



APPLICATION OF INERT OILS IN THE CONTROL OF RED CHICKEN MITES *DERMANYSSUS GALLINAE*

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The use of inert oils to control *Dermanyssus gallinae* (de Geer, 1778) is recommended by: non-toxicity; effective, complex acaricidal action, which excludes the possibility of creating resistance; and multipurpose application (in prevention, curative and biosafety). The first dedicated formulation of inert oils to control red chicken mite is P 547/17. The new formulation P 2020/0033, aims to increase economic accessibility to farmers and ease the conditions for more detailed application. The goal of our work are consider the current arguments for the application of special formulations P 547/17 and P 2020/0033 inert oils in the control of *D. gallinae*.

MATERIAL AND METHOD

1. Petri dish method for directly exposed 1 min., And continuous exposure. 2. Tin box method for subsequently exposed for 1 hour (residual effect). 3. Clinical trial v.o.f. P 547/17, 2 methods of application, spray method, in empty, cleaned, washed and disinfected buildings, resting before setting a new flock.

Procedure 1. The procedure is intended for simpler ambient conditions. Single application on cages and equipment 20%, with repeated treatment of only absorbent surfaces (floor, walls) with 10% v.o.

Procedure 2. The procedure is intended for more demanding ambient conditions. Project ID 1115 adapted application P 547/17 for the conditions of large industrial cage-type facilities (conventional and enriched). In the first treatment, 20% excess water emulsion is applied. In the second treatment, after 5 or more days, a small dose of 50% water emulsion is used, which is applied only to the most important places of the cage, while for absorbent surfaces, 10% excess water emulsion is used. The clinical trial was conducted in 20 facilities (parents, breeding, and exploitation), with capacity of 396,500 poultry

Laboratory testing v.o.f. P 2020/0033 by the method of petridishes (1) and tin boxes (2,3,4).

No.	Type of exposure	Substrate position	Exposure	Mortality (%)
1	Direct	-	1 minute	100
2	Subsequently, after 1 month.	oblique	1 hour	38
3	Subsequently, after 1 month.	revers	1 hour	81
4	Subsequently, after 1 month.	flat	1 hour	98

Clinical trial v.o.f. P 547/17, presentation of examples of optimization of procedure 1: applications for rearing (in a cage system) parent flocks (floor way of rearing), and small egg producers (cages with trays). Examples of optimized applications:

No.	Farm	Purpose	Chicken capacity	v.o.f. P 547/17 20% / * 15%	Period of negative finding (years)	Observations
1	JS	Production of eggs in cages on trays	2,500	2017.07.24.	4 (and continues)	ERADICATION
2	ME	Production of eggs in cages on trays	4,000	2017.07.24.	4 (and continues)	ERADICATION
3	AG1	Breeding in the cage system	18,000	2018.08.14.	3 (and continues)	ERADICATION
4	AG2	Breeding in the cage system	18,000	2018.08.14.	3 (and continues)	ERADICATION
5	AG3	Breeding in the cage system	18,000	2018.08.20.	3 (and continues)	ERADICATION
6	AG4	Breeding in the cage system	18,000	2018.08.20.	3 (and continues)	ERADICATION
7	AG5	Breeding in the cage system	18,000	2018.08.31.	3 (and continues)	ERADICATION
8	AG6	Breeding in the cage system	18,000	2018.08.31.	3 (and continues)	ERADICATION
9	AG7	Breeding in the cage system	18,000	2018.08.31.	3 (and continues)	ERADICATION
10	AG8	Breeding in the cage system	18,000	2018.08.31.	3 (and continues)	ERADICATION
11	SF1	Parent flock floor system	9,000	2018.11.13.	2,5 (and continues)	ERADICATION
12	SF2	Parent flock floor system	9,000	2018.11.20.	2,5 (and continues)	ERADICATION
13	SF3	Parent flock floor system	7,000	2019.07.21.	2 (and continues)	ERADICATION

Examples of reinvasion in objects that have been the subject of clinical trial

4,5	Making of the object on the farm	Laying hen capacity	Method and time control	Preparation time	Period without <i>D. gallinae</i> before reinvasion	The moment of diagnosing reinvasion
1	C5	24,000	S002	2018.03.09.	2,5 years ERADICATION	2021.02.05.
2	C5	24,000	I01115	2019.04.30. 2019.05.06.	1 years ERADICATION.	2020.07.22.
3	B2	60,000	I01115	2020.06.04. 2020.06.20.	Less than 12 months	2021.06.06.

Clinical trial v.o.f. P 547/17, current results of procedure 2, project ID 1115

No.	Farm / number	Laying hen capacity	T1 I1115	T2 I1115	Period of negative finding	Observations
1	C1	28,000	2019.03.01.	2019.03.04.	2 years, lists	ERADICATION
2	C2	47,000	2019.09.17.	2019.09.23.	1,5 years, lists	ERADICATION
3	C3	14,000	2019.02.23.	2019.02.28.	2,5 years, lists	ERADICATION
4	C5	24,000	2021.06.12.	2021.06.18.	2 months, lists	Treatments after reinvasion
5	C6	24,000	2020.09.03.	2020.09.10.	11 months, lists	Treatments after reinvasion
6	C7	24,000	2021.02.26.	2021.03.03.	5 months, lists	Treatments after reinvasion
7	B2	60,000	2020.06.04.	2020.06.20.	12 months,	Reinvasion (+)