Investigating potential chemical control measures for bean seed fly

Bean seed fly meeting 2023

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EAMU registration

EAMU – MAPP number 11752

- The Force ST EAMU is based on the sugarbeet on-label approved u
  - -The sugarbeet use of the 13 gAI/ha
  - -Based on a pelleted seed crop

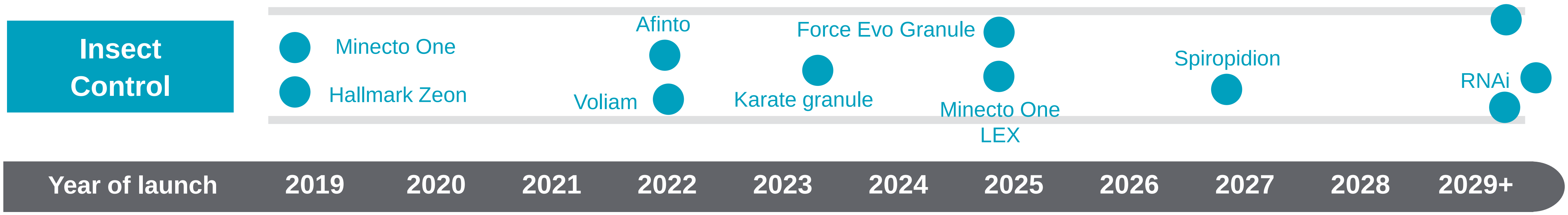
- Hort EAMU uses are far exceeding the maximum gr ... are
  - - The dose rate per unit of seeds is requi ... for the EAMU approval
  - - For example onions dosage is 25m ... = 27.5 gAI/ha
  - - All minor crops are film coated

- **Withdrawal period for product**
  - - 31 December 2020 ... ibution
  - - 31 December ... sal, storage and use of existing stocks

- **Treated seeds:**
  - -Seed treated with Force ST MAPP 11752 may be sown beyond 31 Dec 2021 in the UK

● AHDB have applied for an EA
for Leeks and Salad onion

Syngenta insecticide pipeline



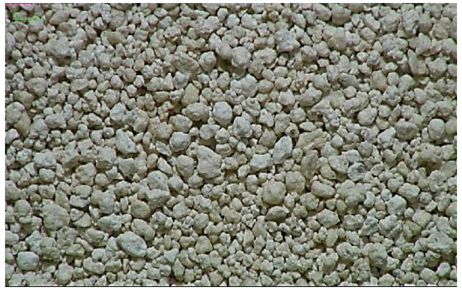
Karate® 0.4GR Force® Evo

syngenta®

™

Proposed Product label

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



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

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

Proposed 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 : Vegetables

- Dose rate : from **12 to 20 kg** depending on crops. Open field use only.
- Label : soil treatment (in furrow) against
    - **Wireworms, Scutigerella, Diabrotica, flies…**

- No. max of applications : 1
- Buffer zone : TBC

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.

Vapor tension at 20°C

Tefluthrin	8.5 mPa
Carbofuran	0.031 mPa
Bifenthrine	0.0024 mPa
Lambda cyhalothrine	0.0002 mPa
Cyperméthrine	0.0002 mPa
Beta-cyfluthrine	0.000014 mPa
Thiamethoxam	0.0000066 mPa
Imidaclopride	0.0000004 mPa
Clothianidine	0.00000013 mPa

Volatility

Contact / ingestion

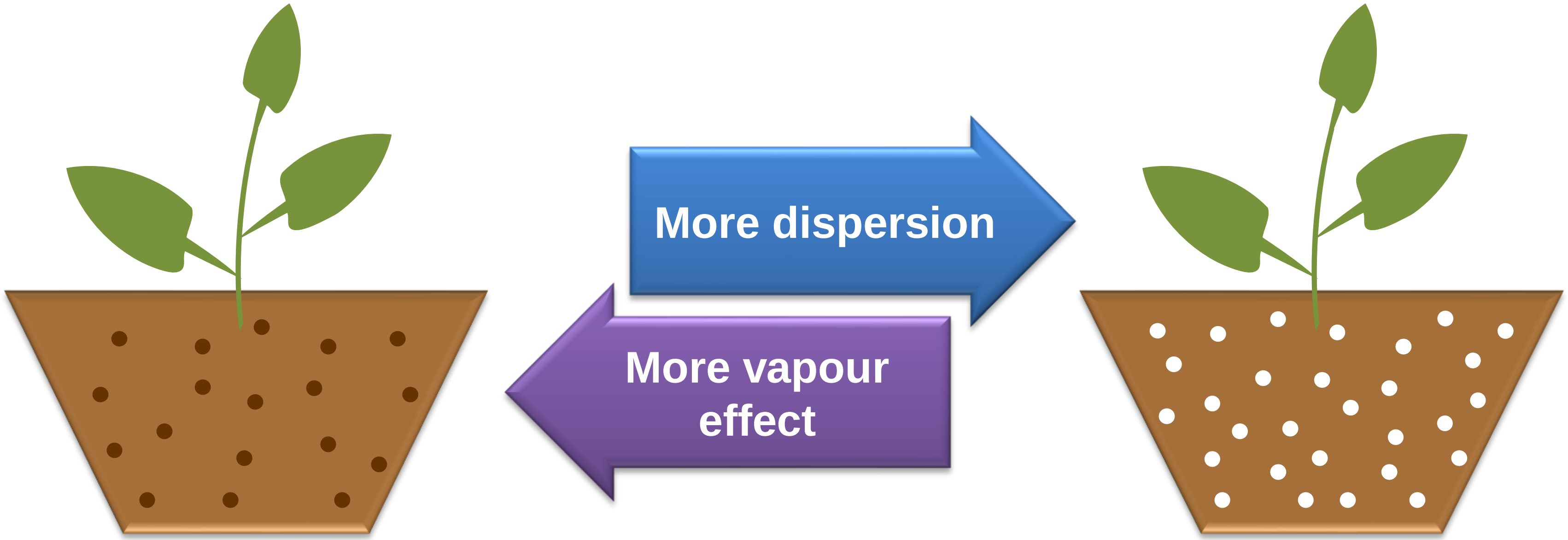
Benefits of both formulations

Force® Evo

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

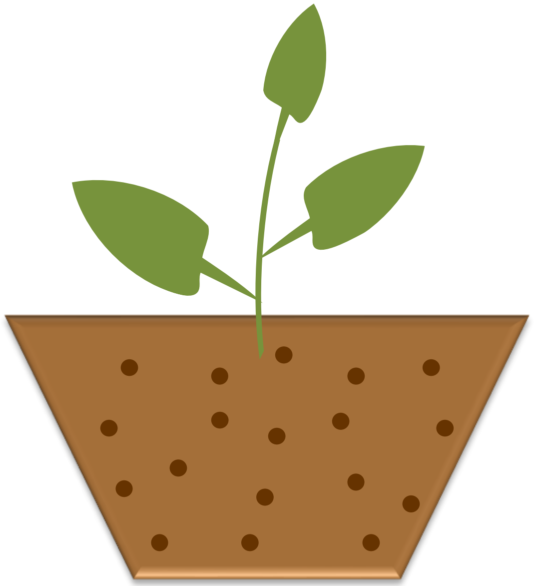
Karate® 0.4GR

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

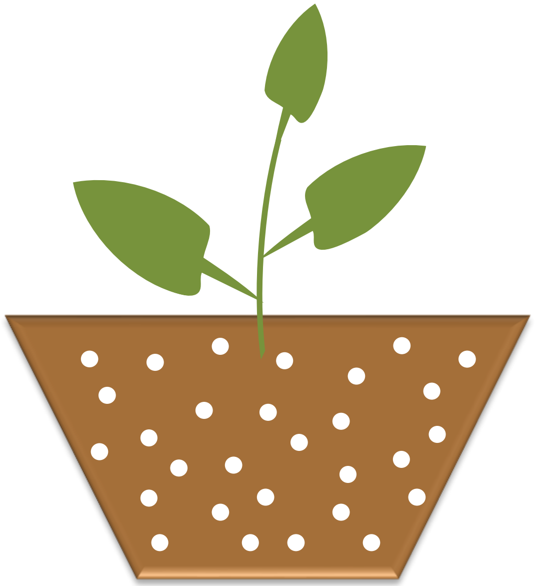


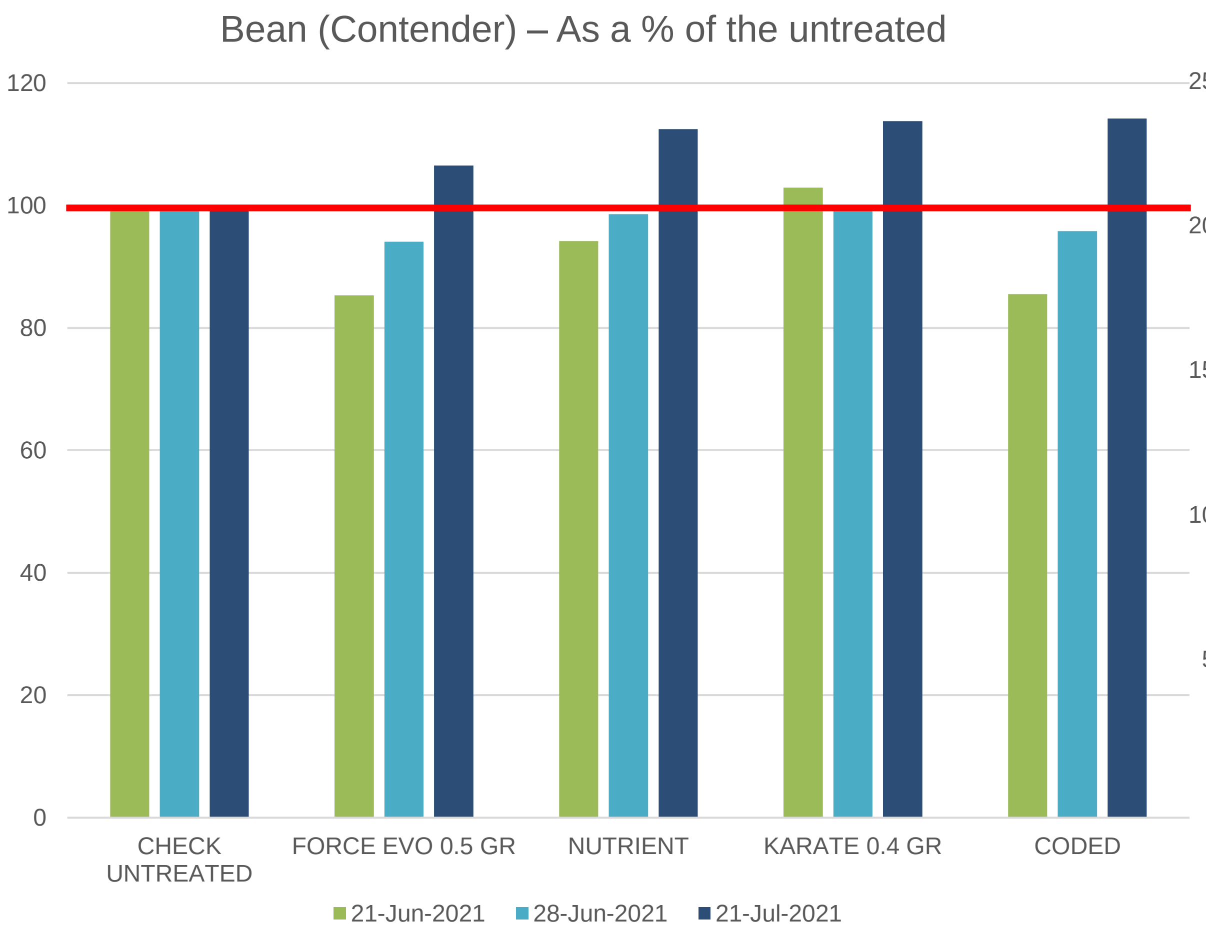
Field trial results 2022

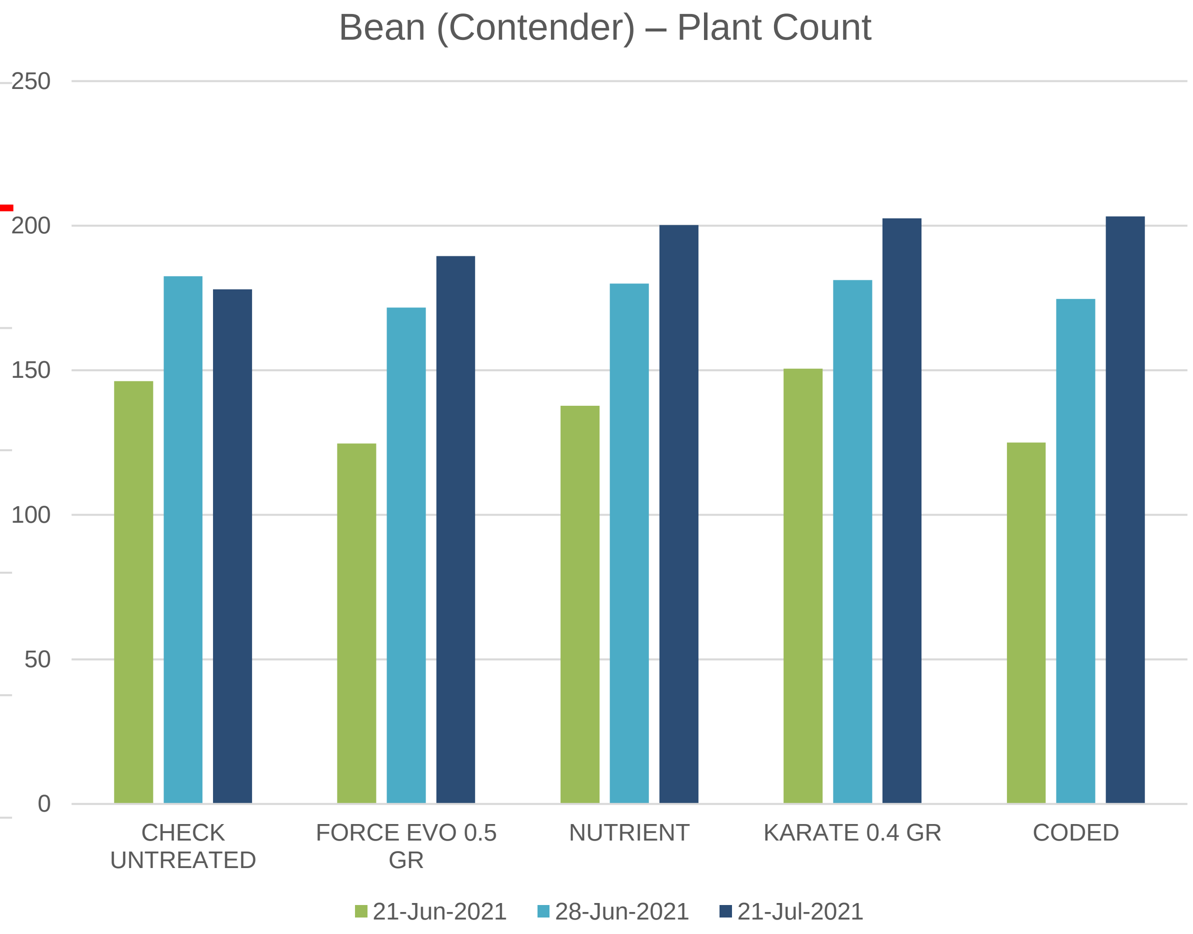
Force® Evo



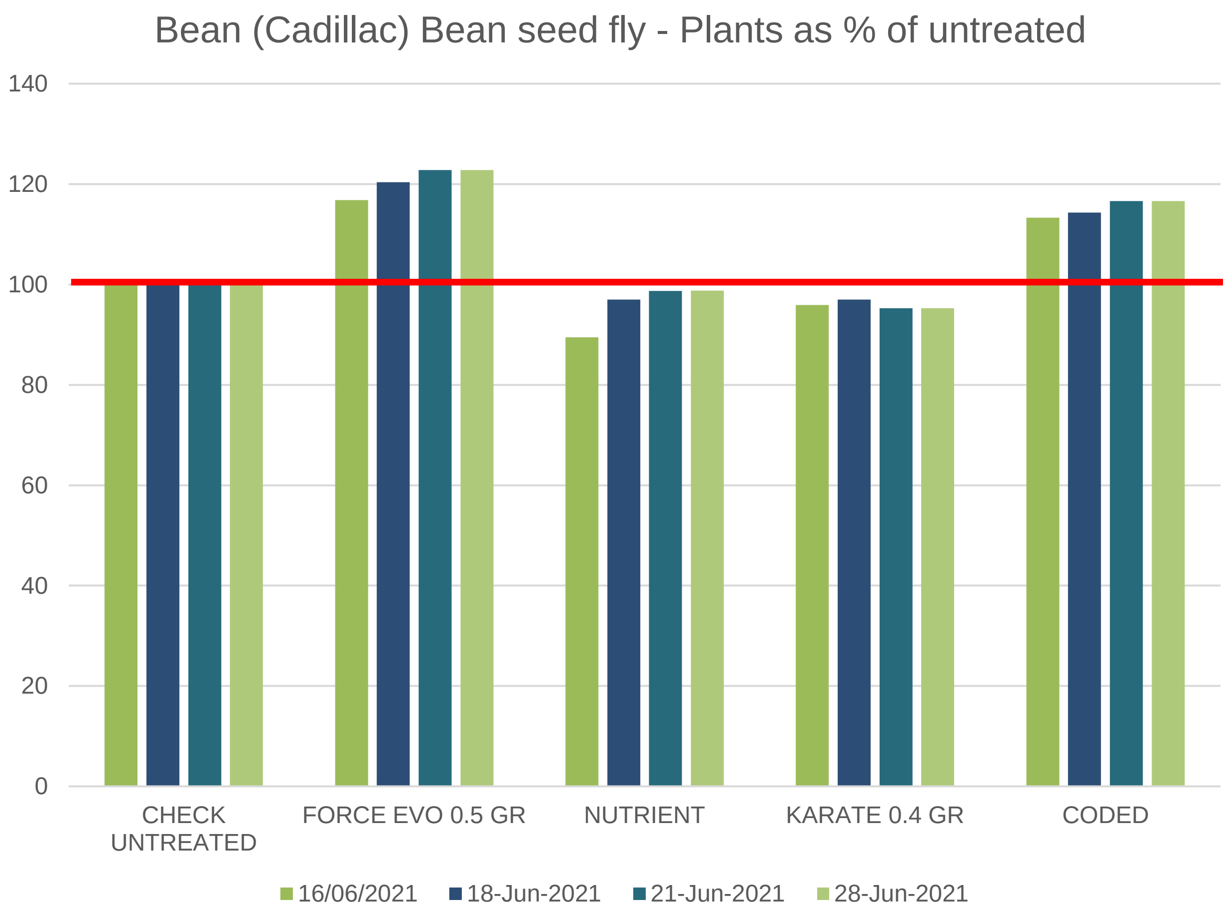
Karate® 0.4GR

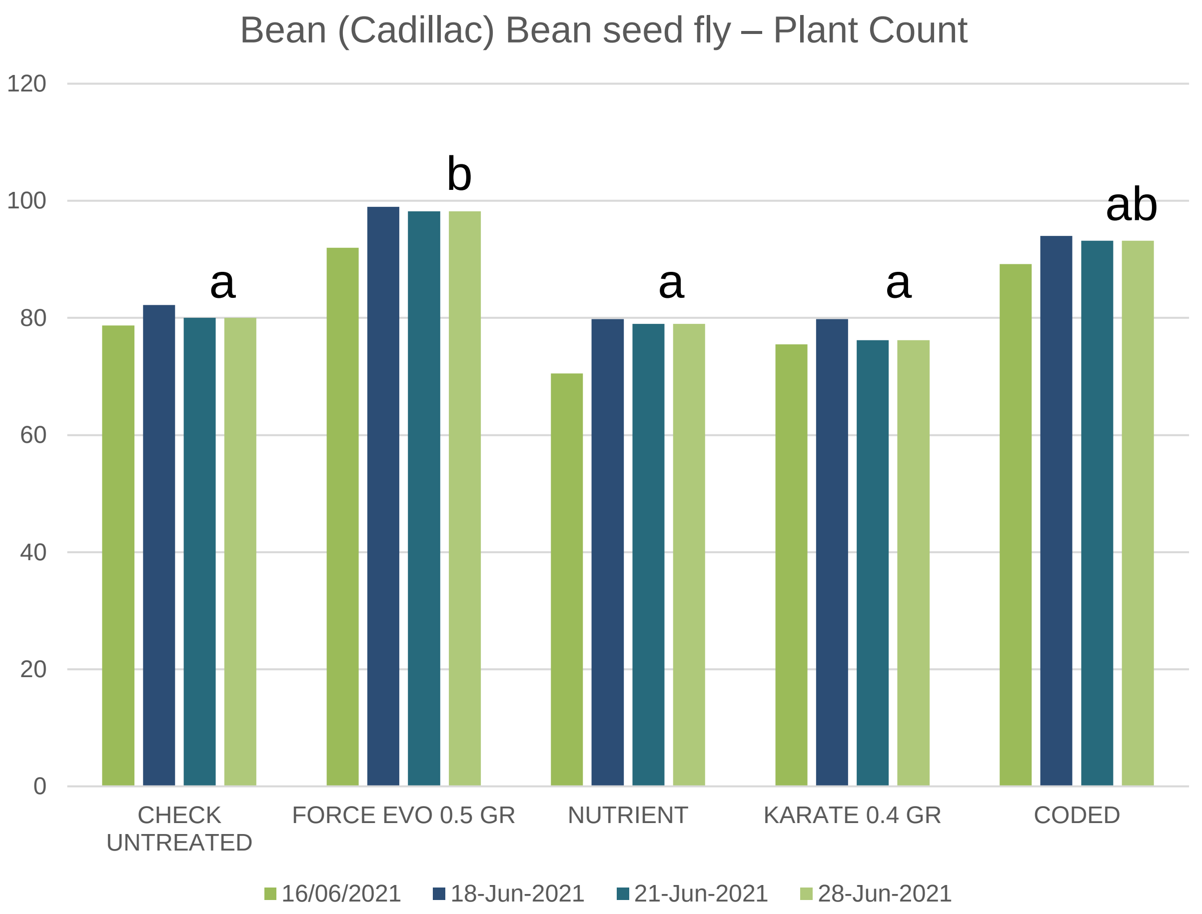




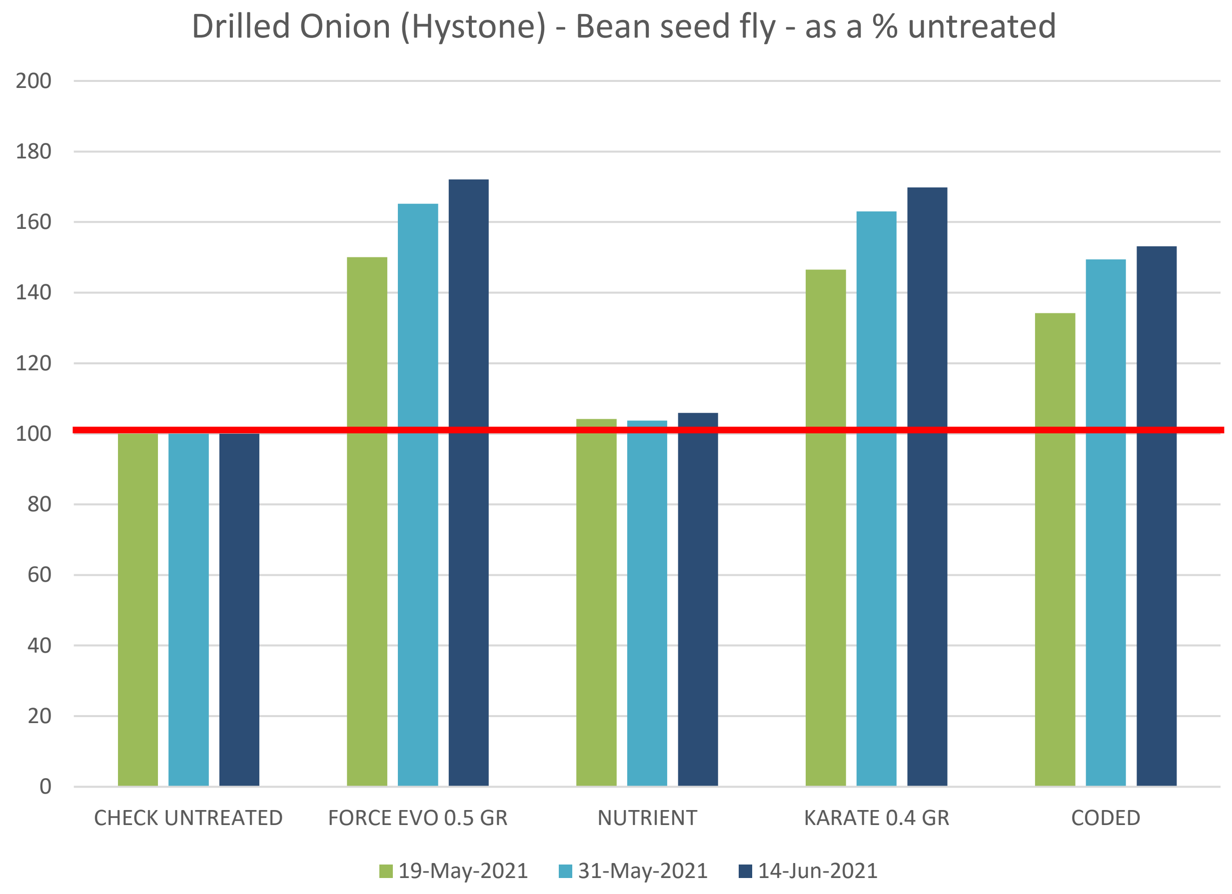


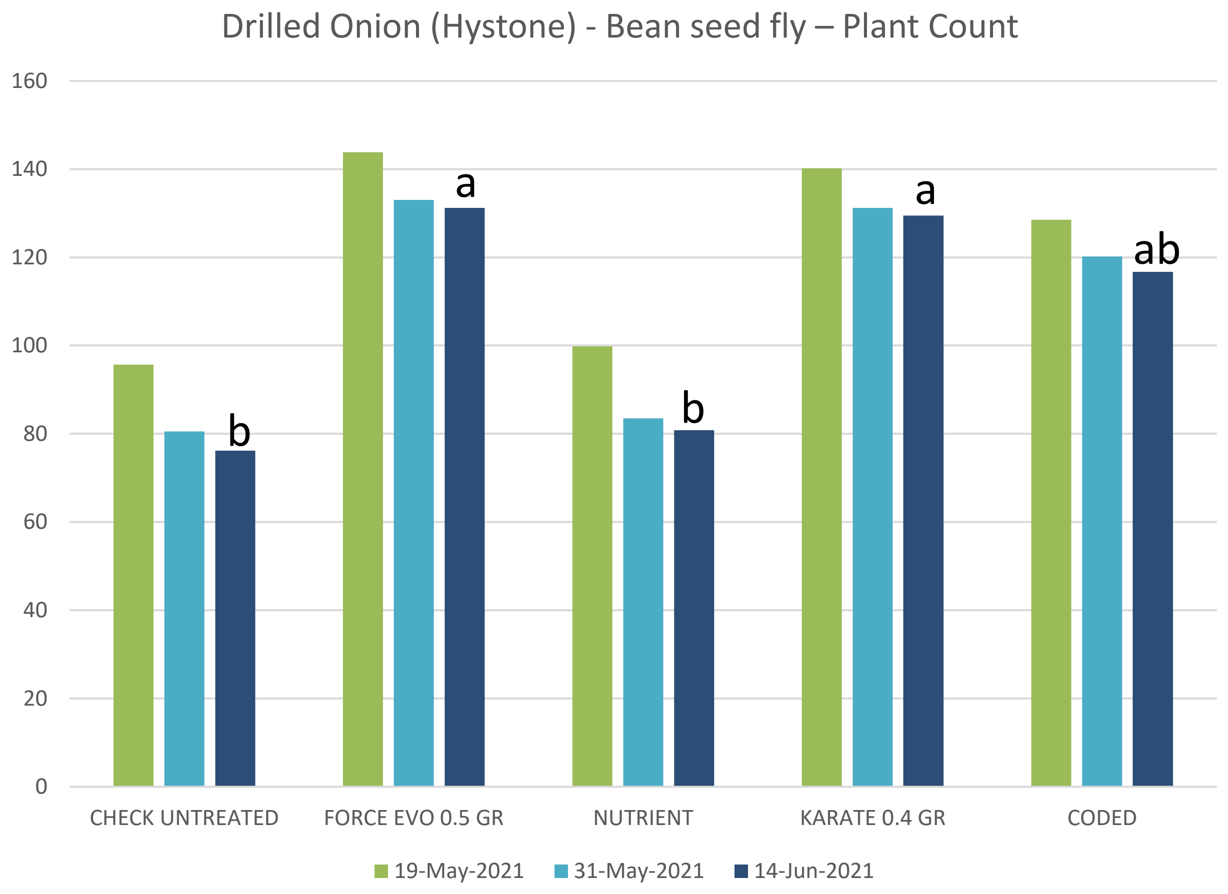
Very low BSF activity, some evidence at this site that treatments slowed emergence, end EM higher
Trial location - France (Nr Arras City)



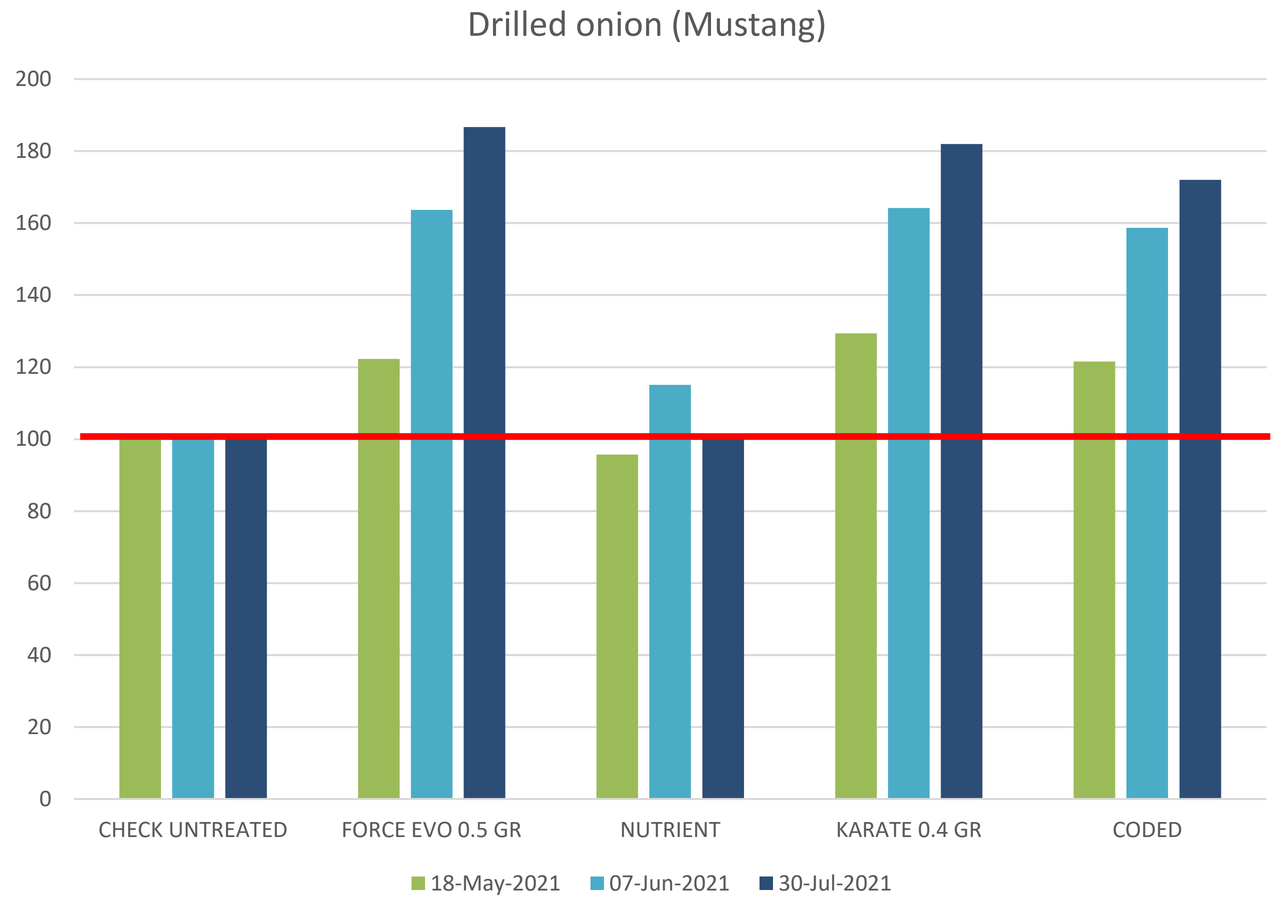


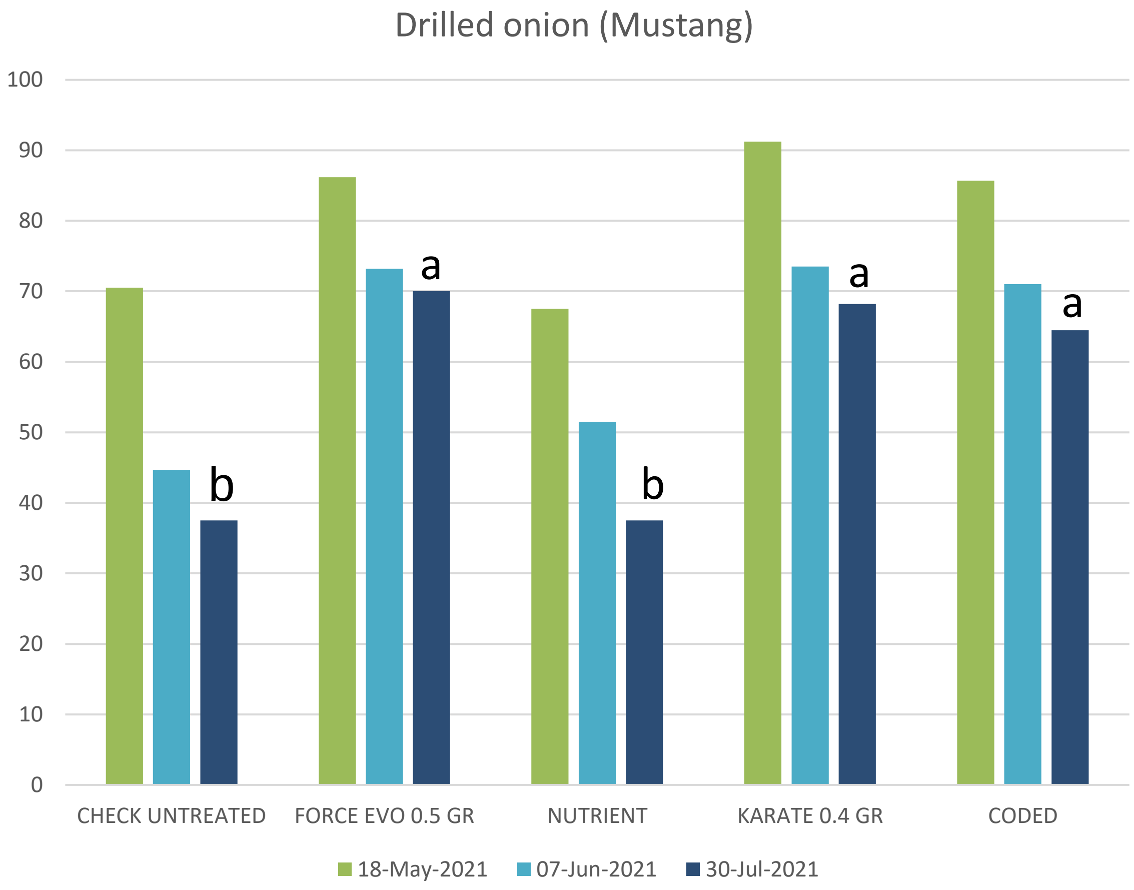
Low BSF – Good performance from FORCE EVO, KARATE similar to check
Trial location – Belgium (Nr Antwerp), Drilled 10/6
First activity seen 18/6 – 18% plant loss in untreated





High pressure and reduction in plant numbers, both FORCE and KARATE performing well
Trial location – Belgium (Nr Antwerp), drilled 27/4
First damage seen 19/5, 35% plant loss in untreated.
Growth suppression seen in untreated





High level of damage and plant losses – Both FORCE EVO and KARATE GR performing well
Trial location – France (Arras City). Drilled 21/4, fish meal applied post sowing

Summary

- Encouraging results in both alliums and legumes
- FORCE EVO showing good efficacy in all trials
- KARATE GR potentially useful (potentially lower efficacy in legumes?)
- Some evidence that granules may slow emergence (beans?), although even the nutrient had this effect → treatments did have higher counts than check at last assessment