

Mardi Santoso

1988

Undergraduate, Chemistry
Department, ITS

1998

MSc leading to PhD, School
of Chemistry, The University
of New South Wales

2003

Postdoctoral, School of
Biosciences at Novum,
Karolinska Institutet

Research Group on Natural Products and Chemical Synthesis (NPCS)

CHEMISTRY DEPARTMENT

14 November, 2013



Research Group Members:

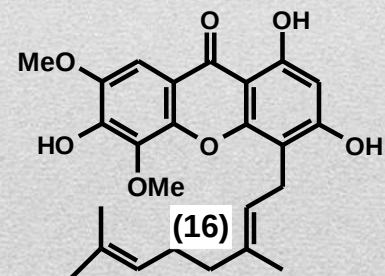
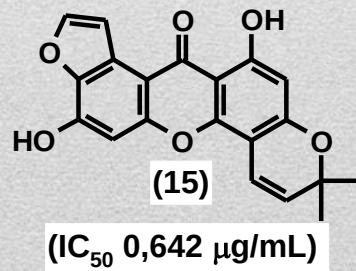
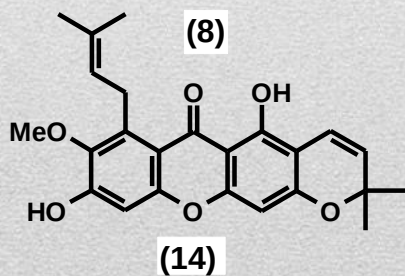
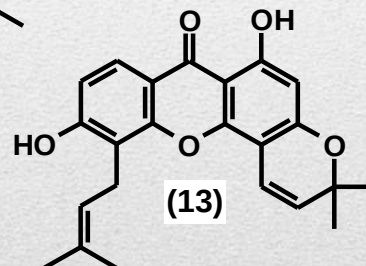
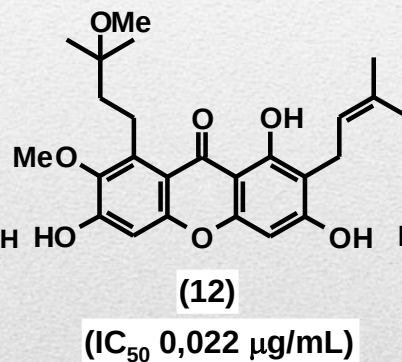
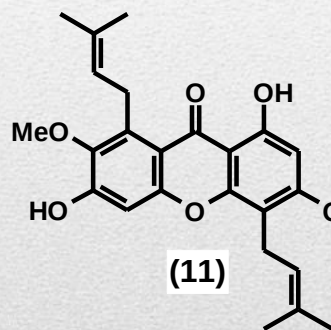
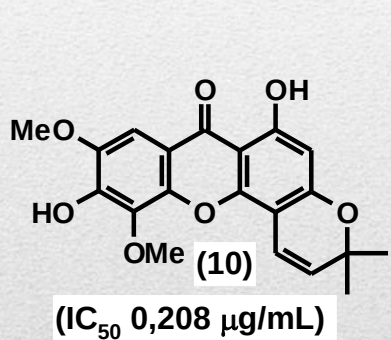
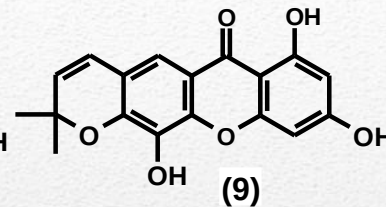
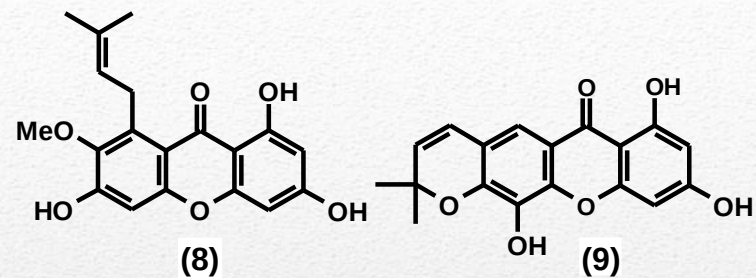
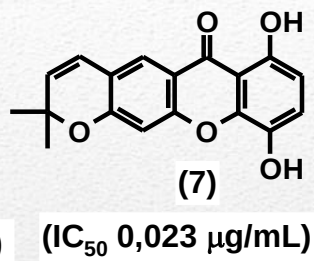
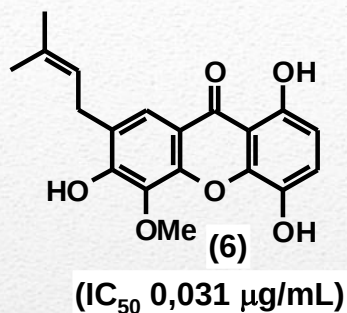
1. Prof. Dr. Taslim Ersam (head)
 2. Prof. Dr. Mardi Santoso
 3. Dr. Fahimah Martak, MSc
 4. Sri Fatmawati PhD
 5. Arif Fadlan MSc
 6. Undergraduate students (15)
 7. Master students (13)
 8. Doctorate students (4)
-



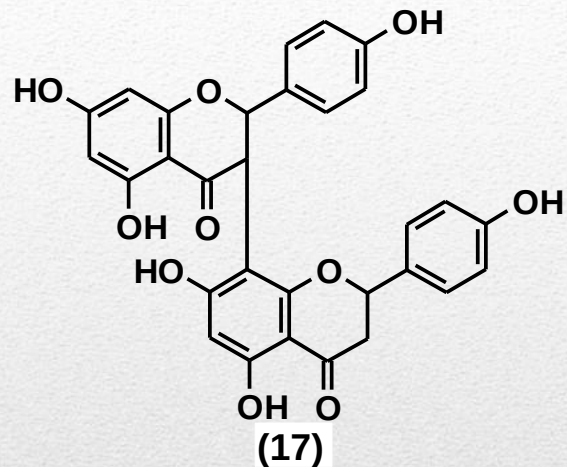
Our Research Focus

1. Natural and unnatural bioactive chemicals
 2. Natural and unnatural fragrances and flavours
-

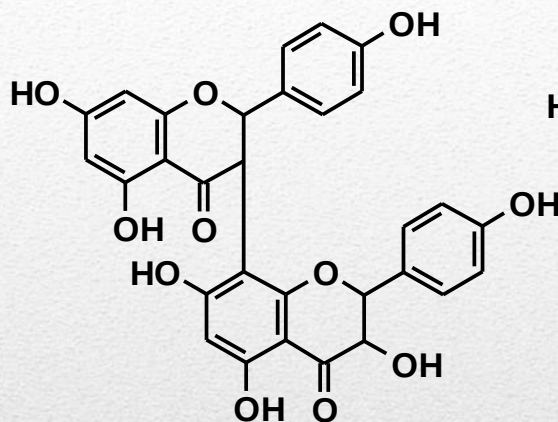
XANTHONE DERIVATES (Antimalaria)



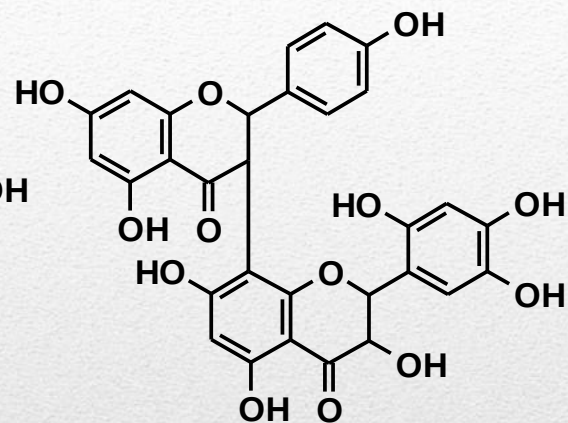
BIFLAVONOIDS (Antimalaria)



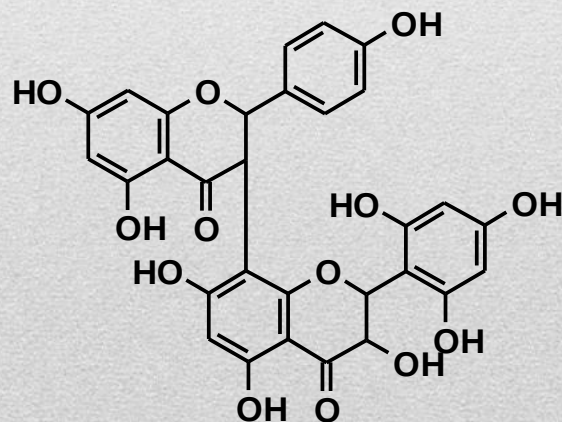
(17)
(IC₅₀ 0,340 µg/mL)



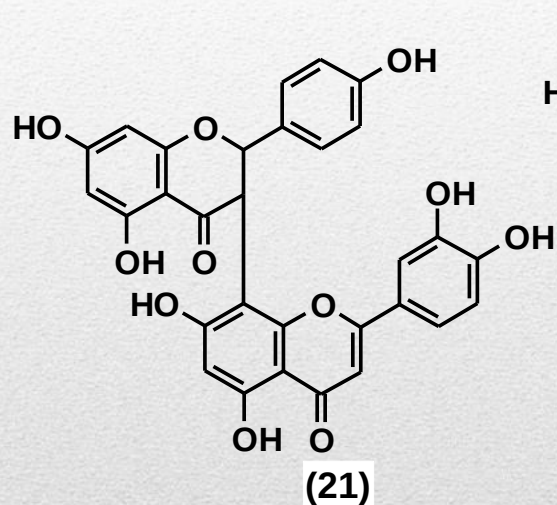
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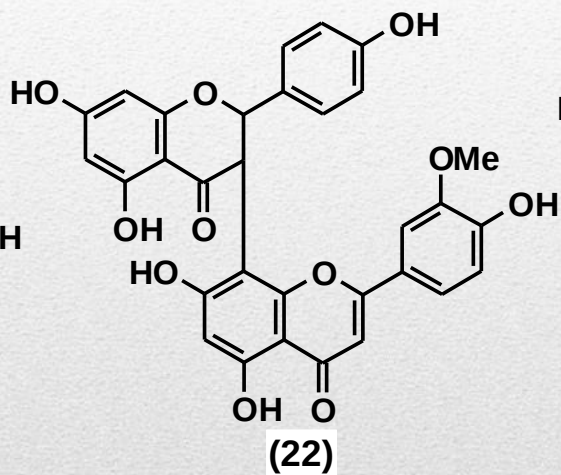
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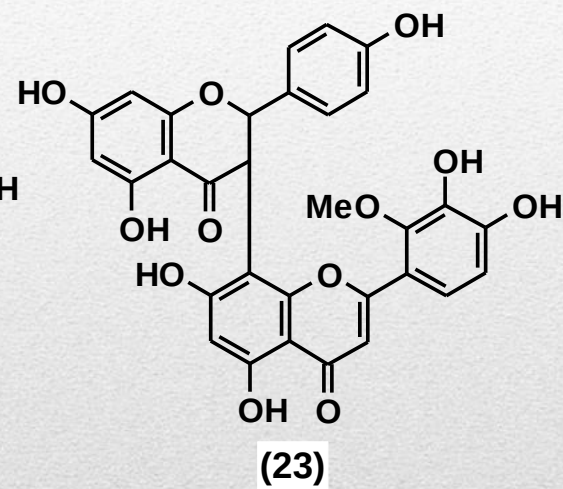
BIFLAVONOIDS (Antimalaria)



(IC₅₀ 0,011 µg/mL)

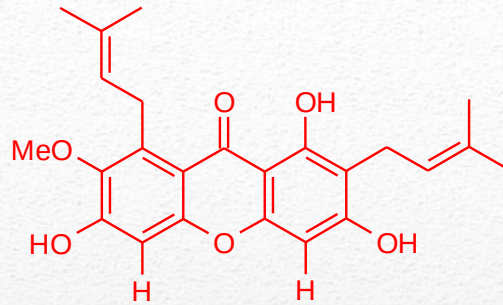


(IC₅₀ 0,016 µg/mL)

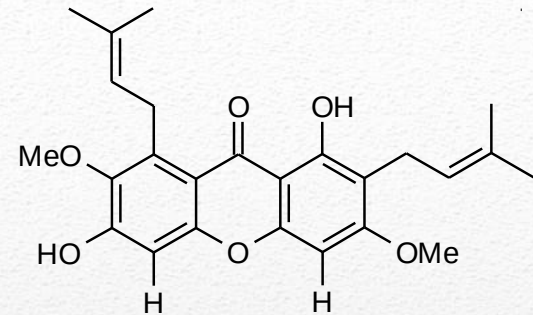


(IC₅₀ 0,004 µg/mL)

Antioxidant

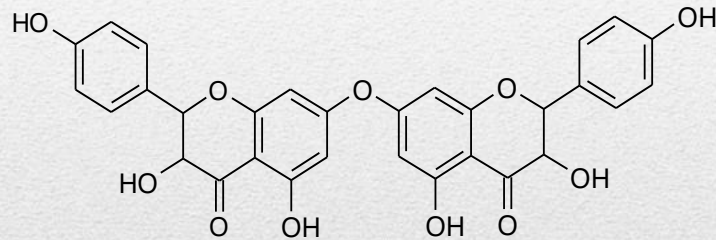


α -mangosten



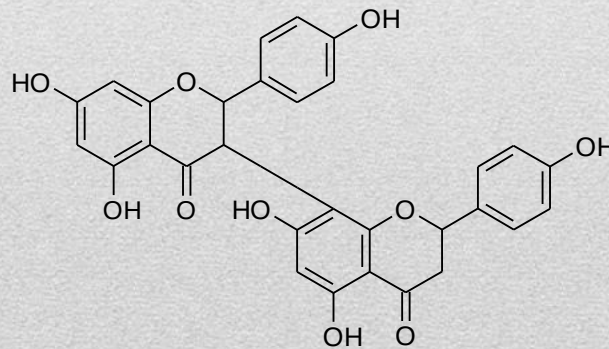
β -mangosten

Antikanker

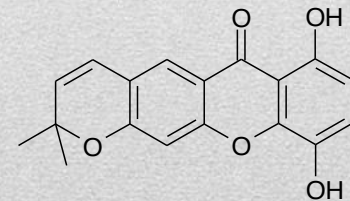


7-O-7''-biaromadendrin 5,7-dihidroksi-4',5'-furano-flavanon

Antimalaria

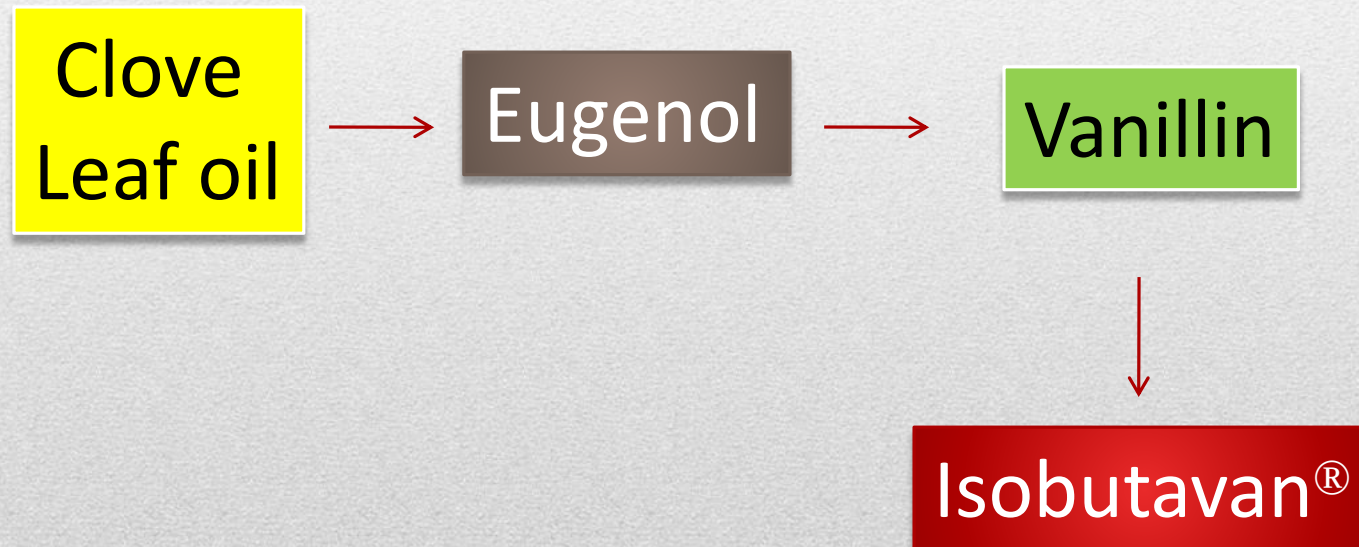


Morelloflavone

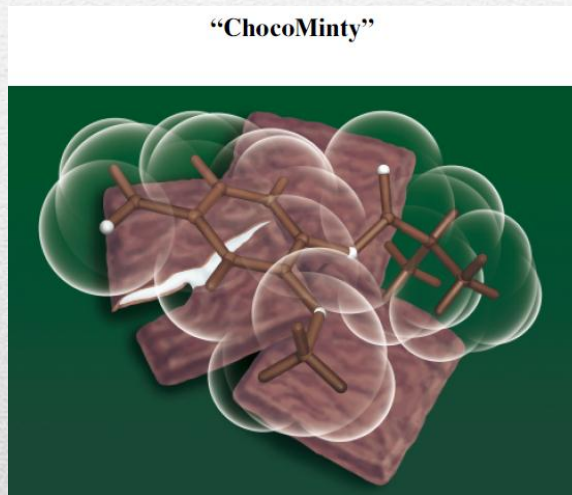


1,4-dihidroksi-3',3'-dimetil-2H-piran[6,7]-santon

- ❖ Studies of more than 20 essential oils in Rutaceae and Annonaceae Families.
- ❖ Research on Clove Leaf Oil:



Commercial flavour/fragrance Isobutavan[®]



sweet & creamy vanilla aroma
reminiscent of white chocolate

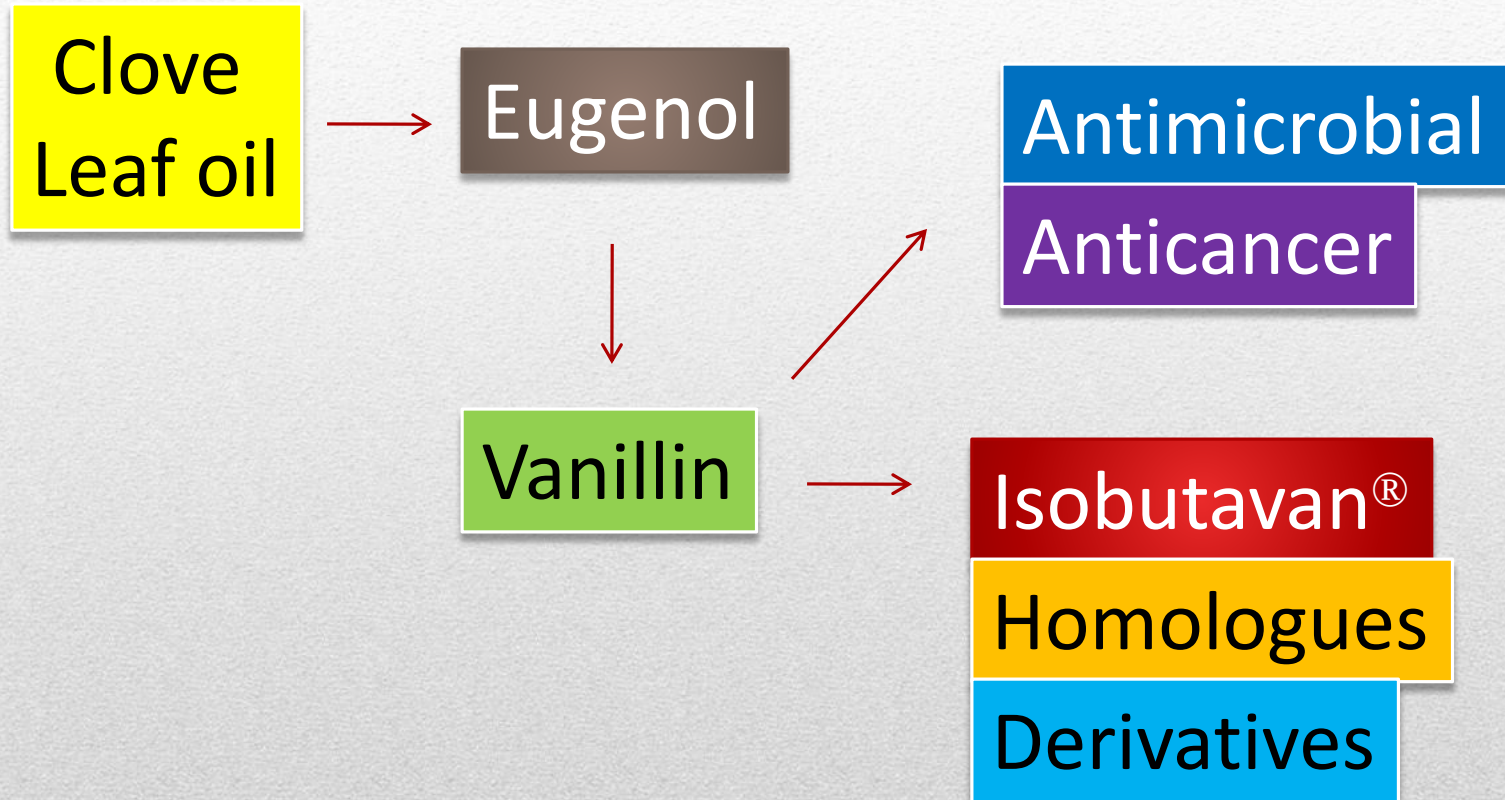


4%

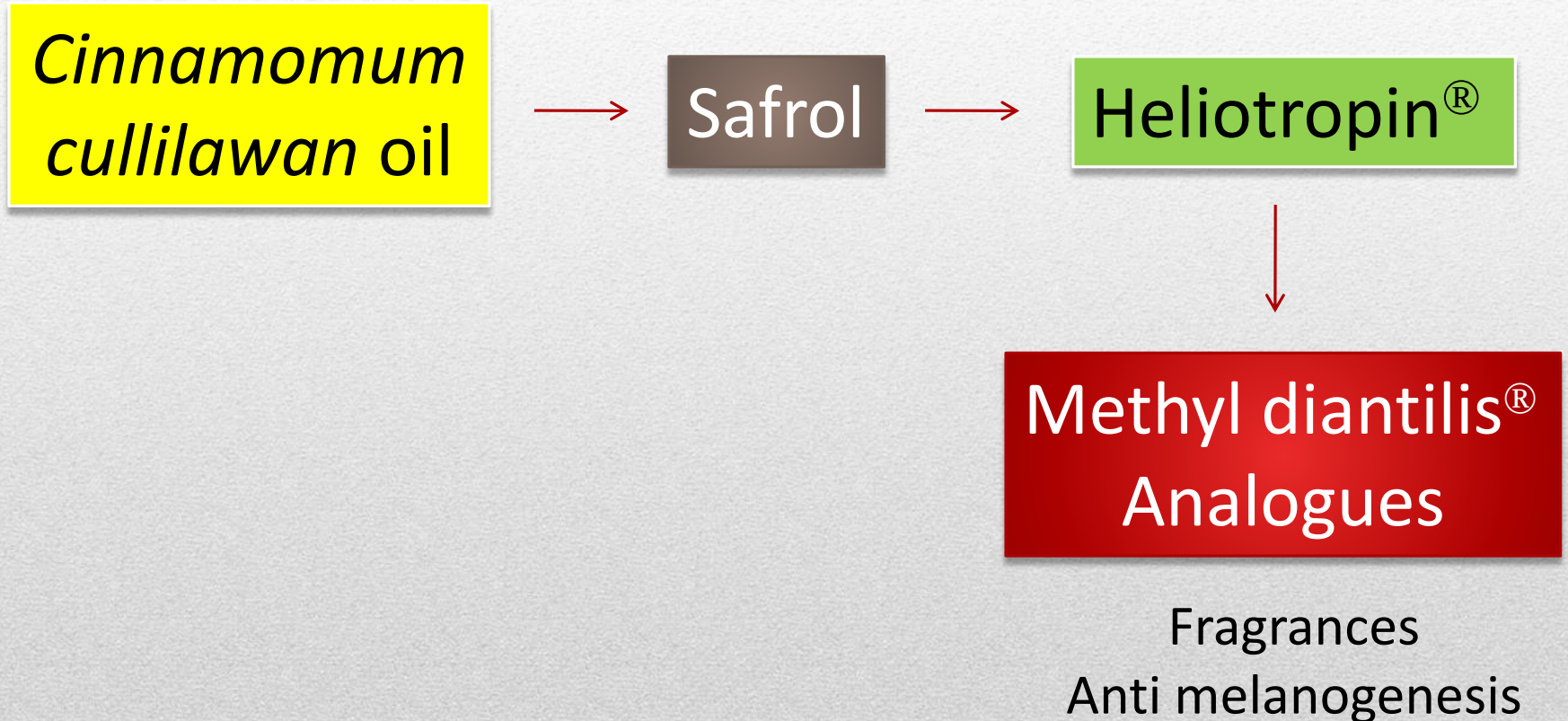
Commercial flavour/fragrance Isobutavan®



Research on Clove Leaf Oil:



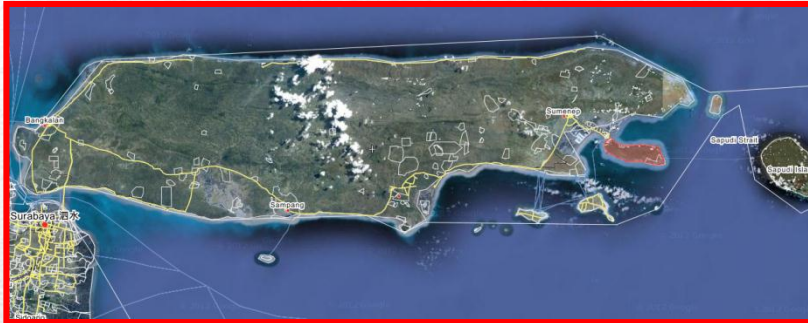
Research on *Cinnamomum cullilawan* Oil:



Current Research Projects (4):

1. Development of The Yamaguchi Method for Synthesis of New Fragrances from Natural Eugenol
 2. Development of New Anticancer Agents from Sponge
 3. Antioxidant Xanthones of *Garcinia cylindrocarpa* from Maluku Islands
 4. Synthesis of metalothiocyanates polymer complex as hydrogen storage material
-

PHENOLIC TEST ON SOME POTERAN PLANTS



SAMPLING SPOT



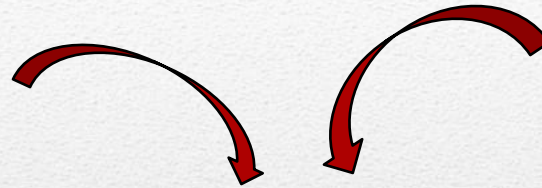
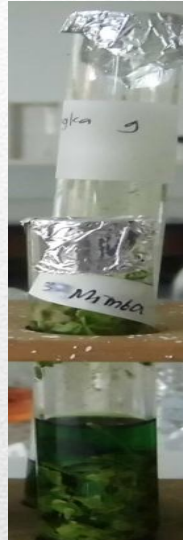
Collected Plants

No	Local Name	Scientific Name
1	Cabe Jamu	<i>Piper retrofactum, Vahl</i>
2	Kesambi	<i>Schleichera aleosa</i>
3	Mimba	<i>Azadirachta indica</i>
4	Saga	<i>Adenanthera pavonima</i>
5	Waru	<i>Hibiscus tiliaceus</i>
6	Kacang Kayu	<i>Cajanus cajan, Linn</i>
7	Pulai	<i>Alstonia scholaris</i>
8	Kelor	<i>Moringa oleifera</i>
9	Nangka	<i>Artocarpus heterophyllus</i>
10	Tarkaji	
11	Penisilin	<i>Penicillium chrysogenum</i>
12	Sereh	<i>Cymbopogon citratus</i>
13	Sirih	<i>Piper betle</i>
14	Pace	<i>Morinda citrifolia</i>
15	Sukun	<i>Artocarpus altius</i>
16	Juwet	<i>Syzygium cumini</i>
17	Sirsak	<i>Annona muricata, L</i>
18	Kalak	
20	Unknown	

Phenolic Screening Test Method (Harborne, 1987)



extraction



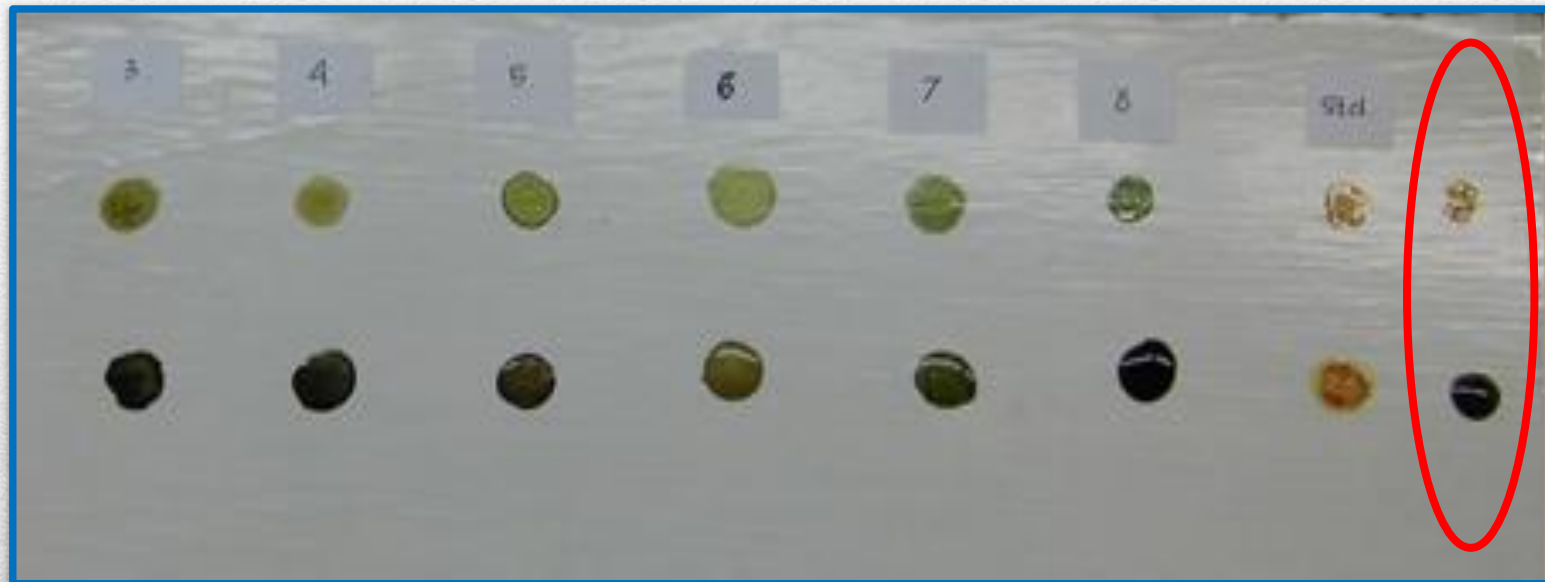
FeCl_3



Left a few minutes



Phenolic Screening Test Result Profiles

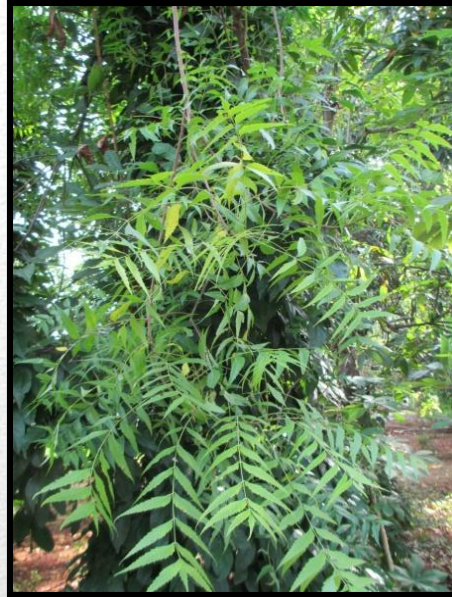


Ten Potential Extracts as Antioxidant Sources

No	Local Name	Scientific Name	Result
1.	Kelor	<i>Moringa oleifera</i>	++++
2.	Mimba	<i>Azadirachta indica</i>	++++
3.	Saga	<i>Adenanthera pavonima</i>	++++
4.	Sukun	<i>Artocarpus altius</i>	++++
5.	Juwet	<i>Syzygium cumini</i>	++++
6.	Sirsak	<i>Annona muricata, L</i>	++++
7.	Kalak		++++
8.	Kesambi	<i>Schleichera aleosa</i>	+++
9.	Pulai	<i>Alstonia scholaris</i>	+++
10.	Kacang kayu	<i>Cajanus cajan</i>	+++



Moringa oleifera



Azadirachta indica



Cajanus cajan

Highlight

- ✓ Kelor is used as source of antioxidant
 - ✓ Mimba is used traditionally to defeat diabetes
 - ✓ Kacang kayu is used as antimalaria
-



Thank you
very much
for your kind
attention
