Plant & Food RESEARCH
RANGAHAU AHUMĀRA KAI

Monitoring *varroa* infestations: Washes and sticky boards, what do they mean?

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Apiculture New Zealand Conference 2019

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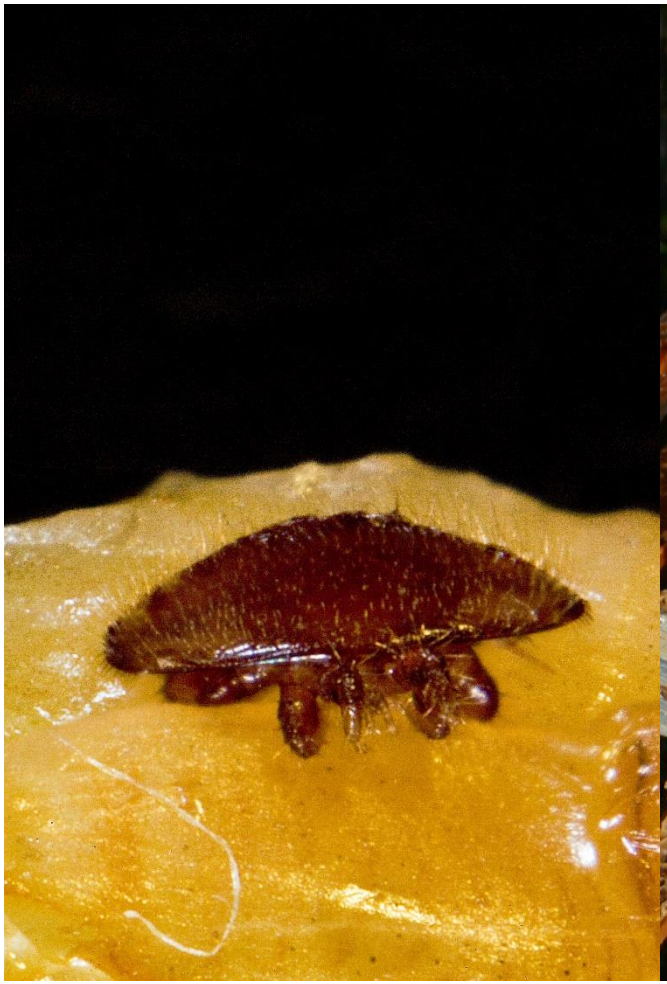
Varroa destructor

- Parasite
- Viruses
- Control
- Monitor



Varroa monitoring

- Threshold
- Integrated pest management
- Unproven methods of control

Alcohol wash = **rate** of varroa per bee

Sticky board = arbitrary number

Why choose sticky boards?

Pros and cons of alcohol wash vs sticky boards in NZ at present

	Alcohol wash	Sticky board
Time collecting sample	High	Low
Time quantifying sample	High	Low
Repeat apiary visits	No	Yes
Destructive	~300 bees	~0 bees
Informative?	Yes	No

Trial

- 60 two-high colonies
- 24 h sticky boards for 3 days
  = 72 h of natural mite fall
- Alcohol wash on day 3

DATA

- rate (varroa/300 bees)
- number on sticky board

Cluster size estimate

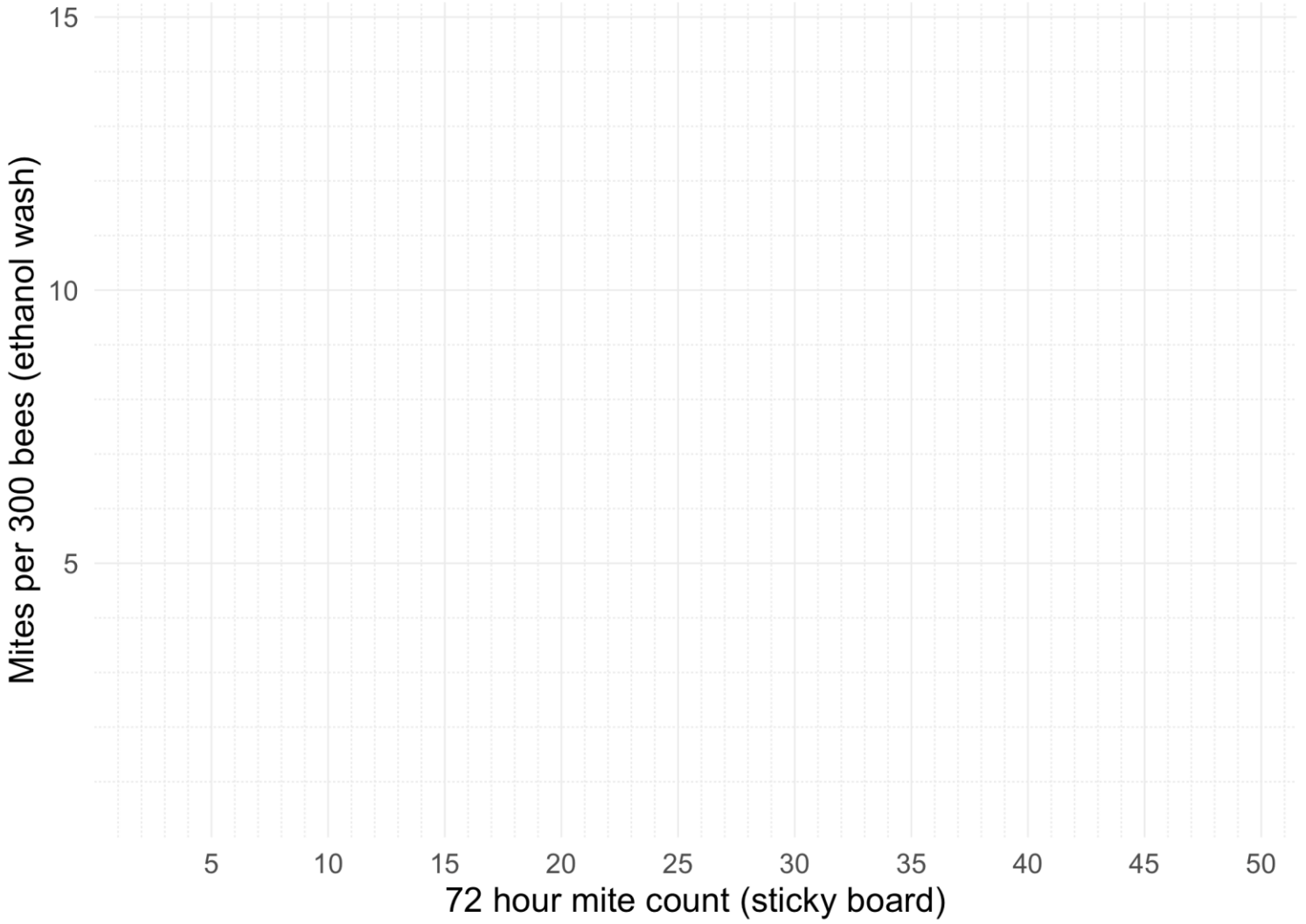
Day 3 quantify colony strength

DATA

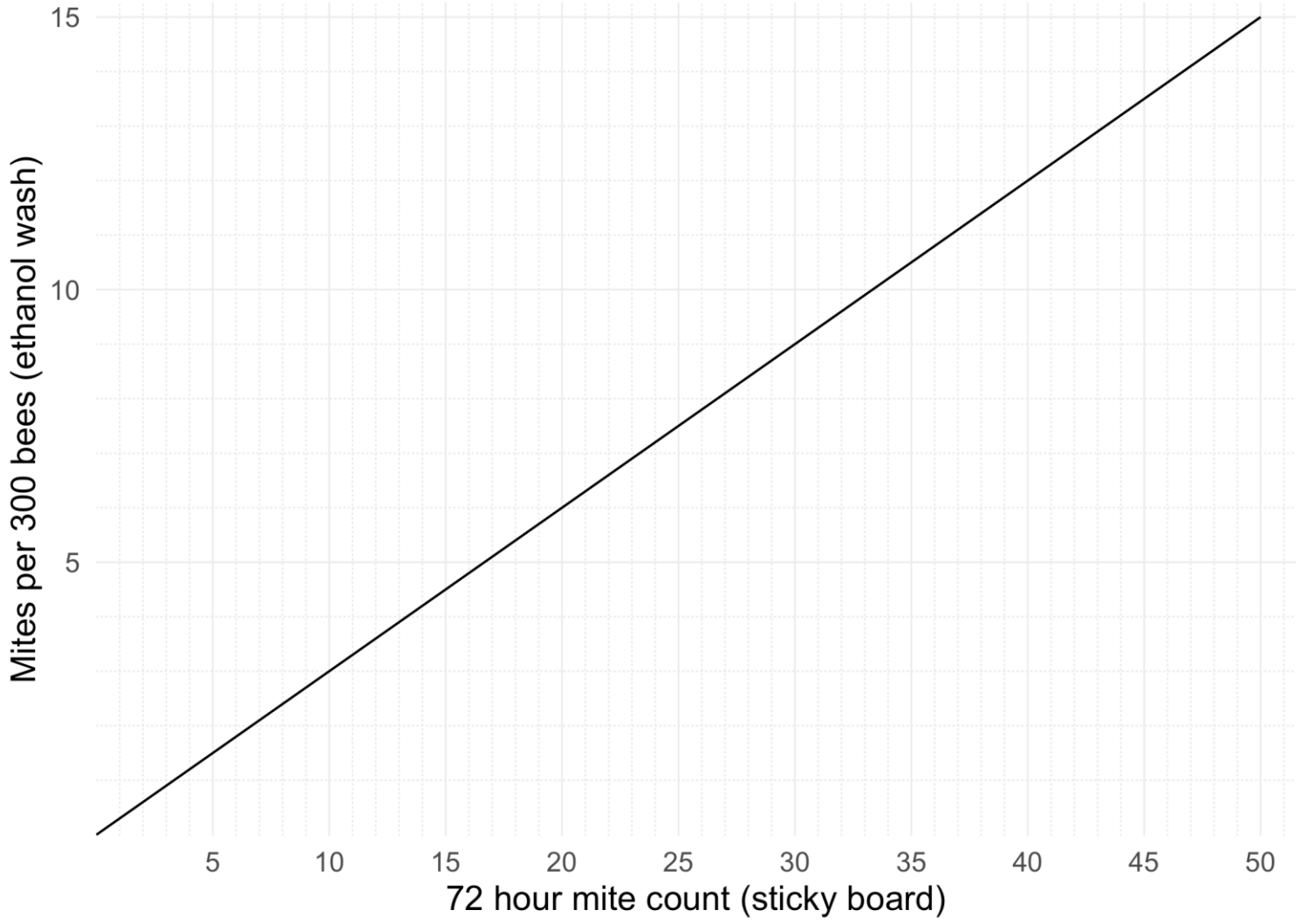
- rate (varroa/300 bees)
- number on sticky board
- estimate of cluster size

Nasr, M. E., Thorp, R. W., Tyler, T. L., & Briggs, D. L. (1990). Estimating honey bee (Hymenoptera: Apidae) colony strength by a simple method: measuring cluster size. *Journal of Economic Entomology*, *83*(3), 748-754

Results


15
10
5
Mites per 300 bees (ethanol wash)
5
10
15
20
25
30
35
40
45
50
72 hour mite count (sticky board)

Results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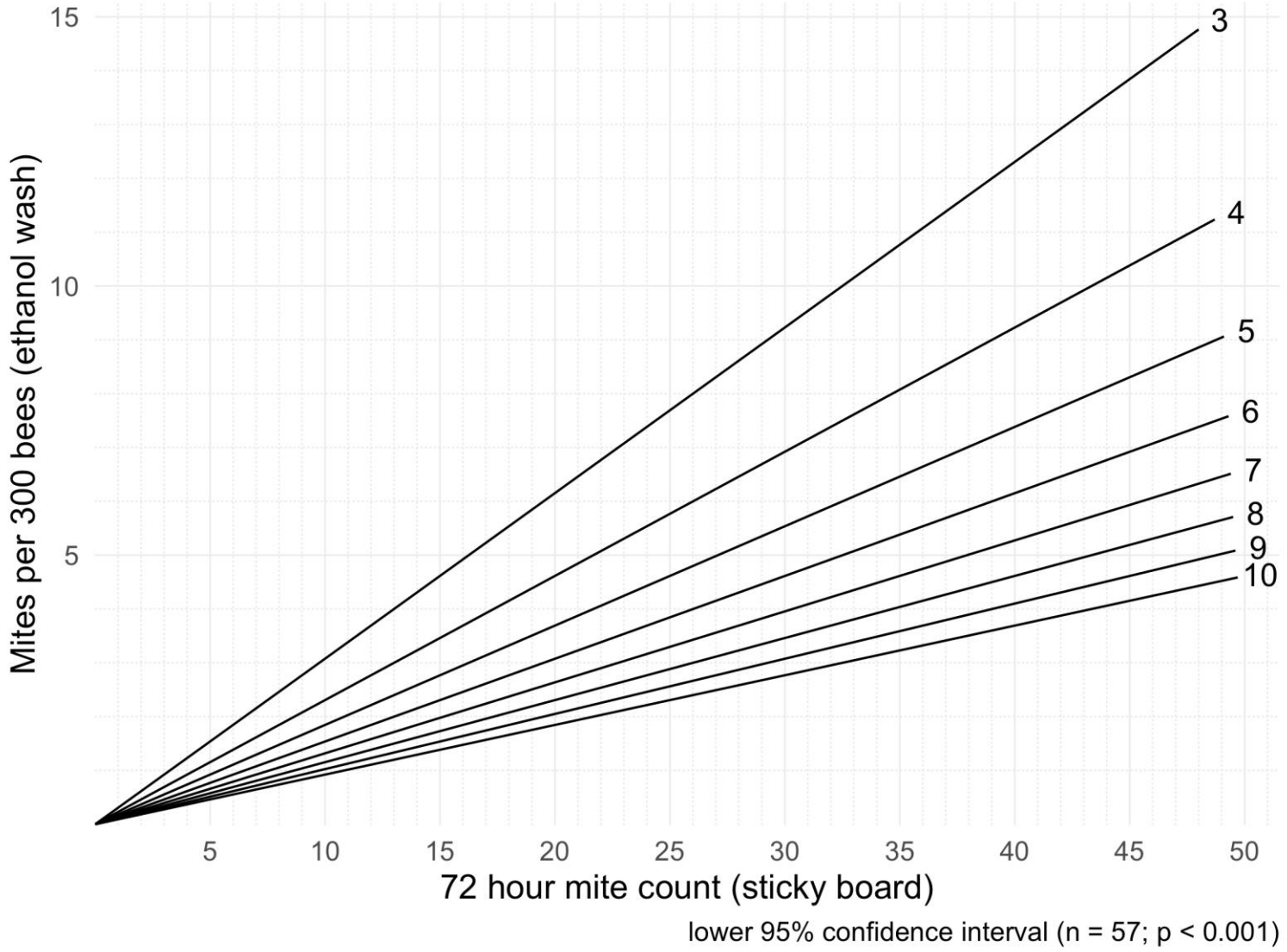
Results from Autumn 2019, Ruakura, NZ



What does this mean?

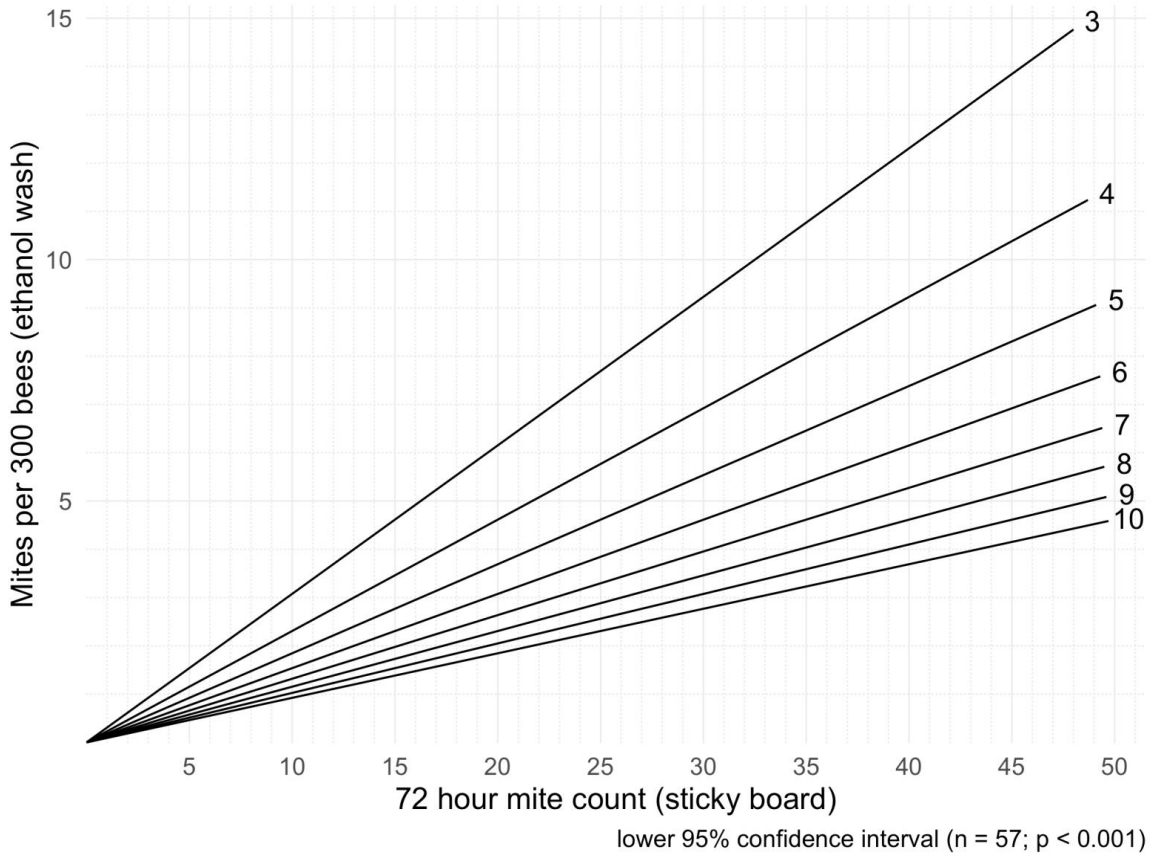
	Alcohol wash	Sticky board
Time collecting sample	High	Low
Time quantifying sample	High	Low
Repeat apiary visits	No	Yes
Destructive	~300 bees	~0 bees
Informative?	Yes	

What does this mean?

	Alcohol wash	Sticky board
Time collecting sample	High	Low
Time quantifying sample	High	Low
Repeat apiary visits	No	Yes
Destructive	~300 bees	~0 bees
Informative?	Yes	Improved
Cluster size assessment?	No	Yes

Limitations

- Human variability
- Same trend



Future

- Repeat
- More colonies
- Different size estimator
- Amount of brood
- Hygienic behaviour
- Different seasons

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Thank you

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