Department of Agriculture and Food

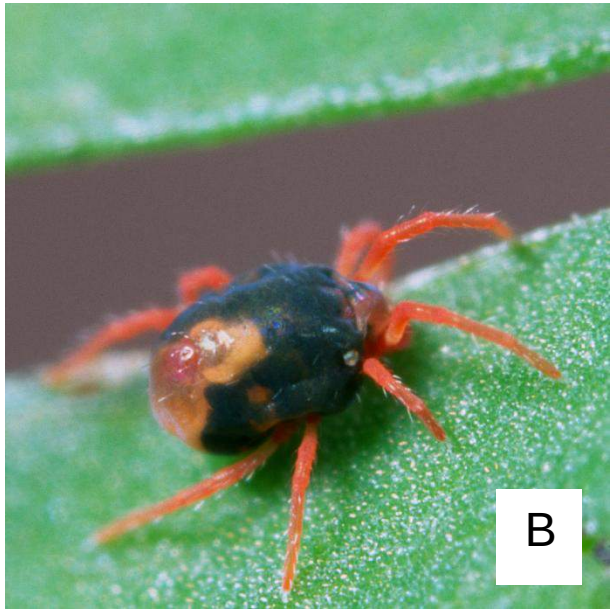
GOVERNMENT OF WESTERN AUSTRALIA

Know your pasture pests & the story of RLEM resistance

Svetlana Micic ,Entomologist

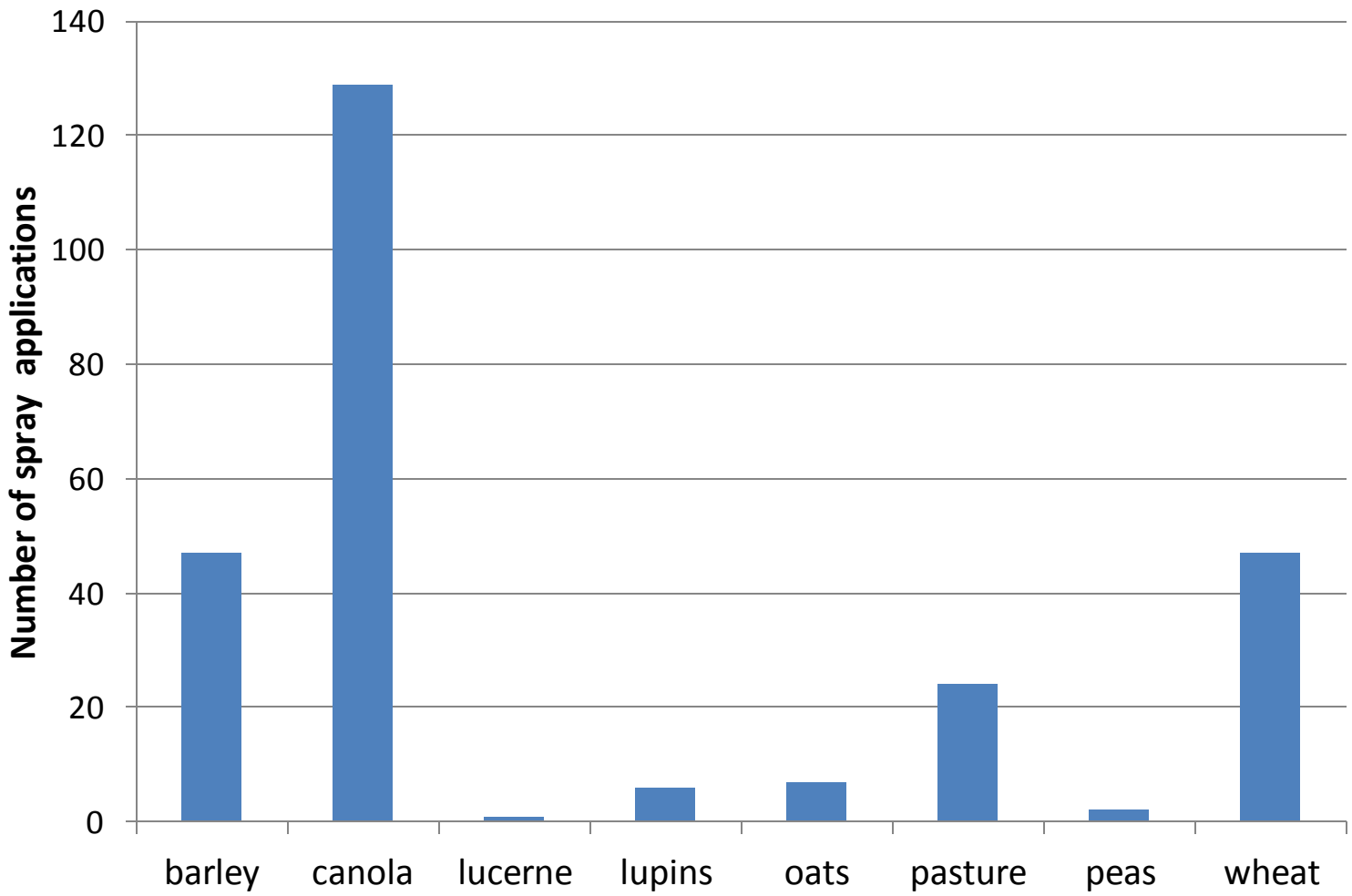
WHO AM I?

1. RLEM
2. Blue oat
3. Bryobia
4. Balaustium
5. Lucerne Flea



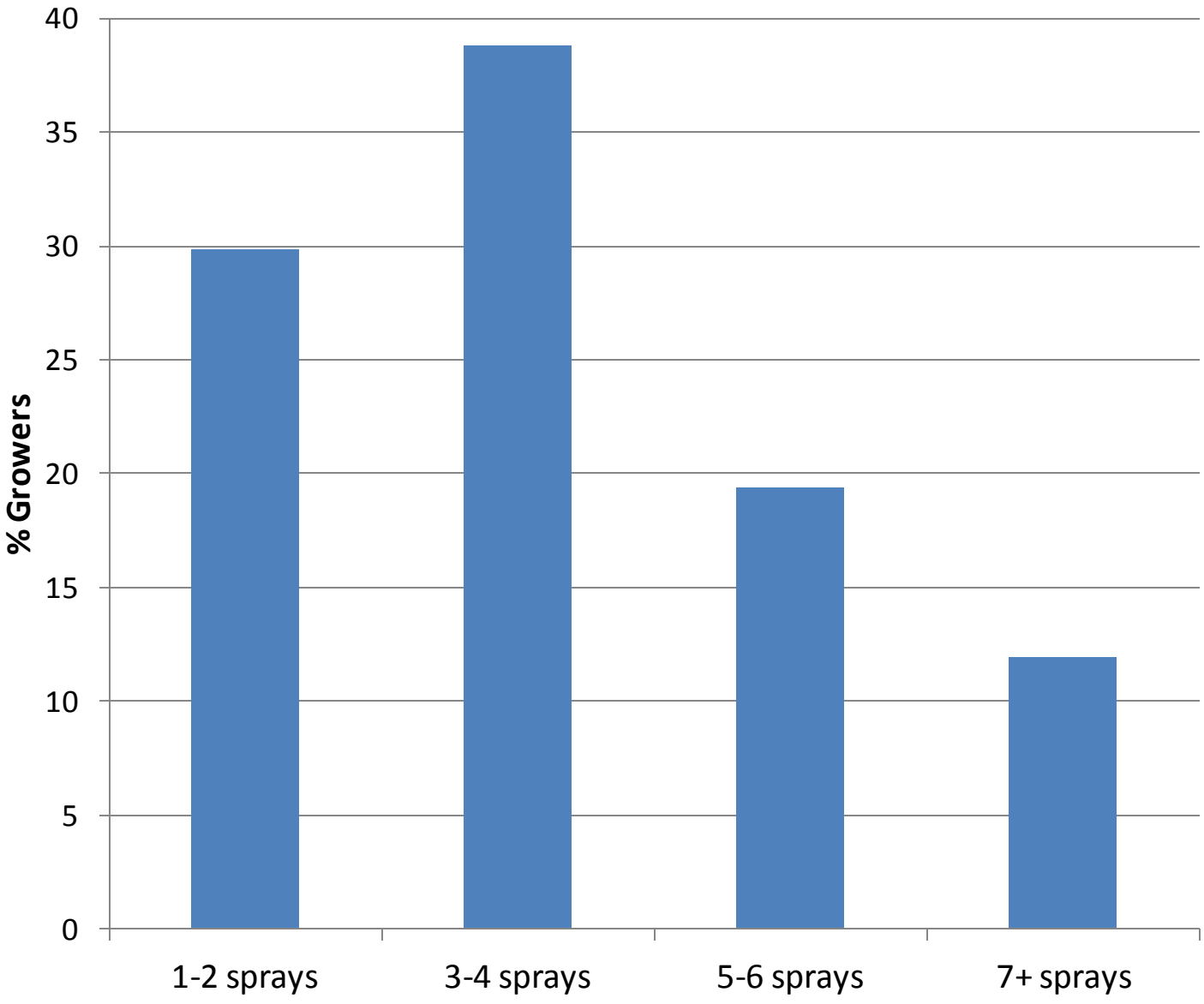
Images: CESAR

N
RLEM RESISTANCE SAMPLING OVERVIEW
BOYUP BROOK
JERRAMUNGUP
RAVENSTHORPE
ESPERANCE
ALBANY
300
400
500
600
700
800
900
1000
1100
Legend
Locations Showing Resistance
General Sampling Area
Rainfall Isohyets
0 25 50 100 150 200
Kilometers


Number of spray applications
140
120
100
80
60
40
20
0
barley
canola
lucerne
lupins
oats
pasture
peas
wheat

Department of Agriculture and Food

GOVERNMENT OF WESTERN AUSTRALIA



Resistance...

- Most paddocks with resistant mites have history of SP use NOT for RLEM control
- Resistance in RLEM is heritable and persists in populations

Department of Agriculture and Food

GOVERNMENT OF WESTERN AUSTRALIA

	Activity	Chemical grouping
1A	*Acetylcholine esterase inhibitors* • interrupt transmission of nerve impulses • Contact, stomach poisons • Some are systemic	Carbamates
1B		Organophosphates
3	*Sodium channel modulators* • Stimulate repetitive nervous discharges, leading to paralysis • Non-systemic, contact and stomach poisons • Some have strong residual activity	Pyrethroids

Department of Agriculture and Food

GOVERNMENT OF WESTERN AUSTRALIA

Using grazing management to control pasture pests

Mike Hyder, Research Officer, Albany

Team Insects: Mike Grimm, Phil Michael, Peter Mangano

Supporting your success

Methodology: INSECTS

PESTS:

- redlegged earth mite (RLEM) *Halotydeus destructor*
- blue oat mite (BOM), *Penthaleus major*
- lucerne flea (LF), *Sminthurus viridis*
- blue green aphid (BGA), *Acyrthosiphon kondoi,* and
- cereal aphids (CA), *Rhopalosiphum* spp.

BENEFICIALS:

- pasture snout mites, Bdellodes spp., (PSM), and Collembola

- Sprays Dimethoate (400 g/L) was usually applied at 300 mL product/ha were applied to Pest(-) plots so that pests would be in low numbers.
- paired sprays 14-20 days apart in autumn and spring, or as required.

Methodology: PASTURES

- **FOO maintained at different levels during spring**

Effects of grazing on pest populations (insect numbers per square meter)

	RLEM # / sq m	CA # / sq m	BGA # / sq m
1.4 T/ha, (+)	368	31	74
1.4 T/ha, (-)	13	46	155
2.8 T/ha, (+)	5557	191	991
2.8 T/ha, (-)	15	229	580
Set Stock, (+)	20638	123	1047
Set Stock, (-)	10	283	770

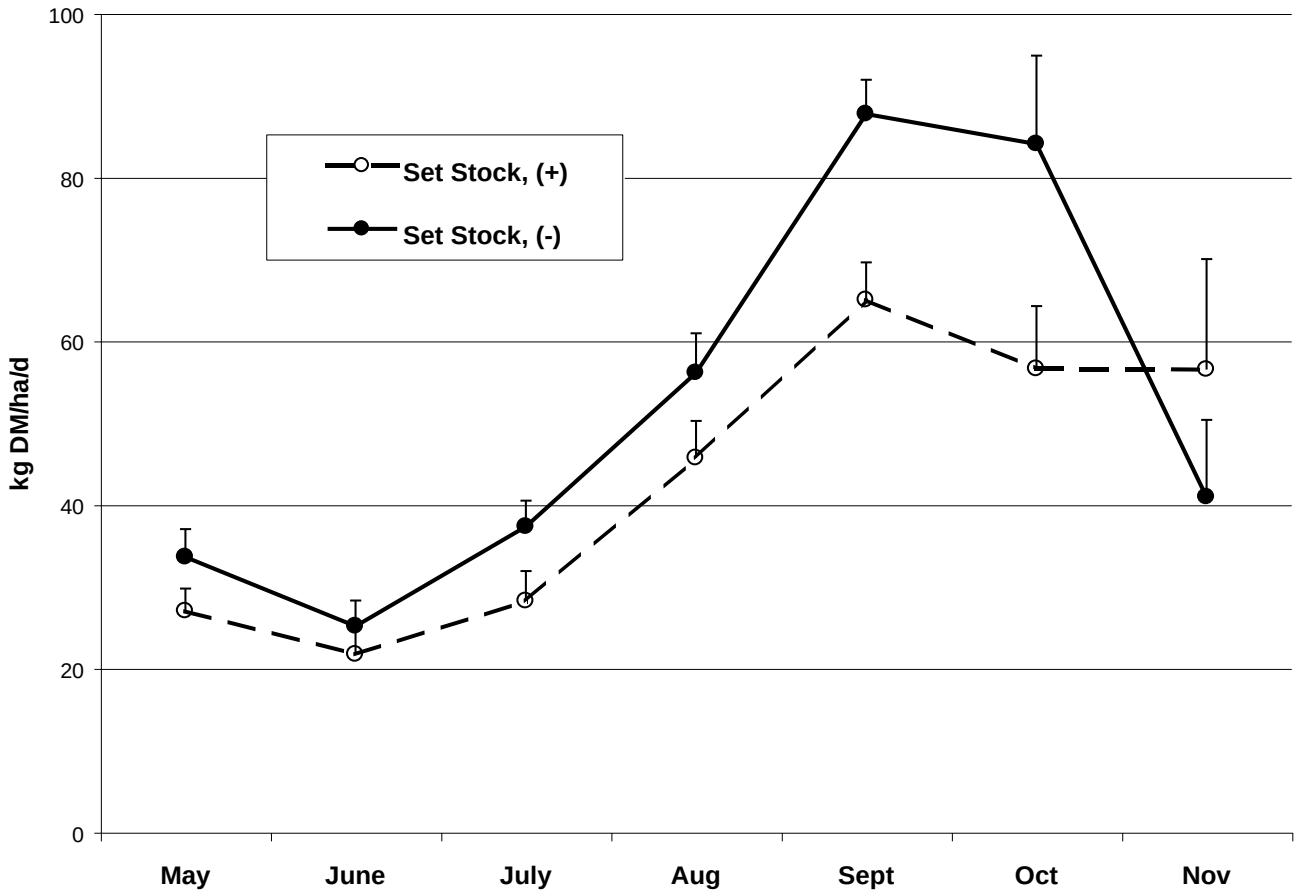
Department of Agriculture and Food
GOVERNMENT OF WESTERN AUSTRALIA

Effect of FOO on beneficial insects

	Poduroidea # / sq m	Sminthuridae # / sq m	Isotomidae # / sq m
1.4 T/ha, (+)	1763	994	139
1.4 T/ha, (-)	1038	931	208
2.8 T/ha, (+)	12248	2051	763
2.8 T/ha, (-)	6574	3006	899
Set Stock, (+)	16810	621	899
Set Stock, (-)	11472	1248	1556

Effect of pests on pasture growth

Set stocking at the district average stocking rate



3 years and 3 sites
(South Stirlings, Mt Barker and North Dandalup).

Department of Agriculture and Food

GOVERNMENT OF WESTERN AUSTRALIA

Thank you

Visit agric.wa.gov.au

Visit www.grazingsystemsanalysiswa.com.au

Supporting your success