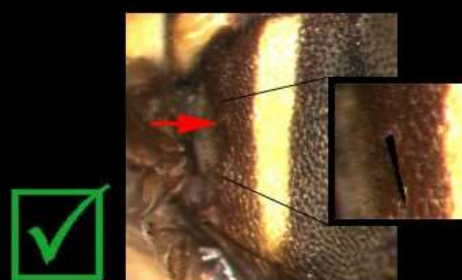
Lateral presutural vittae present

Ciri-ciri Morfologi Lalat Buah Dorsalis complex

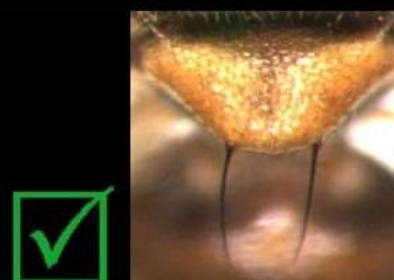
Ciri-ciri Morfologi Lalat Buah *Dorsalis complex*



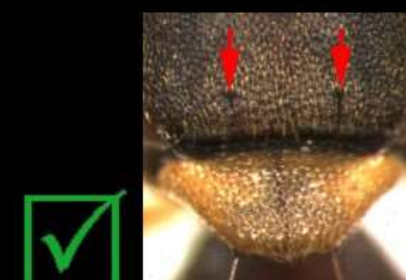
Posterior supra alar bristles present



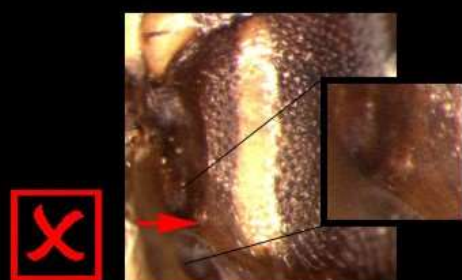
Anterior supra alar bristles present



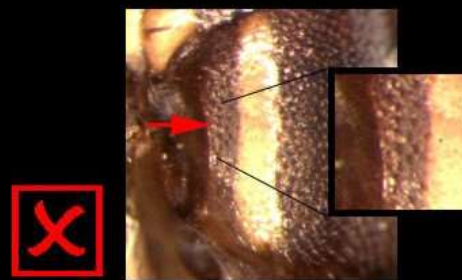
2 Scutellar bristles present



Prescutellar bristles present



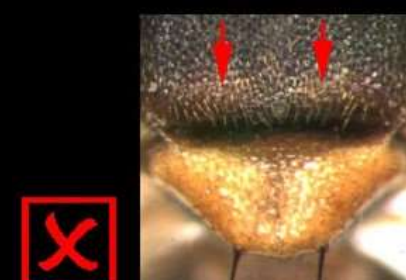
Posterior supra alar bristles absent



Anterior supra alar bristles absent



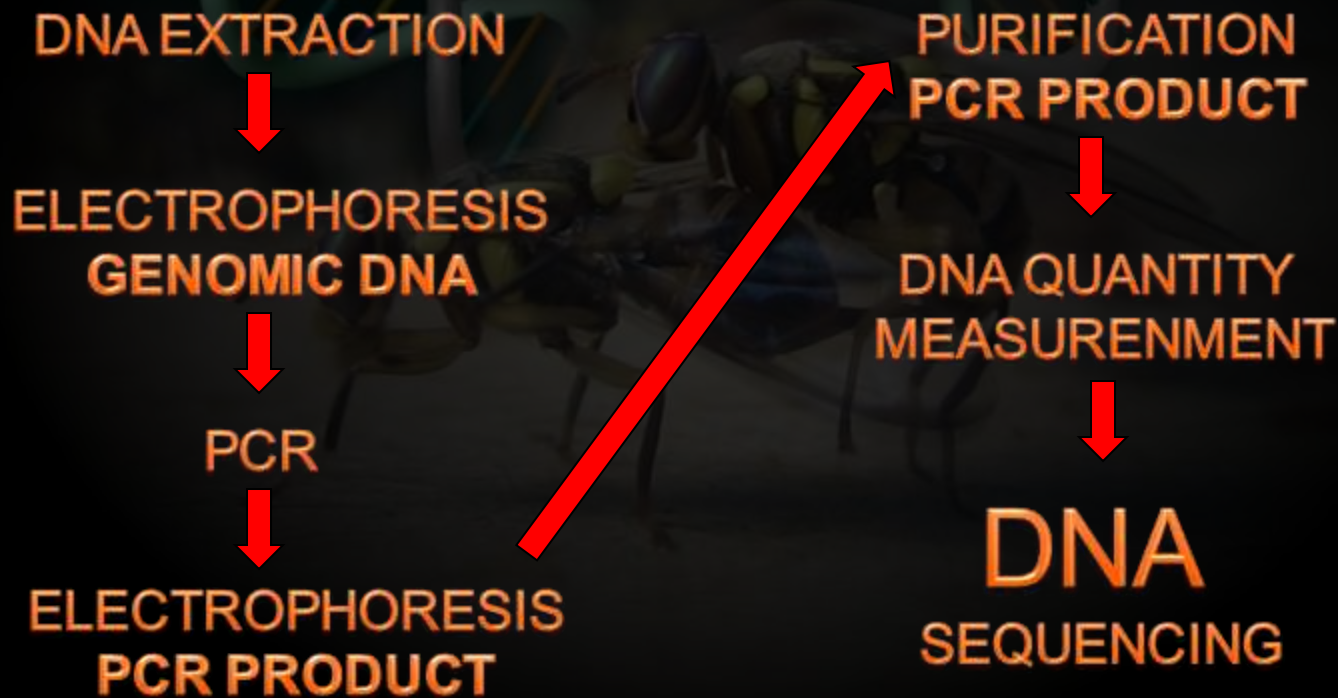
> 2 Scutellar bristles present



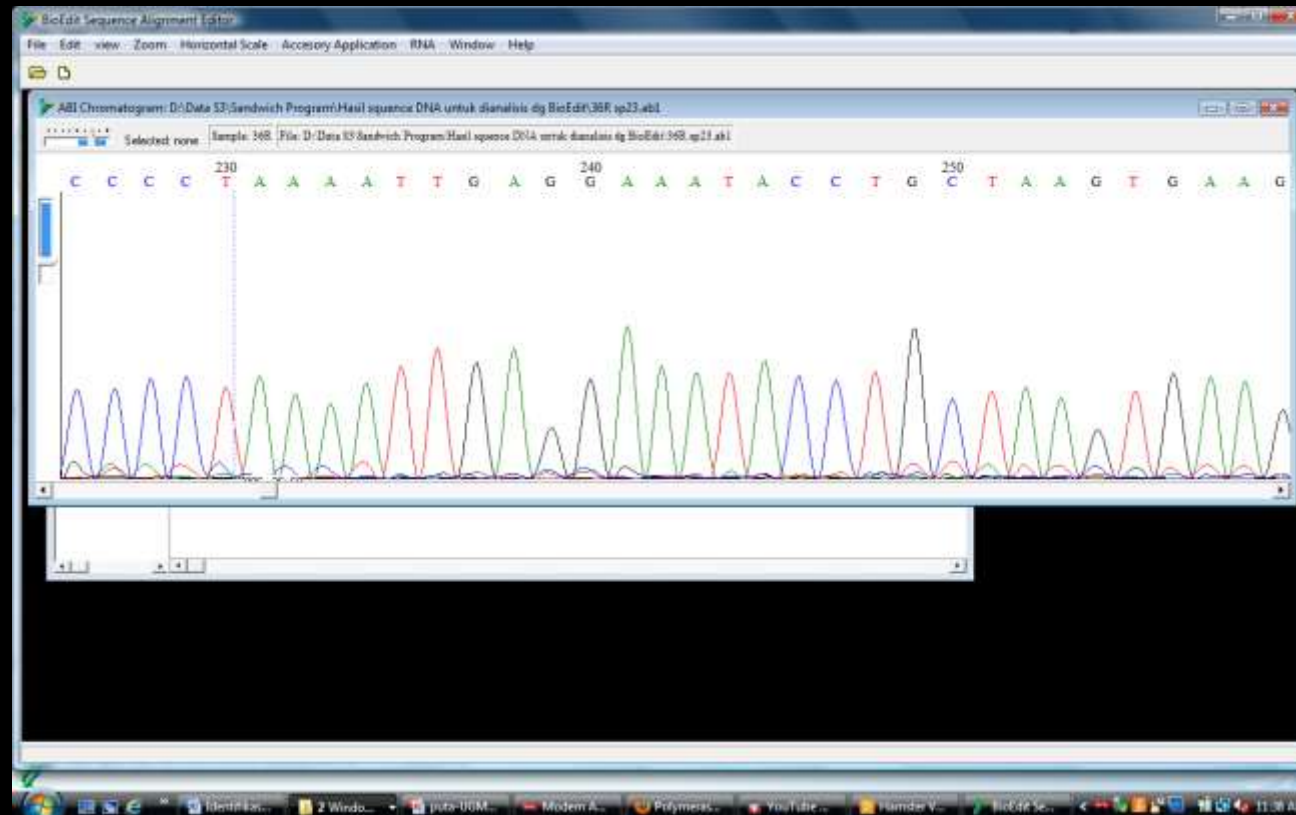
Prescutellar bristles absent



Identification of Fruit Fly Species using DNA analysis



Identification of Fruit Fly Species using DNA analysis



Identification of Fruit Fly Species using DNA analysis

NCBI Blast Nucleotide Sequence (422 letters) - Windows Internet Explorer

http://blast.ncbi.nlm.nih.gov/Blast.cgi?CMD=GetALIGNMENT&ALIGNMENT_VIEW=Pairwise&DATABASE_SORT=0&DESCRIPTIONS=100&FIRST_QUERY_M...

NCBI Blast Nucleotide Sequence (422 letters)

Descriptions

Legend for links to other resources: UniGene GEO Gene Structure Map Viewer PubChem BioAssay

Sequences producing significant alignments:

Accession	Description	Max score	Total score	Query coverage	E value	Max ident	Links
DQ116257.1	<i>Bactrocera carambolae</i> isolate FF1039 cytochrome oxidase subunit 1	780	780	100%	0.0	100%	
DQ116258.1	<i>Bactrocera carambolae</i> isolate FF1041 cytochrome oxidase subunit 1	774	774	100%	0.0	99%	
F0214414.1	<i>Bactrocera carambolae</i> mitochondrion, complete genome	769	769	100%	0.0	99%	
DQ116255.1	<i>Bactrocera carambolae</i> isolate FF675 cytochrome oxidase subunit 1	763	763	100%	0.0	99%	
DQ116278.1	<i>Bactrocera papayae</i> isolate FF1074 cytochrome oxidase subunit 1 (C	758	758	100%	0.0	99%	
DQ090871.1	<i>Bactrocera carambolae</i> voucher Q017_1 cytochrome oxidase subunit	758	758	100%	0.0	99%	
HQ962994.1	Diptera sp. BOLD:AAA2295 voucher BanF12 cytochrome oxidase sub	752	752	100%	0.0	98%	
HQ962993.1	Diptera sp. BOLD:AAA2295 voucher BanF11 cytochrome oxidase sub	752	752	100%	0.0	98%	
HQ962991.1	Diptera sp. BOLD:AAA2295 voucher BanF09 cytochrome oxidase sub	752	752	100%	0.0	98%	
HQ962988.1	Diptera sp. BOLD:AAA2295 voucher BanF07 cytochrome oxidase sub	752	752	100%	0.0	98%	
GJ682019.1	Diptera sp. BOLD:AAA2295 voucher NISGE IMB-00202 cytochrome o	752	752	100%	0.0	98%	
F020487.1	<i>Bactrocera papayae</i> isolate MY001COI cytochrome oxidase subunit 1	752	752	100%	0.0	98%	
DQ0917678.1	<i>Bactrocera papayae</i> isolate SH63 mitochondrion, complete genome	752	752	100%	0.0	98%	
DQ116271.1	<i>Bactrocera papayae</i> isolate FF706 cytochrome oxidase subunit 1 (C	752	752	100%	0.0	98%	
DQ116281.1	<i>Bactrocera dorsalis</i> isolate FF1094 cytochrome oxidase subunit 1 (C	752	752	100%	0.0	98%	
DQ116280.1	<i>Bactrocera dorsalis</i> isolate FF1092 cytochrome oxidase subunit 1 (C	752	752	100%	0.0	98%	
DQ116279.1	<i>Bactrocera dorsalis</i> isolate FF990 cytochrome oxidase subunit 1 (COI	752	752	100%	0.0	98%	
DQ116275.1	<i>Bactrocera dorsalis</i> isolate FF989 cytochrome oxidase subunit 1 (COI	752	752	100%	0.0	98%	
DQ116273.1	<i>Bactrocera dorsalis</i> isolate FF986 cytochrome oxidase subunit 1 (COI	752	752	100%	0.0	98%	
DQ116269.1	<i>Bactrocera dorsalis</i> isolate FF901 cytochrome oxidase subunit 1 (COI	752	752	100%	0.0	98%	
HQ260727.1	<i>Bactrocera dorsalis</i> isolate E2010-5235-1 clone 2 tRNA-Tyr gene, ps	747	747	100%	0.0	98%	
HQ260726.1	<i>Bactrocera dorsalis</i> isolate E2010-5235-1 clone 1 tRNA-Tyr gene, ps	747	747	100%	0.0	98%	
DQ084379.1	<i>Bactrocera dorsalis</i> mitochondrion, complete genome	747	747	100%	0.0	98%	
DQ116217.1	<i>Bactrocera philippinensis</i> isolate FF1028 cytochrome oxidase subunit	747	747	100%	0.0	98%	
DQ116216.1	<i>Bactrocera philippinensis</i> isolate FF1020 cytochrome oxidase subunit	747	747	100%	0.0	98%	

Internet | Protected Mode On | 100%

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Absent: intercepted only

The pest has only been reported on consignments at a point of entry or initial destination or while under detention before release, treatment or destruction.

Surveillance confirms that the pest has not established.

Transience

Pest status is considered transient when a pest is present but establishment is not expected to occur based on technical evaluation.

Transient: non-actionable

The pest has only been detected as an individual occurrence or isolated population not expected to survive and no phytosanitary measures have been applied.

Transient: actionable, under surveillance

The pest has been detected as an individual occurrence or an isolated population that may survive into the immediate future, but is not expected to establish.

Appropriate phytosanitary measures, including surveillance are being applied.

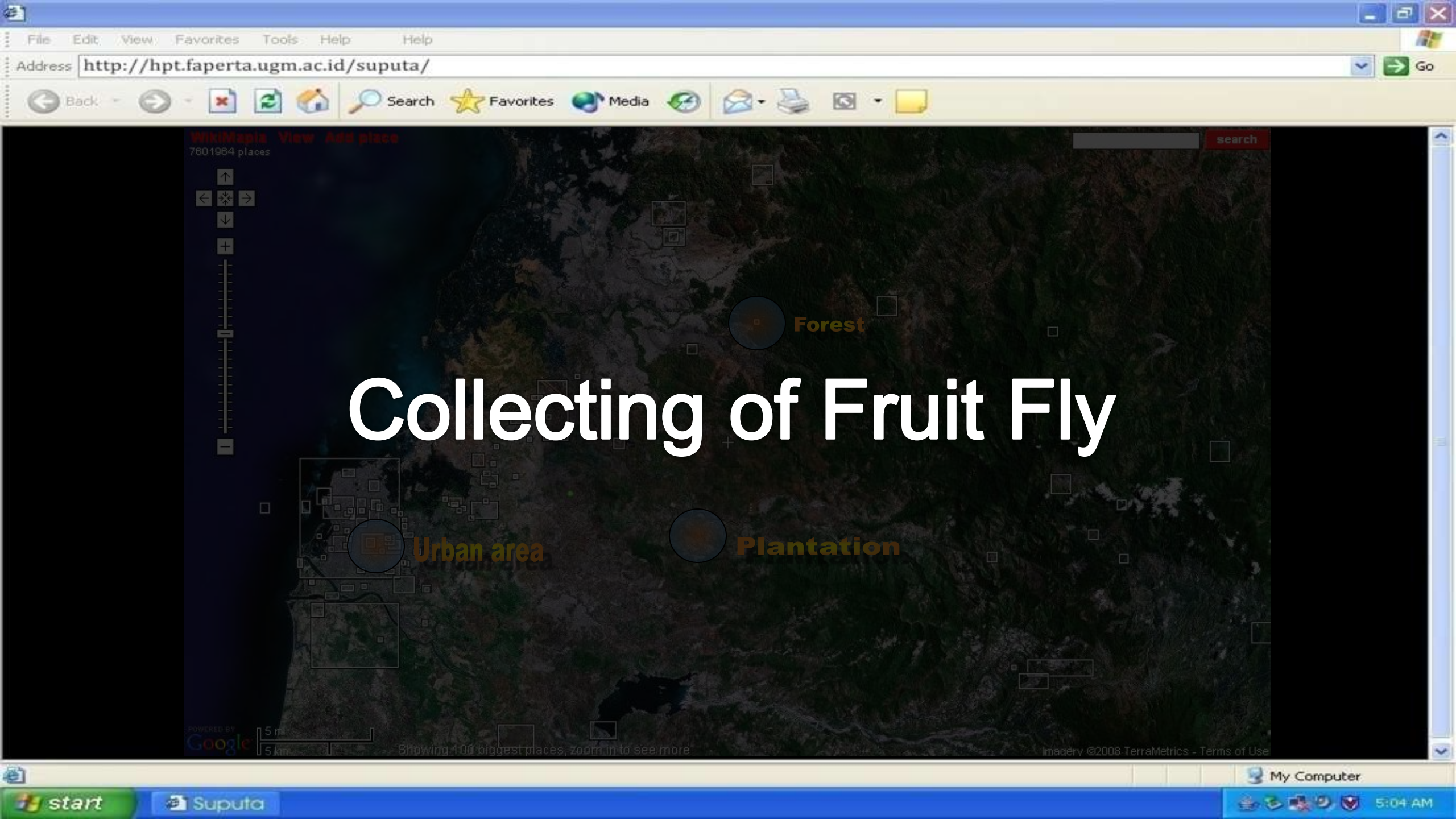
Transient: actionable, under eradication

The pest has been detected as an isolated population which may survive into the immediate future and, without phytosanitary measures for eradication, may establish.

Appropriate phytosanitary measures have been applied for its eradication.

Determination of pest status in an area

- individual pest records
- pest records from surveys
- records or other indication of pest absence
- results of general surveillance
- information from scientific publications and databases
- phytosanitary measures used to prevent introduction or spread
- other information relevant to assessing pest absence or presence



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Collecting of Fruit Fly

Forest

Urban area

Plantation

Subgenus Zeugodacus

- 36. *B. calumniata* (Hardy) CUE
- 37. *B. caudata* (Fabricius) CUE
- 38. *B. cucurbitae* (Coquillett) CUE
- 39. *B. emittens* (Walker) CUE
- 40. *B. exornata* (Hering) CUE
- 41. *B. heinrichi* (Hering) CUE
- 42. *B. persignata* (Hering) CUE
- 43. *B. pseudocucurbitae* White ψ CUE
- 44. *B. synnephes* (Hendel) CUE
- 45. *B. tau* (Walker) ψ CUE awit
- 46. *B. gamais* n.sp. ME

Trapping

Subgenus Callanassa

- 47. *Dacus leongi* Drew & Hancock ψ CUE
- 48. *D. longicornis* Wiedermann CUE
- 49. *D. nanggalae* Drew & Hancock ψ CUE

DIPTERA: TEPHRITIDAE: TRYPETINAE

- 50. *Adrama determinata* (Walker) Biji Teh

DIPTERA: MUSCIDAE: PHAONIINAE

Subgenus Acritochaeta

- 51. *Atherigona orientalis* (Schin.) Buah Cabai Merah

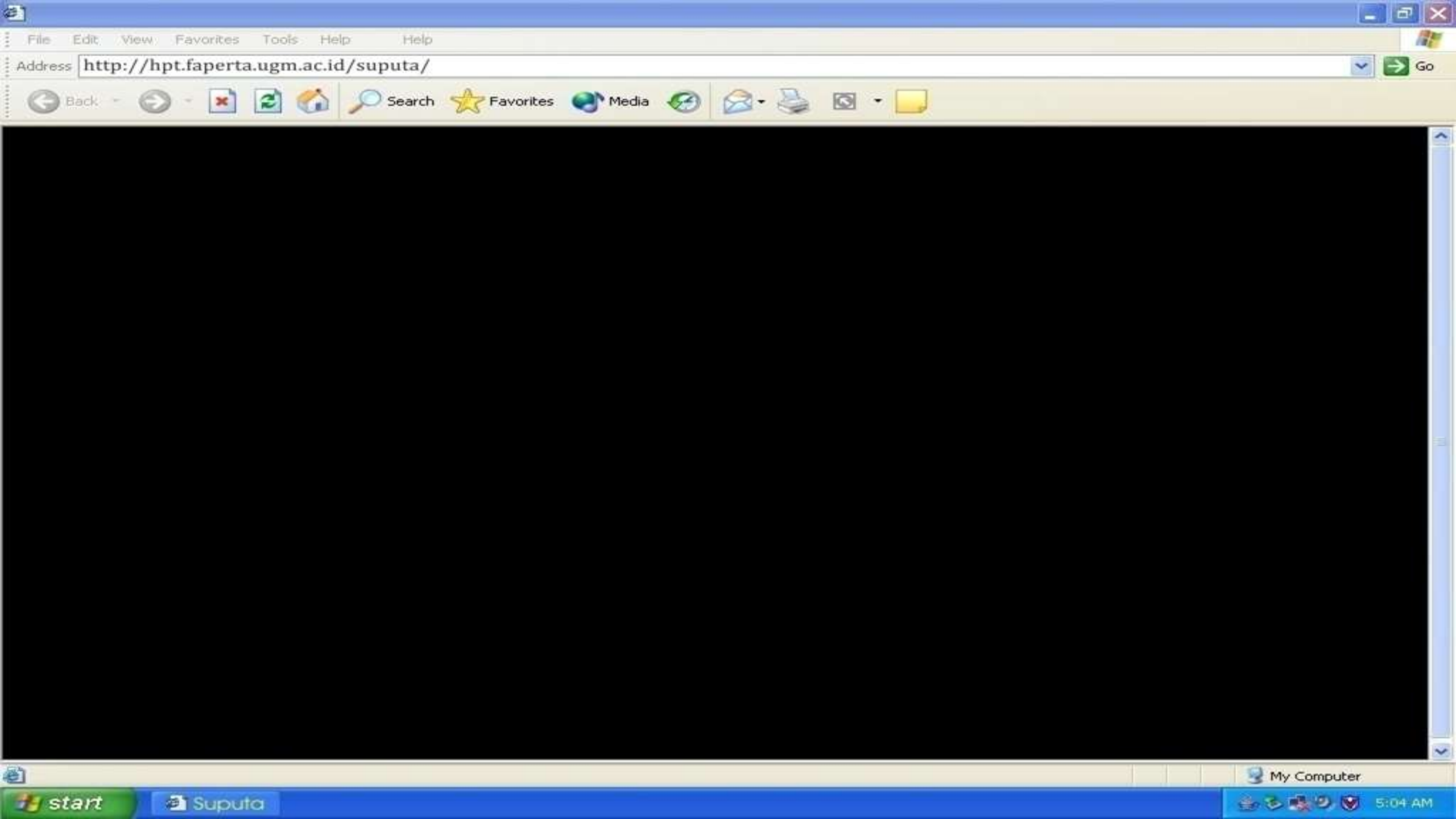
ψ : Lalat buah yang dikirim oleh staf BTPH, Karantina, dan Universitas.







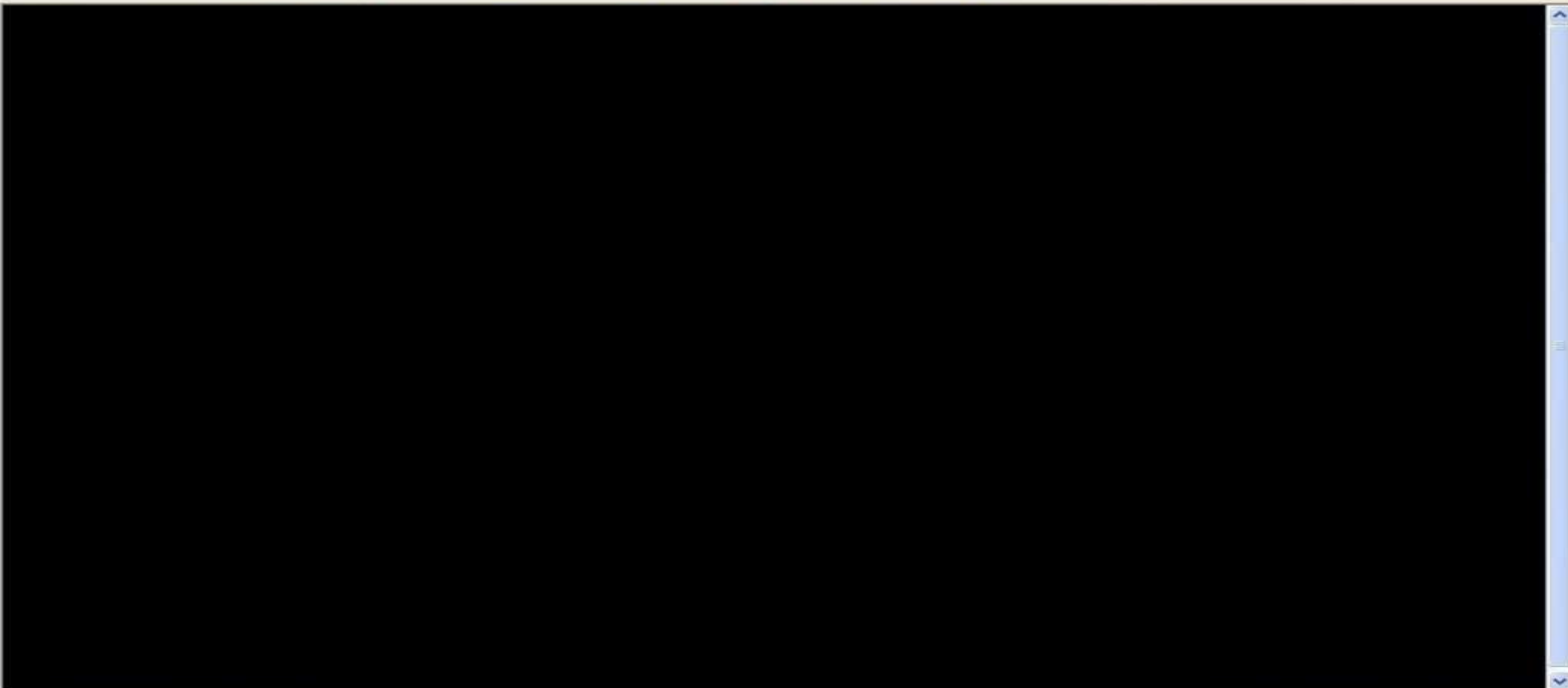




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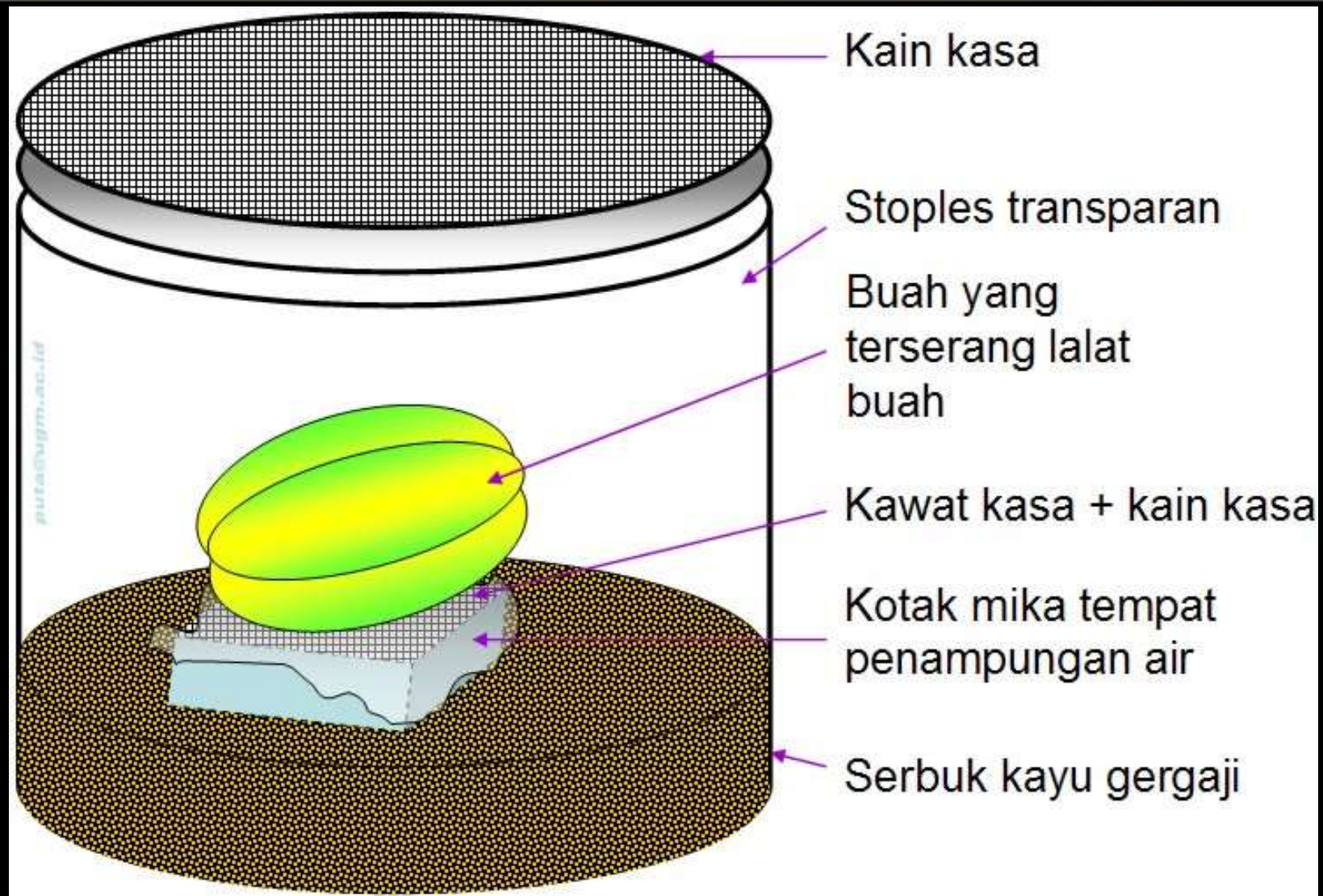
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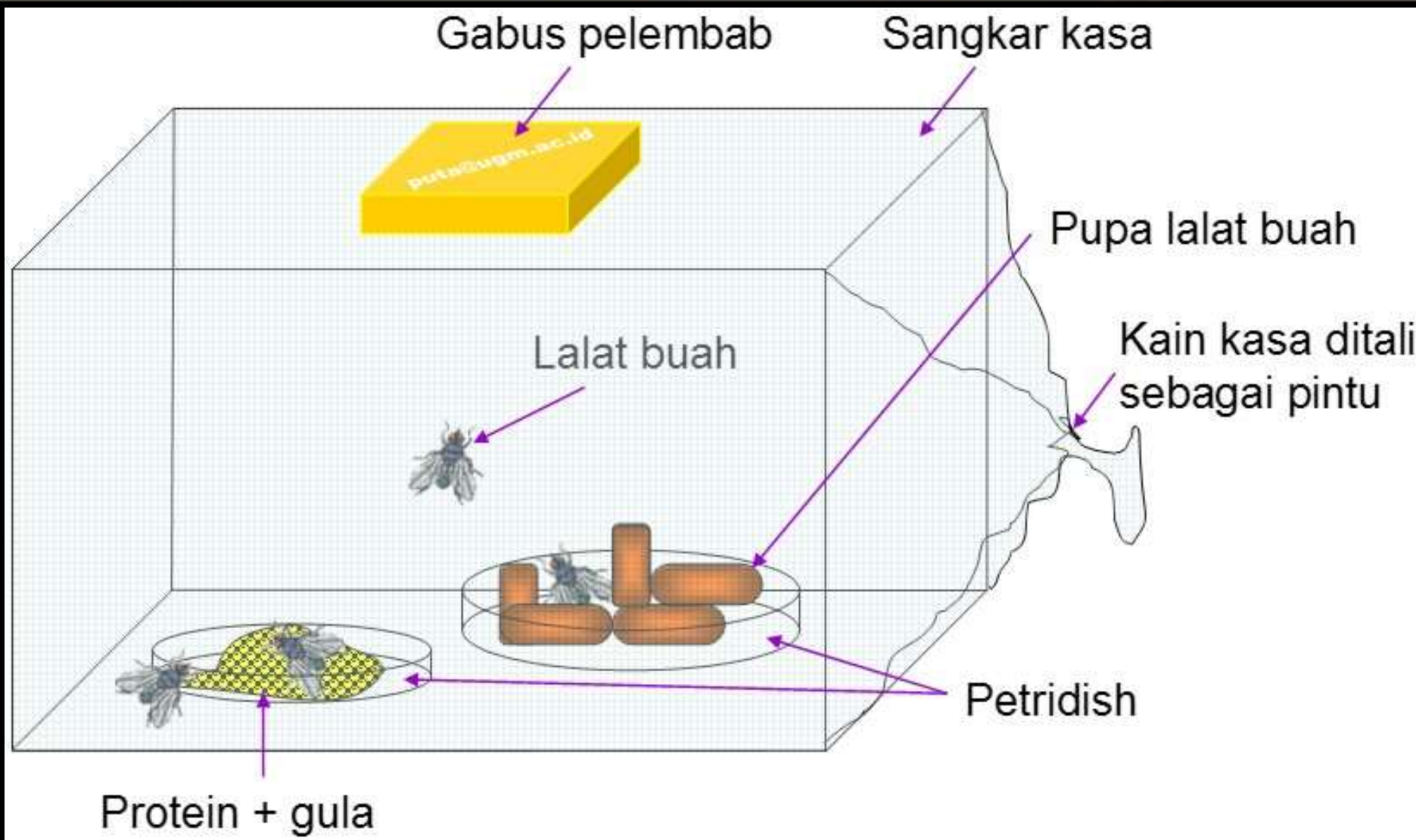


Photo: SUPUTA
Gadjah Mada University

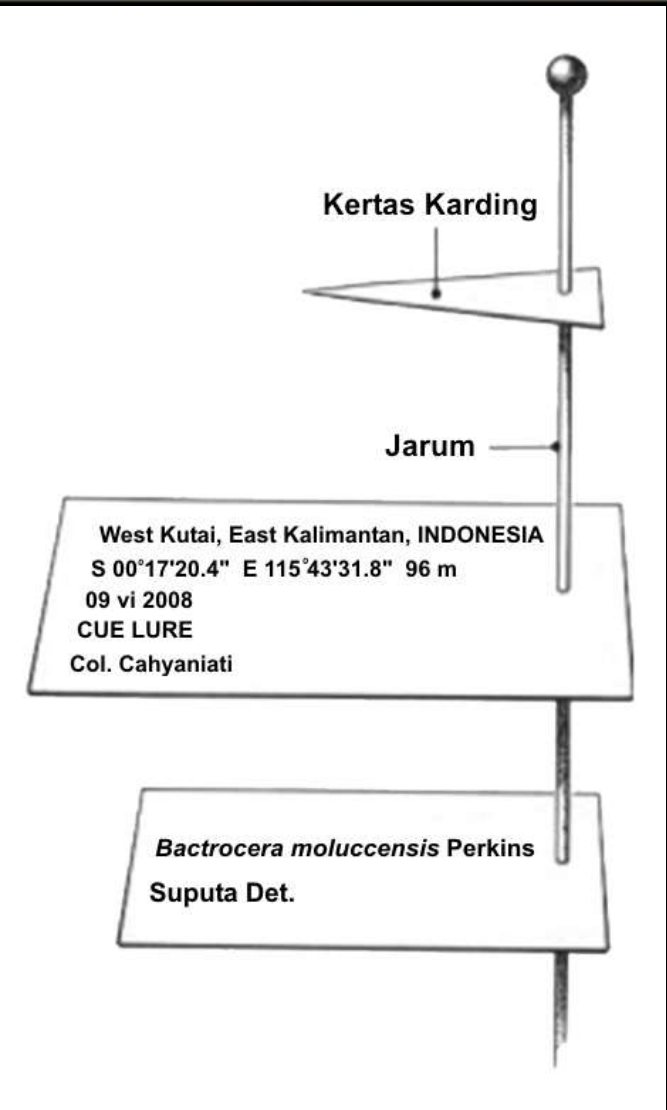


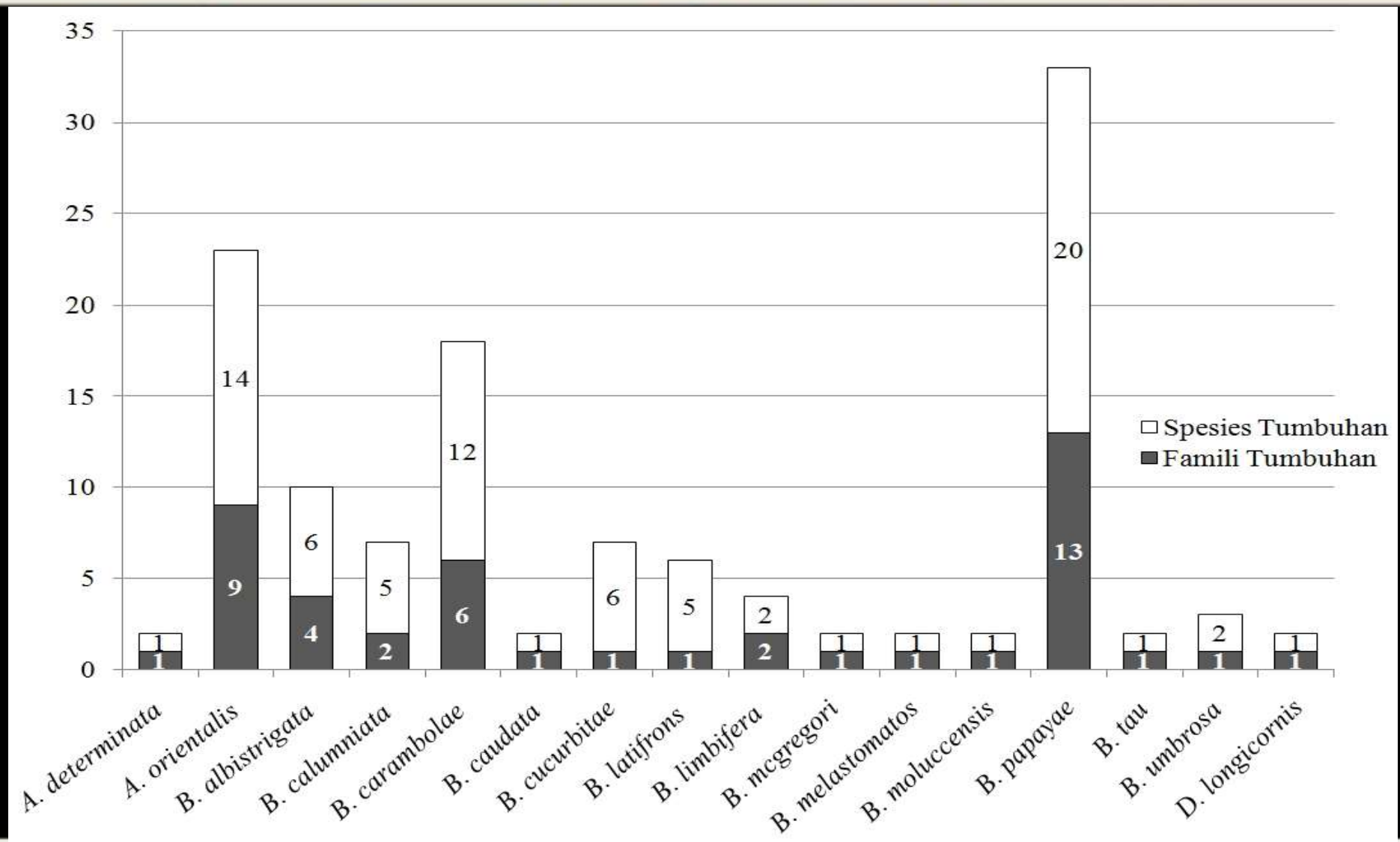












MONOFAGA

- A. determinata* (-) → *Camellia sinensis*
- B. caudata* (CUE lure) → *Cucurbita moschata*
- B. mcgregori* (-) → *Gnatum gnemon*
- B. melastomatos* (CUE lure) → *Melastoma malabathricum*
- B. moluccensis* (CUE lure) → *Inocarpus fagifer*
- B. tau* (CUE lure) → *Passiflora edulis*
- D. longicornis* (CUE lure) → *Luffa acutangula*

STENOFAGA

- B. umbrosa* (ME) → *Artocarpus* spp.

OLIGOFAGA

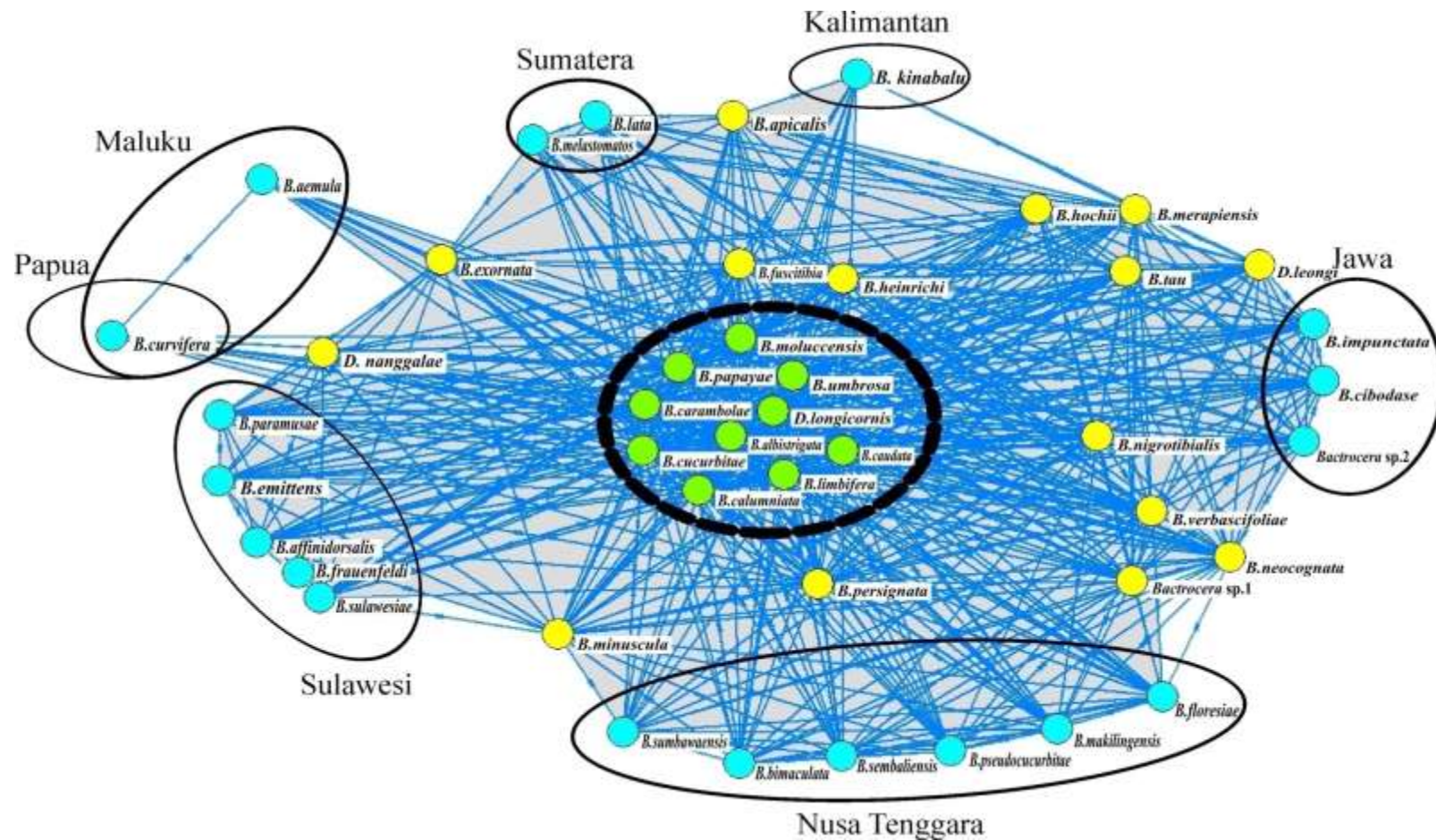
- B. cucurbitae* (CUE lure) → Cucurbitaceae
- B. latifrons* (-) → Solanaceae

POLIFAGA

- B. papaya* (ME) → Anacardiaceae, Annonaceae, Caricaceae, Combretaceae, Fabaceae, Meliaceae, Myrtaceae, Oxalidaceae, Sapindaceae, Thymelaeaceae
- B. carambolae* (ME) → Anacardiaceae, Annonaceae, Caricaceae, Combretaceae, Meliaceae, Myrtaceae, Oxalidaceae, Sapindaceae
- A. orientalis* (-) → Anacardiaceae, Annonaceae, Caricaceae, Combretaceae, Fabaceae, Meliaceae, Myrtaceae, Sapindaceae,

0°45'04.65" S 120°06'23.47" E

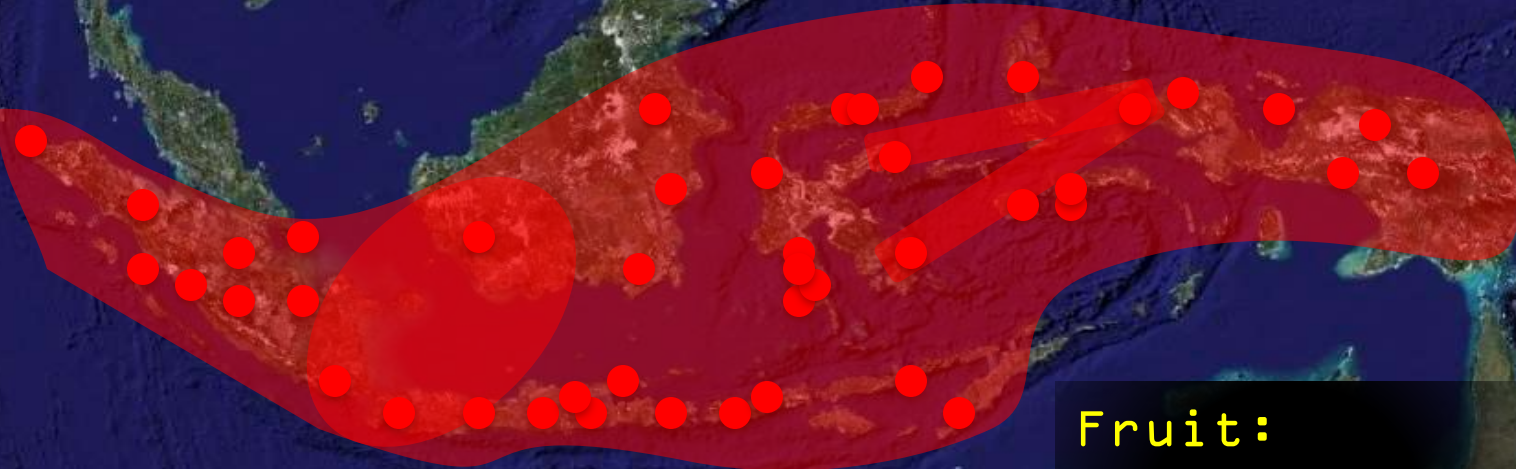
Eye alt. 5355.78 km



Gambar 8. Pengelompokan sebaran lalat buah menggunakan *Pajek software package*;
 ● endemik, ● kosmopolit, dan ● semi-kosmopolit.

Distribution of Fruit Flies

sampling sites



- Fruit:
- souvenir
 - agriculture
 - hobby

61 districts = 26 provinces in Indonesia

Image NASA
© 2009 Cnes/Spot Image
Image © 2009 TerraMetrics

Google

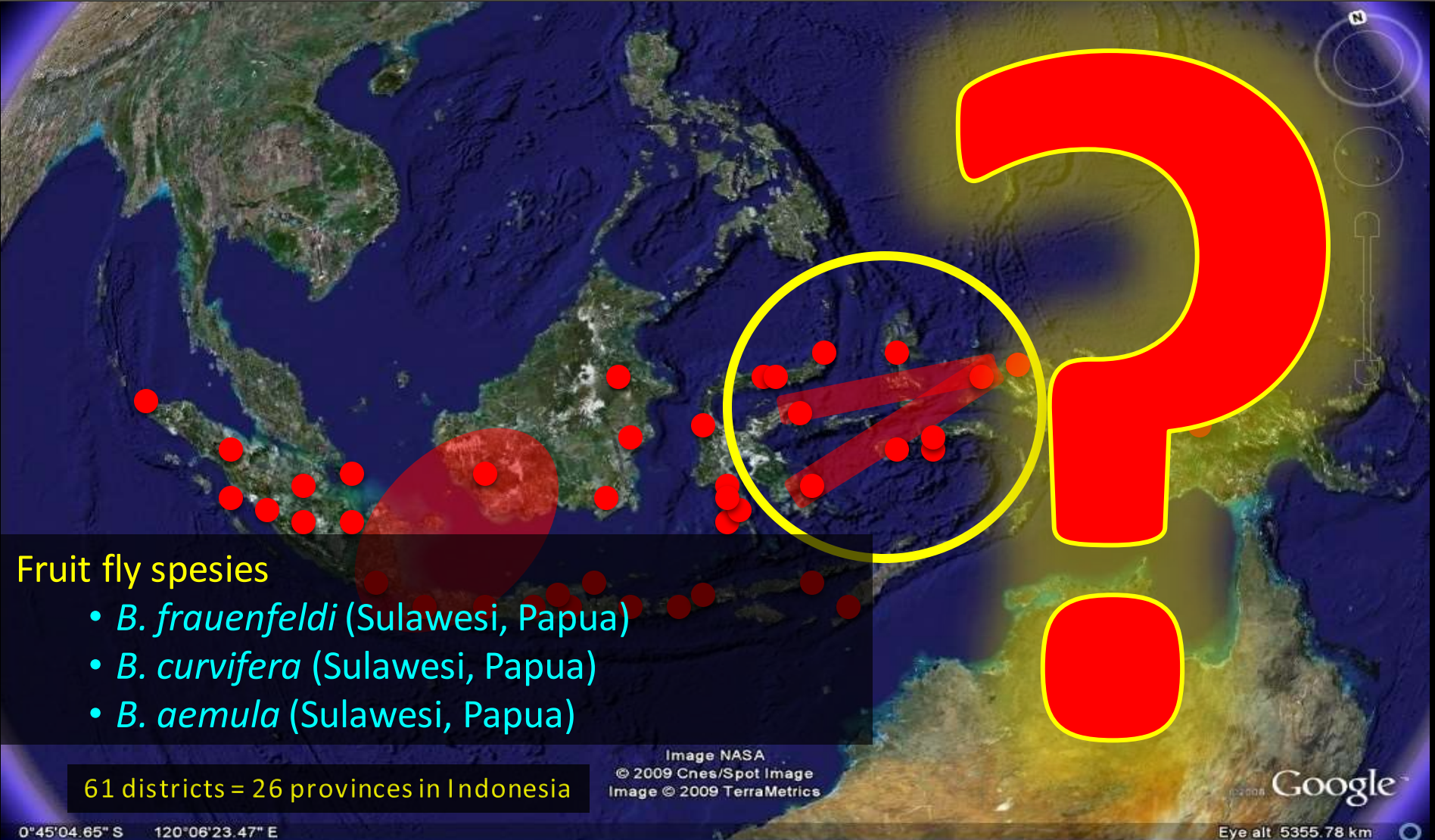
0°45'04.65" S 120°06'23.47" E

Eye alt 5355.78 km





NatGeo



Fruit fly spesies

- *B. frauenfeldi* (Sulawesi, Papua)
- *B. curvifera* (Sulawesi, Papua)
- *B. aemula* (Sulawesi, Papua)

61 districts = 26 provinces in Indonesia

Image NASA
© 2009 Cnes/Spot Image
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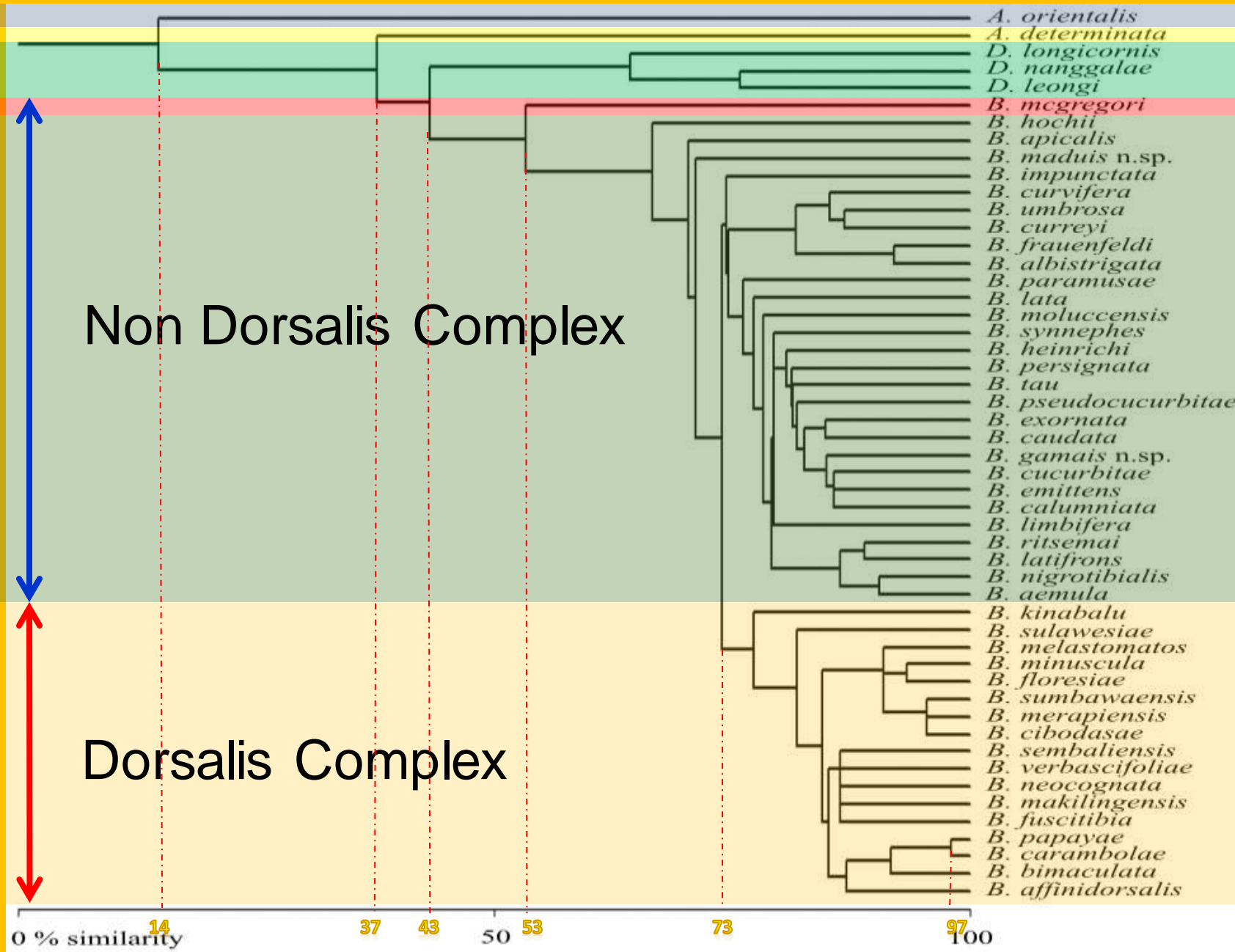
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Eye alt 5355.78 km

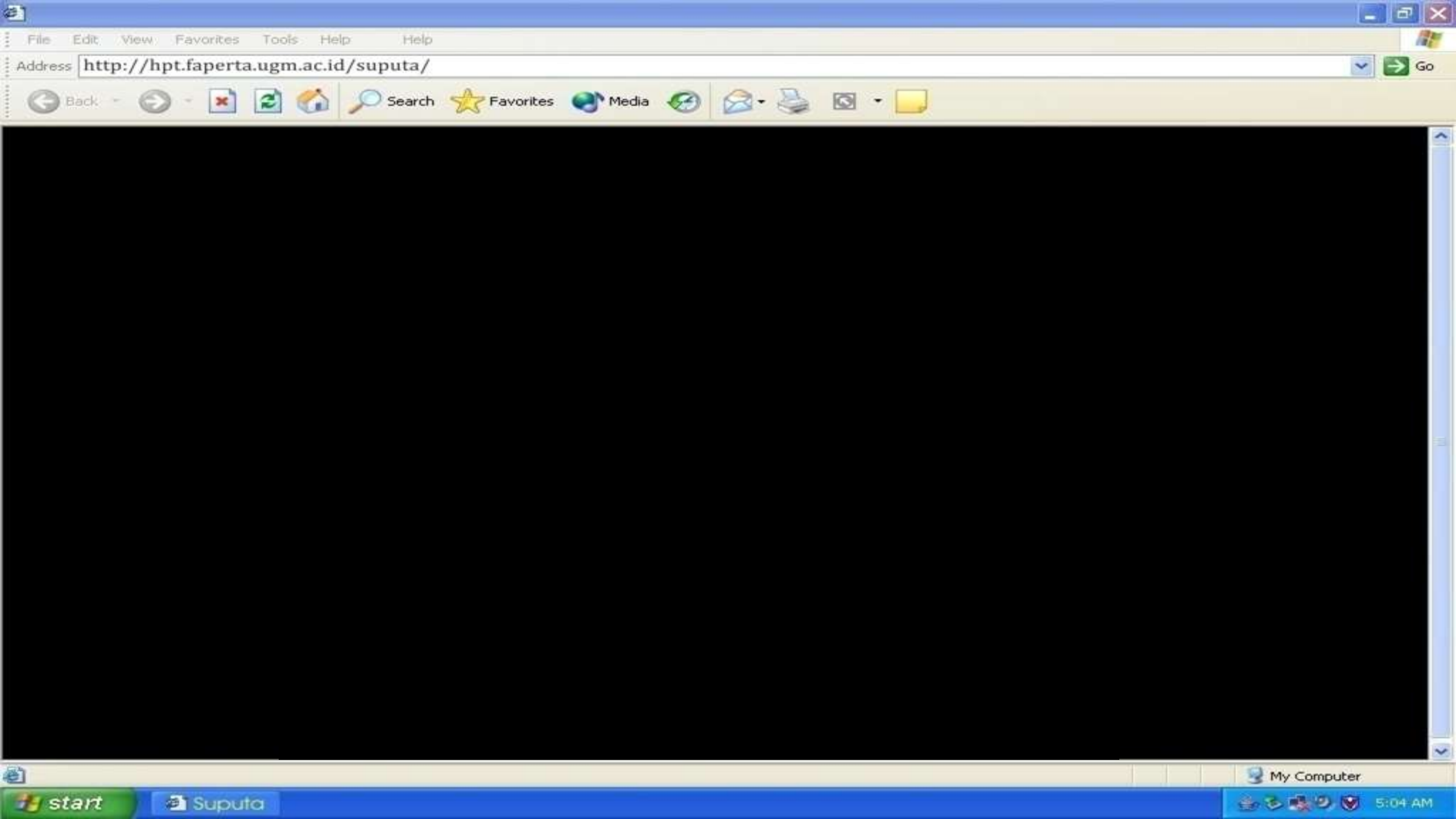


NatGeo



- A. orientalis*
- A. determinata*
- D. longicornis*
- D. nanggalae*
- D. leongi*
- B. mcgregori*
- B. hochii*
- B. apicalis*
- B. maduis n.sp.*
- B. impunctata*
- B. curvifera*
- B. umbrosa*
- B. curreyi*
- B. frauenfeldi*
- B. albistrigata*
- B. paramusae*
- B. lata*
- B. moluccensis*
- B. synnephes*
- B. heinrichi*
- B. persignata*
- B. tau*
- B. pseudocucurbitae*
- B. exornata*
- B. caudata*
- B. gamais n.sp.*
- B. cucurbitae*
- B. emittens*
- B. calumniata*
- B. limbifera*
- B. ritsemai*
- B. latifrons*
- B. nigrotibialis*
- B. aemula*
- B. kinabalu*
- B. sulawesiae*
- B. melastomatos*
- B. minuscula*
- B. floresiae*
- B. sumbawaensis*
- B. merapiensis*
- B. cibodasae*
- B. sembaliensis*
- B. verbascifoliae*
- B. neocognata*
- B. makilingensis*
- B. fuscitibia*
- B. papayae*
- B. carambolae*
- B. bimaculata*
- B. affinidorsalis*

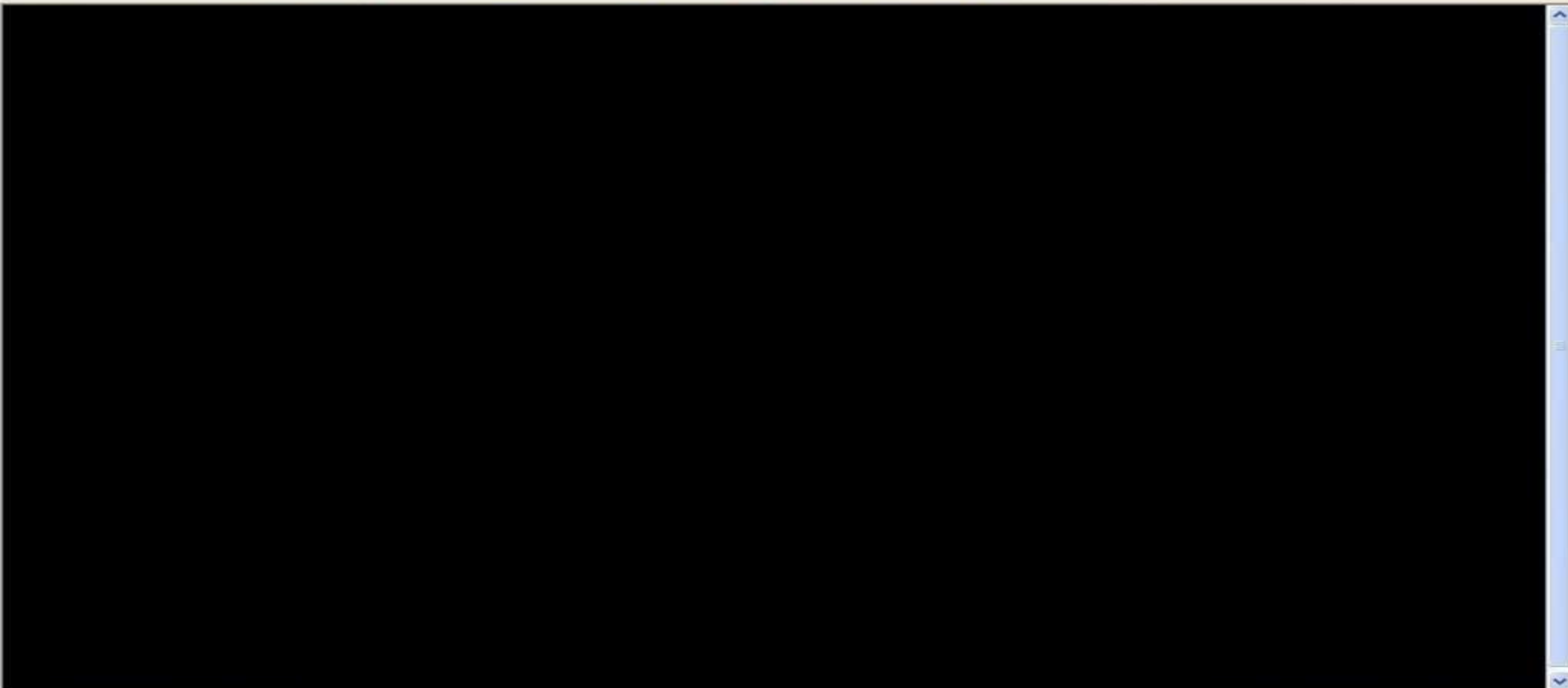
Bray-Curtis Cluster Analysis.



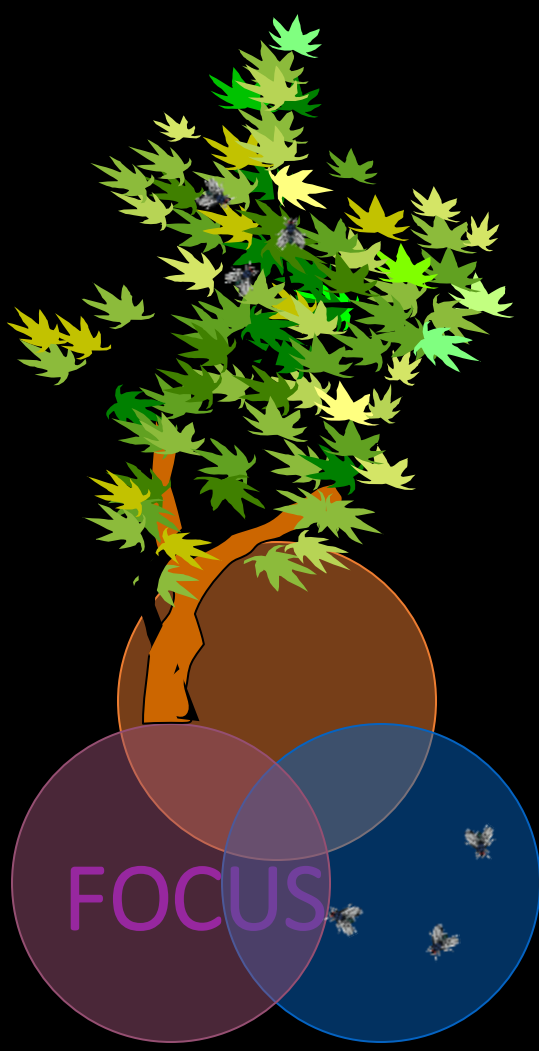
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THANK YOU
VERY MUCH