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Stakeholder workshop on the procurement
and supply of pesticides for locust control

Equipment & formulation issues



ULV pesticide application

Standards / technical requirements

- FAO minimum requirements & standards for pesticide application equipment
- Evaluations of application equipment for locust control

Any new equipment for ULV application, which meets standards?



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Damage to application equipment by ULV insecticides

- Madagascar case – 2014 – use of a teflubenzuron formulation
- Damage to tanks/hoppers of spray aircraft
 - Ecureuil AS 350 helicopter: Simplex hopper in carbon fibreglass
 - Turbo Thrush aircraft: fibreglass/polyester resin hopper



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Damage to application equipment by ULV insecticides

Parts of aircraft hoppers “dissolved”



Turbo Thrush aircraft



Ecureuil helicopter

Photos: S. Lagnaoui



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Teflubenzuron formulation was analysed

- Found to be “within specifications” (i.e. of supplier)
- Specification concerned a.i., free acid, pH (aqueous dilution), viscosity, density, water
- Specification did not concern co-formulations (e.g. solvents)
 - Note: Also if JMPS specification



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Composition of this teflubenzuron 5% UL formulation (SDS information)

- Benzamide, N-[[[(3,5-dichloro-2,4-difluorophenyl)amino]carbonyl]-2,6- difluoro- [5.2% (w/w)] = **TEFLUBENZURON**
- N-methyl-2-pyrrolidone (NMP); 1-methyl-2-pyrrolidone [$<45\%$]
- propan-2-ol; isopropyl alcohol; isopropanol [$<10\%$]
- Rape oil [$<50\%$]

- NMP is powerful solvent
- Commonly used in pesticide formulations
- Dissolves/affects e.g.: PVC, polyester, epoxy resins

LABEL:

Spray tanks/hoppers should be made out of polyethylene or polypropylene



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UL formulations for locust control

- How to avoid UL formulations for locust control that are incompatible with widely used spray equipment?
- Options (not exhaustive):
 - Establishment of list of co-formulants (in particular solvents) that are incompatible with specific spray equipment
 - Bidder to list all co-formulants (above a critical concentration) as part of FAO bidding document (can be treated as CBI)
 - FAO to indicate, in bidding requirements, the equipment/materials with which the insecticide should be compatible
 - ...other?



Drum corrosion with another teflubenzuron formulation



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