Investigating potential chemical control measures for bean seed fly

Bean seed fly meeting 2020

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Force Registration status

Tefluthrin active substance

- The registration of the active ingredient in the EU re-approved in 2019

  CRD have extended the use up period for MAPP 11752 so that the EAMU uses can continue

  - 31 December 2020 for sale and distribution
  - 31 December 2021 for the disposal, storage and use of existing stocks

- Anticipate further assessment of the active substance circa >2024 with the expiry of product registrations in 2027.

Force - EAMU registration

Force 20CS is not an on-label use, there is no efficacy data for the vegetable uses

EAMU

- The Force ST EAMU is based on the sugar beet on-label approved use
  - The sugar beet use of 13 gAI/ha maximum

- Hort EAMU uses are far exceeding the maximum grams of AI per hectare
  - The dose rate per unit of seeds is required to be reduced for the EAMU approval
  - For example onions dosage is 25ml / 100,000 seeds = 27.5 gAI/ha

The sugar beet approval is granted for the treatment of pelleted seeds

- All seeds treated under the EAMU approval also need to be pelleted, film coated is not acceptable

Karate® 0.4GR Force® Evo

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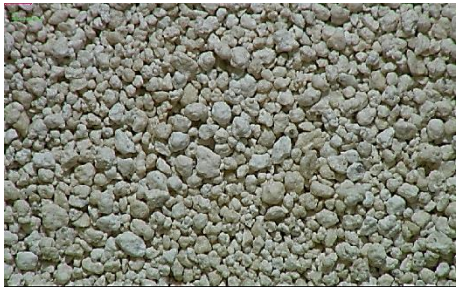
™

Karate® 0.4GR

CROPS :	Pest	Rate	Nb of APP	PHI	Buffer zone
Carrot, Celeriac, other root veges of same category	Wireworms, Diabrotica virgifera	15 kg/ha	1	Not applied	20 m
Cucumber, courgette					
Cauliflower, Broccoli, Cabbages, Brussel sprouts					
Lettuce, lamb lettuce, chicory					
Corn					
Sweet corn					
Melon, watermelon					
Pepper					
Soja					
Sorghum					
Tomato, Aubergine					
Sunflower					
Potato					none
Tobacco				-	5 m

Product label Karate® 0.4GR



- Composition : **0.4% Lambda-cyhalothrin**
  - Family : Pyrethroid
  - Mode of action : ***contact, ingestion & vapor diffusion***
- Formulation : microgranules (density : 0.9)

- Crops : **Maize, potato**, then veges
- Dose rate : **15 kg** (*60 g/ha of Lambda-cyhalothrin*)
- Open field use only.
- Label : soil treatment (in furrow) against
  - **Wireworms,Diabrotica**

- Nb max of applications : 1
- Buffer zone : 20 metres for all crops no buffer zone for potato.

Force® Evo

Crops		Rate	Nb of app	PHI	Buffer zone
Asparagus	*Chaetocnema tibialis, Agriotes sp., Agrotis sp., Ceuthorhynchus pleurostigma, Blaniulus guttulatus, Centipeda spec., Chamaepsila rosae, Hylemya sp., Melolontha melolontha, Tipula spp*	16 - 20 kg/ha	1	-	TBC
Bean, french bean, pea					
Cabbage, cauliflower					
Carrot				-	
Celery, fennel				-	
Lettuce and other salads				-	
Melon, watermelon, cucumber				-	
Tomato, aubergine, pepper				-	
Turnip, swede (rutabaga)				-	
Corn, sorghum	*Agriotes sp., Hylemia sp., Scutigerella immaculata, Tipula sp., Agrotis sp., Diabrotica sp.*	12 – 16 kg	1	-	
Corn	*Diabrotica spp.*	20 kg	In case of high risk: high presence of Diabrotica, early seeding, mono succeeding crop	-	
Flowers and ornamentals	*Agriotes spp., Agrotis spp., Blaniulus guttulatus, Centipeda spec., Chaetocnema tibialis, Melolontha melolontha, Tipula spp.*	40 kg/ha Soil incorporated	1	-	
Potato	*Agriotes spp., Agrotis spp., Diabrotica spp.*	12 - 16 kg	At seeding or transplanting or ridging (BBCH 105-125)	-	
Sugar beet	*Chaetocnema tibialis, Atomaria linearis, Scutigerella immaculata, Tipula sp., Agriotes sp.*	12 - 16 kg	1	-	
Sunflower, Soy, OSR	*Chaetocnema tibialis, Agriotes sp., Hylemya sp., Agrotis sp.*	12 - 16 kg	1	-	
Sweet corn	*Agriotes sp., Hylemia sp., Scutigerella immaculata, Tipula sp., Agrotis sp., Diabrotica sp.*	12 - 16 kg	1	-	
Tobacco	*Agriotes spp., Agrotis spp., Diabrotica spp.*	12 - 16 kg	1	-	

Product label Force® Evo

- Composition : **0.5% Tefluthrin + Mineral NP (10:41) + Mn 3% + Zn 2%**
  - Family : Pyrethroid
  - Mode of action : ***contact, ingestion & vapor diffusion***
- Formulation : microgranules (density : 0.9)
- Crops : **Maize,** veges, ornementals.
- Dose rate : from **12 to 20 kg** depending on crops. Open field use only.
- Label : soil treatment (in furrow) against
  - **Wireworms, Scutigerella, Diabrotica, flies…**
- Nb max of applications : 1
- Buffer zone : TBC

Formulation comparison : a.i / ha

Product (kg/ha)	**Karaté 0.4 GR (4 g ai/kg)**	**Force Evo (5 g ai/kg)**	
12		60	g a.i /ha
15	60	75	g a.i /ha
16		80	g a.i /ha
20		100	g a.i /ha

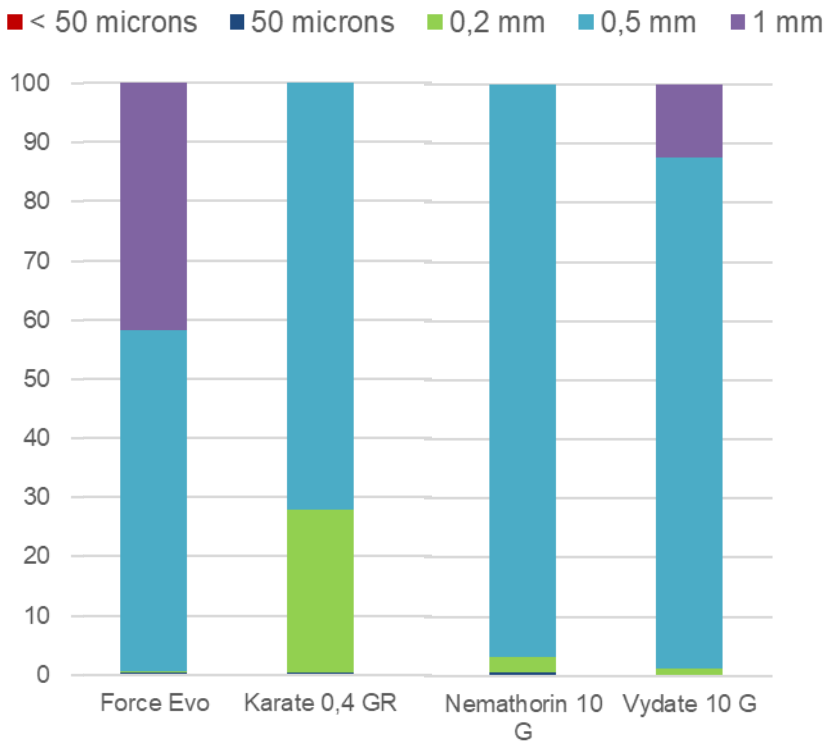
Formulations comparison

Karate® 0.4GR

Force® Evo

Granules sizing with sieve test

Timing : 1 min
Shakes : 70/min
Sampling : 100 g
Average of 2 rep

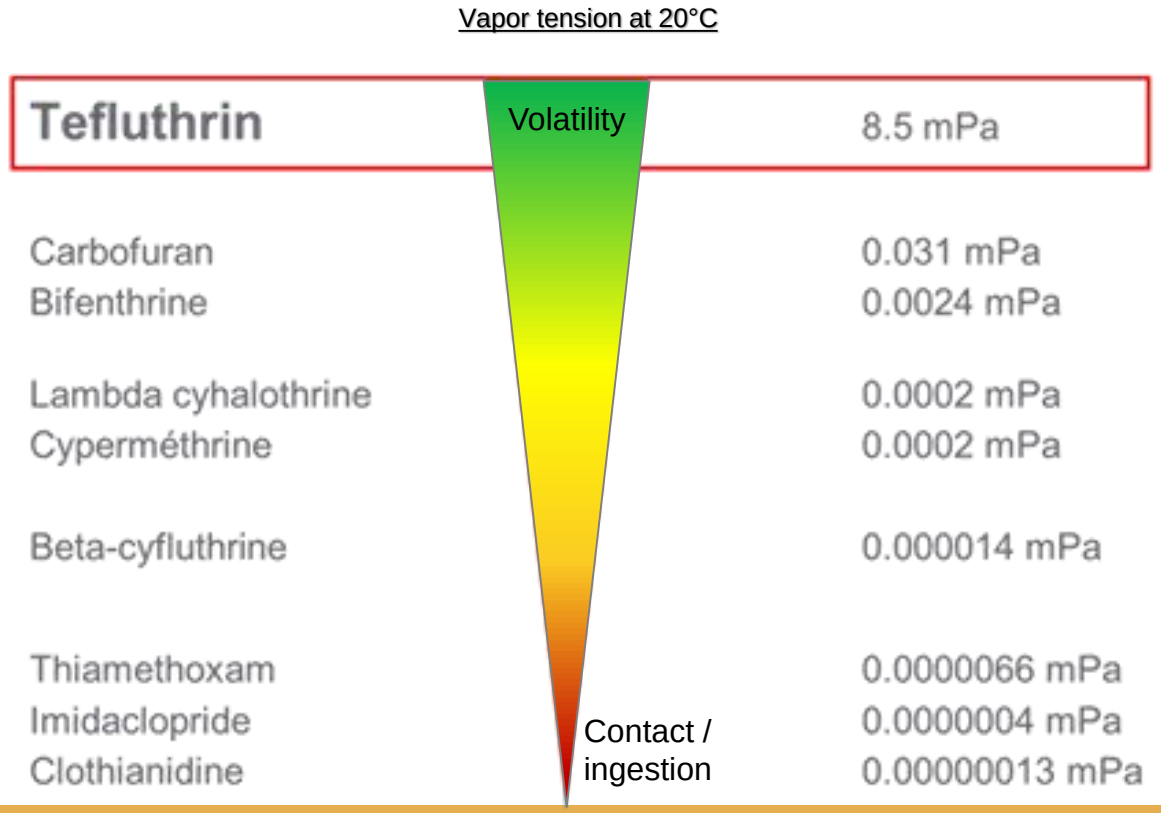


Low dust = 3-50g of dust per 100 kg of product and no granule size changes after shaking in Heubach tank

Vapor tension differences

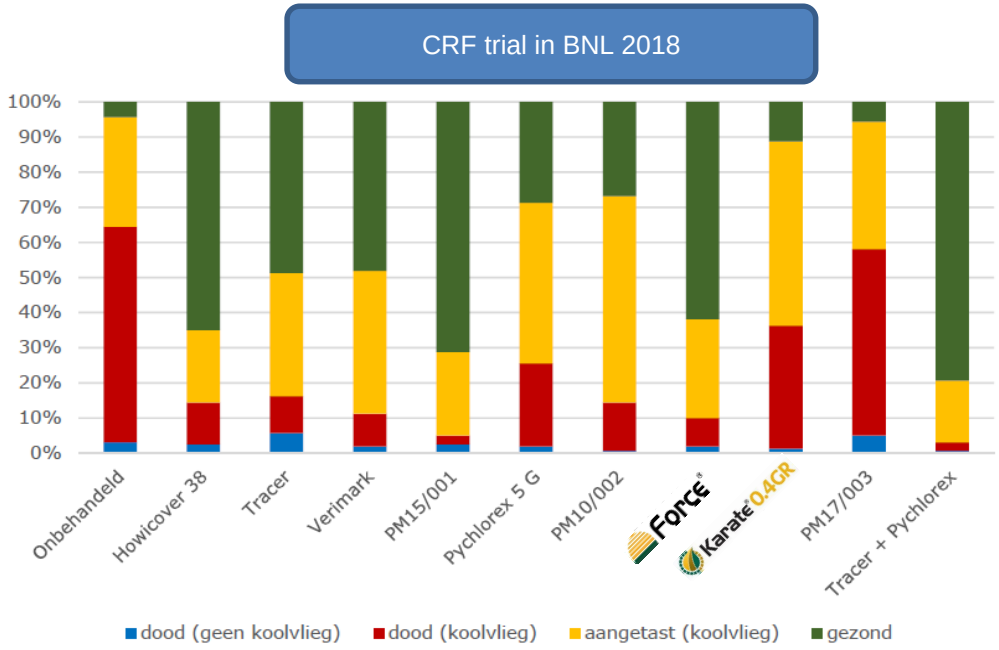
- ✓ Tefluthrin has the best vapor tension in soil compare to all insecticides. This vapor effect allows a high regularity in the field with good soil repartition and large area covered.

- ✓ With this good vapor effect, tefluthrin provides a very good early soil protection against a broad range of insects, but has also a good long lasting effect.

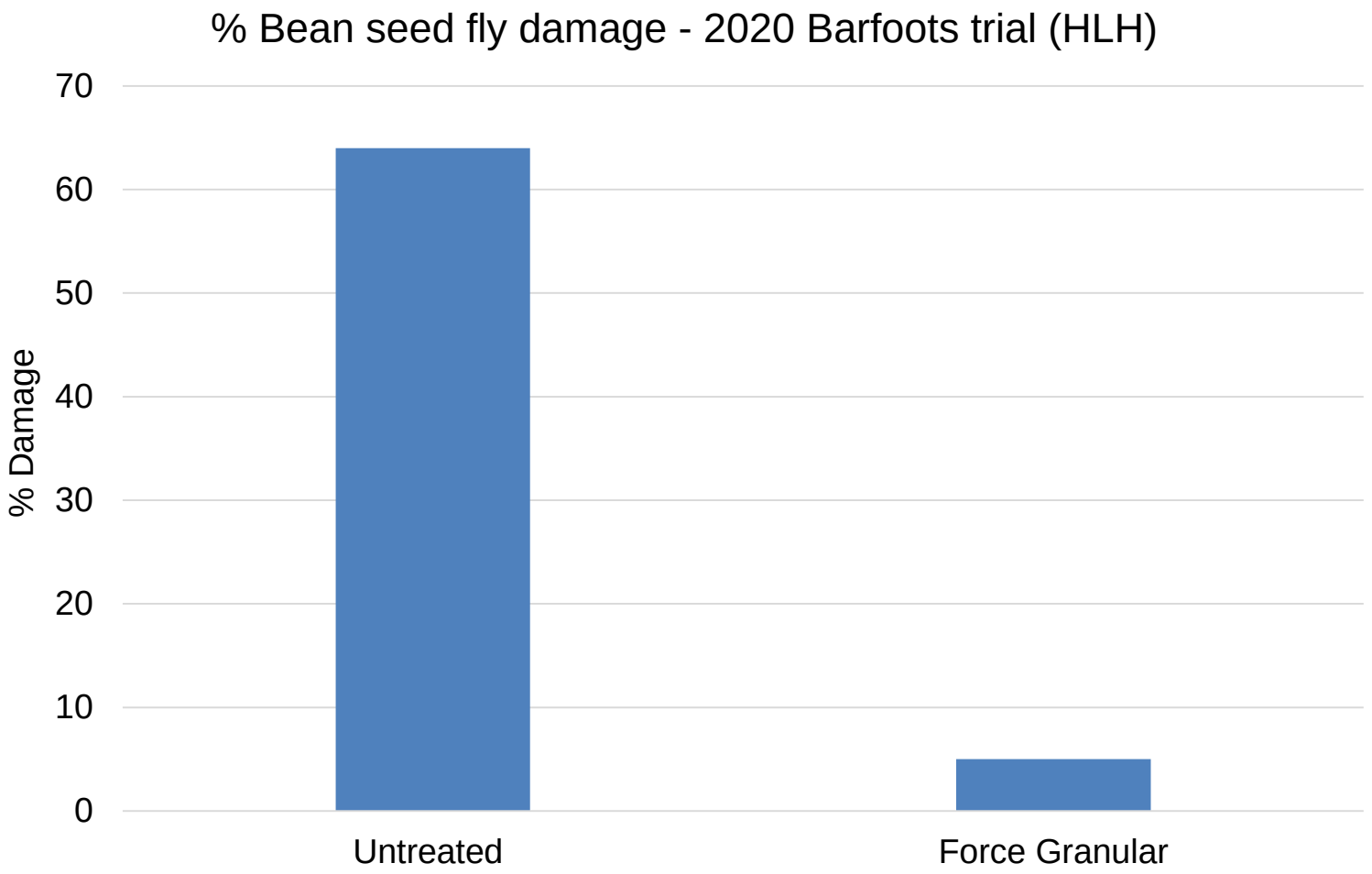


Karate 0.4GR information

- ✓ Force: best granule to control flies.
- ✓ Limited data concerning LCY for fly control. Clear secondary effect.
- ✓ Diffusor important only in crops with deep sowing (>2cm), or planted crops like melon, tomato. No diffusor for brassica, onion, carrot.



UK Force Evo Trials



UK Force Evo Trials

Force Granule

Untreated

No residues detected

Photo: Peter Waldock

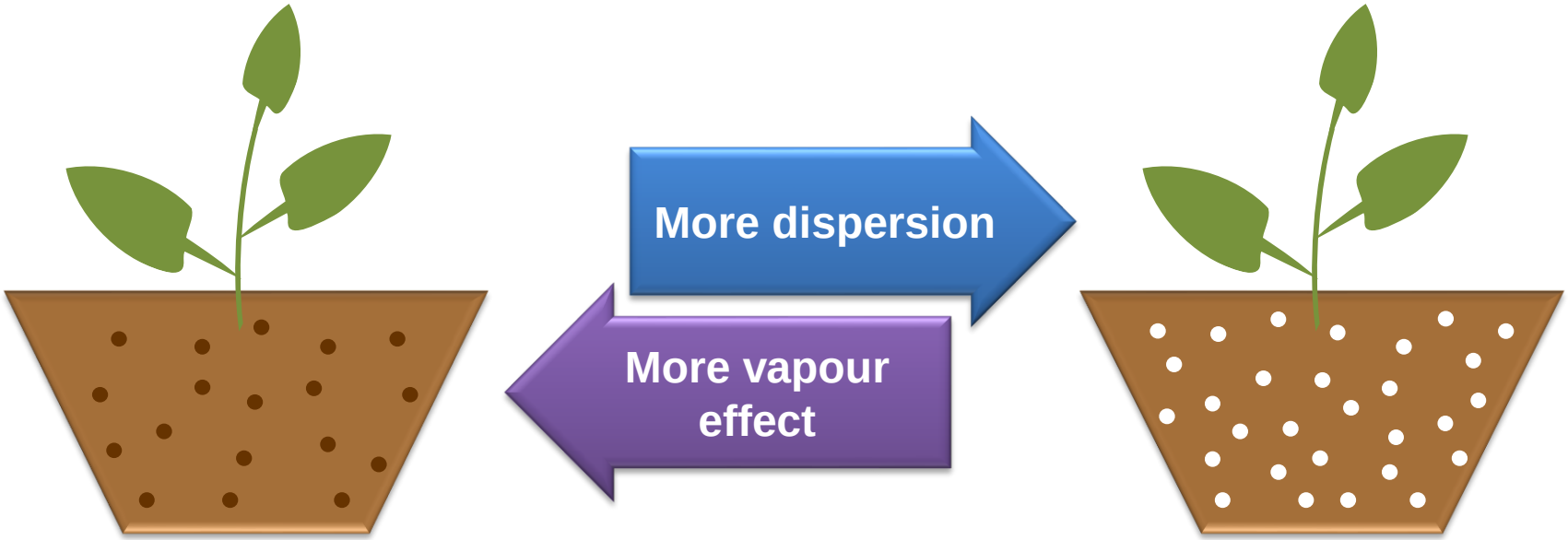
Benefits of both formulations

Force® Evo

Rate = 12 to 20 kg/ha
Size of granules = larger
Vapour effect = strong

Karate® 0.4GR

Rate = 15 kg/ha
Size of granules = medium
Vapour effect = medium/low



Bean seed fly options

- ✓ Force Evo looking promising for Bean seed fly
- ✓ Karate Granule could offer some protection but lacks vapour activity for fly pests
- ✓ Force ST is an option but clarification on film coated seed and rates applied are needed in 2021

- ✓ Future TFT application options are also being explored