

INVESTIGATION OF *Kdr* MUTATION IN DENGUE VECTOR *Aedes aegypti* CYPERMETHRIN-RESISTANT FROM DENGUE ENDEMIC AREA IN MEDAN CITY, NORTH SUMATERA PROVINCE, INDONESIA



Background

- ❑ In 2017, dengue affected > 1200 people in Medan City.
- ❑ Cypermethrin insecticide, the most common used in dengue vector control and its resistance status and molecular mechanism has not been reported

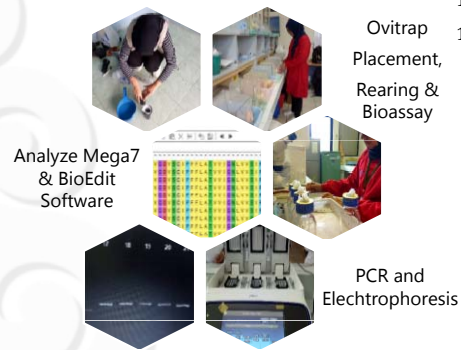
Objective

Investigating resistance status of *Ae. aegypti* against cypermethrin and detection of *kdr* mutation in *Ae. aegypti* VGSC gene

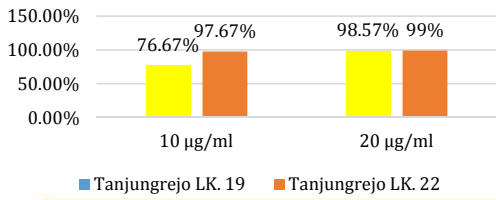
Conclusion

Kdr Mutation were found in population of *Ae. aegypti* resistant and susceptible to cypermethrin from dengue endemic areas in Medan.

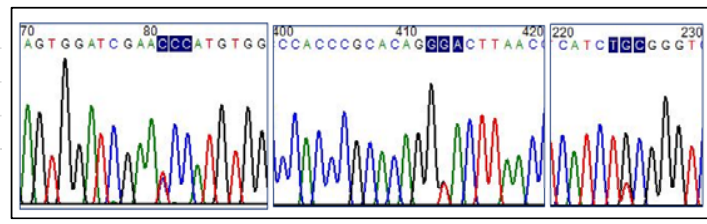
Method



Knockdown Percentage of *Ae. aegypti* against cypermethrin



Result



Accession	Position	Sequence
AB914690.1	987	AATCCATGTGGATTTGTATGCTTGTACAGGTACTTAACTTTTCTTAGCCCTGCTTTTGTC
AB914689.1	987	..C.....G.....
Tanjungrejo Lk. 19 (No.1)	987	..C.....G.....
Tanjungrejo Lk. 19 (No.4)	987	..C.....G.....
Tanjungrejo Lk. 19 (No.5)	987	..C.....G.....
Tanjungrejo Lk. 19 (No.9)	987	..C.....G.....
Tanjungrejo Lk. 22	987	..G.....G.....

Discussion

- ❑ **S989P** : Generally associated with V1016G/I.
- ❑ **V1016G** : Commonly found in Asia and has been reported in Indonesia. Related to resistance pyrethroid type II.
- ❑ **F1534C** : Distributed worldwide. Related to resistance pyrethroid type I.
- ❑ **Combine Kdr Mutation** : S989P+V1016 on DII S6 and F1534C on DIII S6 of VGSC gene are related to pyrethroid type I and II.

Solution

Eradication of mosquito breeding site by '1 house 1 Jumantik' is one of the family members living in one house who is assigned to do monitoring larva periodically.

References

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