Minor crops: Beans

Why grow faba beans?

- Suited to the Irish climate and soils
- High yielding under Irish conditions
- Excellent break crop
- Nitrogen fixation (reduces the fertiliser N demand of the following crop in rotation)
- Improve soil characteristics
- Valuable native protein source

Challenges growing faba beans?

- Perceived variability in yield
- Limited varietal development
- Lack of specific agronomy information
- Limited disease/pest/weed control options

Notes:

Beans – agronomy

- Variety Selection
- Time of Sowing
- Seed Rate
- Row Spacing
- Cultivation System

Crop Sowing

Crop Maintenance

- Crop Nutrition
- Weed Control
- Pest Control
- Disease Control

- Yield
- Grain/Seed Quality

Crop Performance

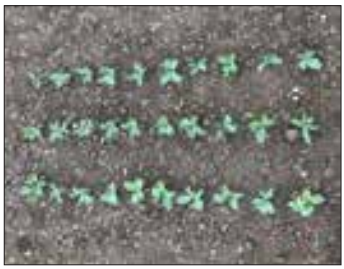
Notes:

Beans – breeding

RSF (VICCI) project

- Focussed on the evaluation of recurrent selection as a method to achieve rapid re-adaptation of faba bean to the Irish agro-climate
- Aims to develop Irish-adapted ideotype combining characteristics of high-yielding and improved ascochyta and/or botrytis resistance

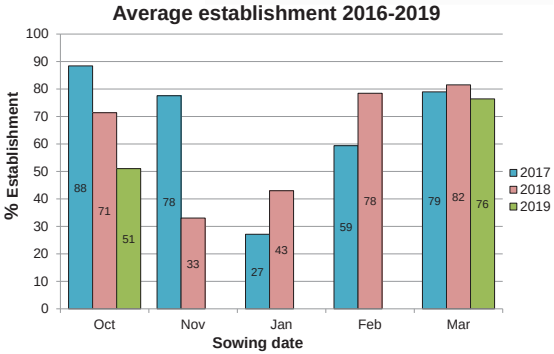
ERA-NET (ProFaba200) project



- Focussed on developing improved Vicia faba breeding practices and varieties to drive domestic protein production in the European Union
- Irish component: screening the varietal panel for Botrytis Fabae resistant varieties

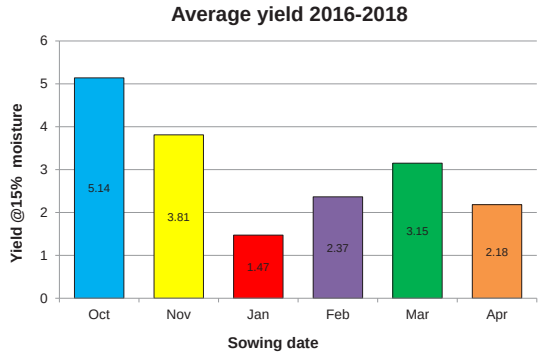
Notes:

Effect of sowing date on yield



Establishment

- Winter variety best established in October
- Spring variety established best in March



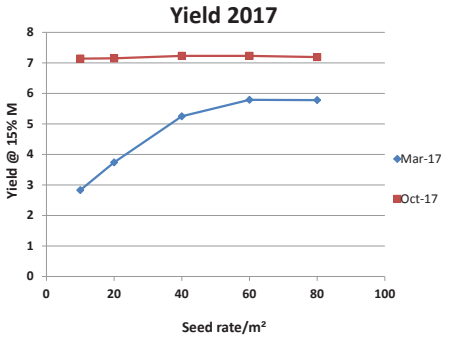
Yield

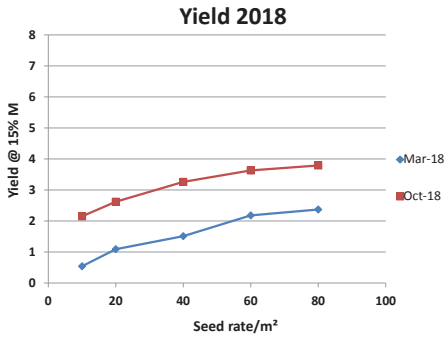
- October sowings gave highest yields for winter variety
- Early Spring sowings (January) attacked by crows
- March yielded best for Spring variety

IFA Grain Levy Supported Research

Notes:

Effect of seed rate on yield





- Higher seed rates have more competition for light, moisture etc.
- Lower seed rates seen to produce more pods – branching
- Lower seed rate yields can be competitive with higher seed rates

2017

- Good ground conditions
- Good establishment
- Desirable weather conditions

Average yield 6.7 t/ha

2018

- Poor ground conditions (snow)
- Good establishment

DROUGHT!

Average yield 2.5 t/ha

IFA Grain Levy Supported Research

Notes:

Sowing dates and seed rates

Summary

Lower seed rates:
- Problems with weed competition
- Lower pods on stems – not easy to harvest

Higher seed rates:
- Run the risk of lodging
- Less manageable at harvest

35-45 seeds/m²:
- Gives a manageable crop
- Average yields 5-6t/ha

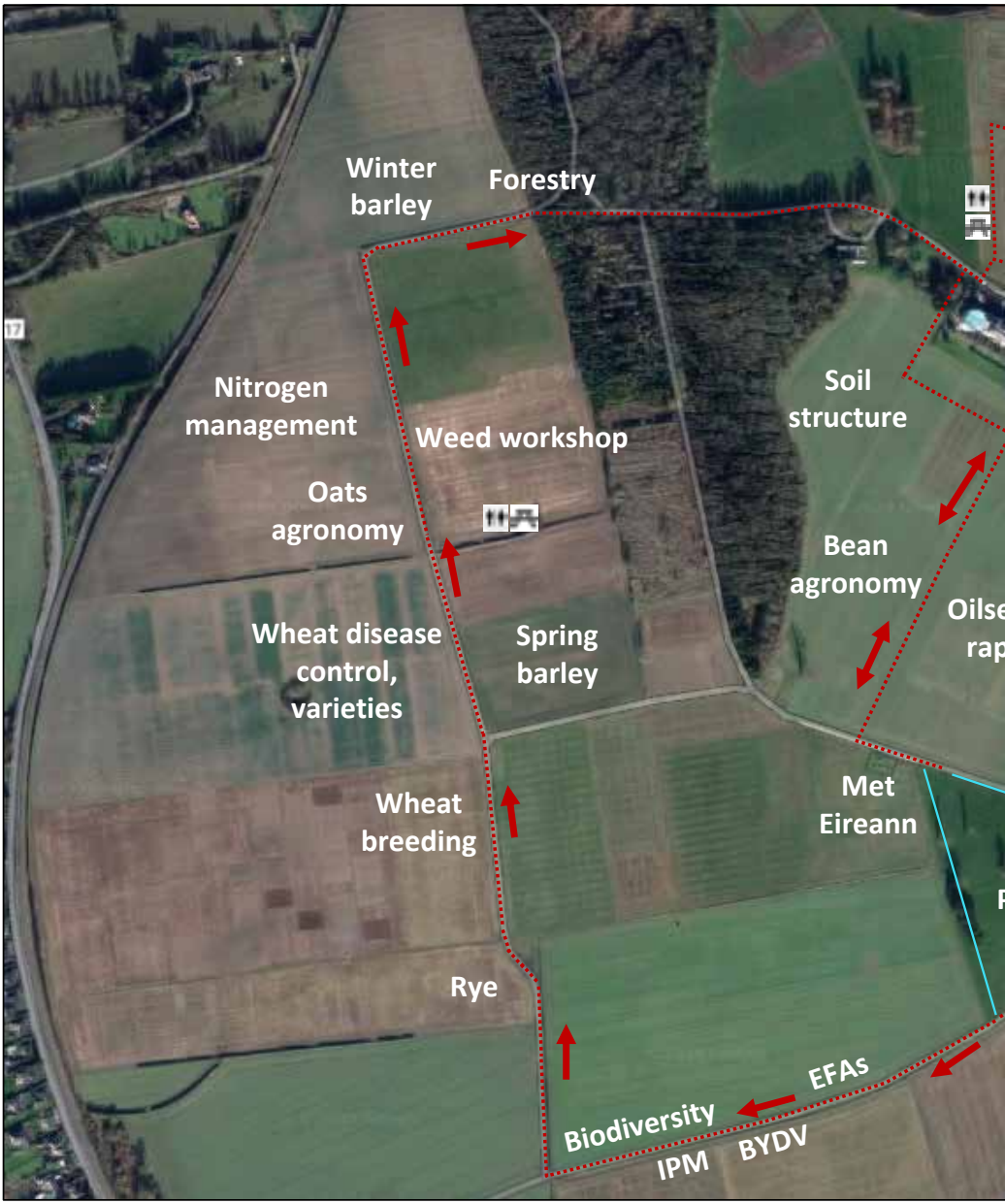
Watch out for crow damage on late winter and early spring sowings!!

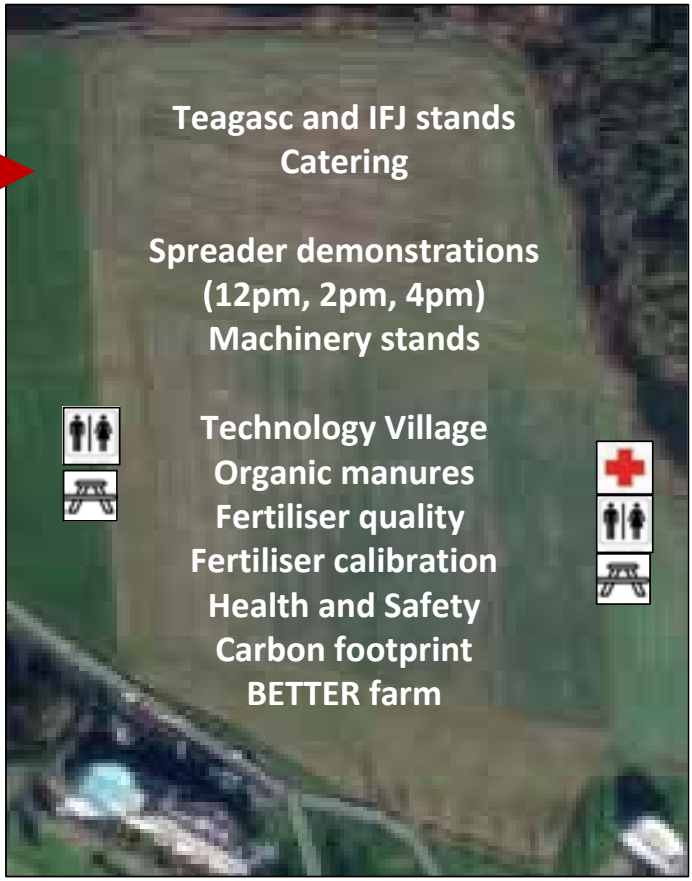
Take home message

- Avoid crow damage by sowing early winter (Oct) and later in spring (Feb/Mar). Good ground conditions and rolling also recommended
- Recommend to sow at 40 seeds/m². No difference in yield between 40, 60 and 80 seeds/m²
- Good establishment and management at early growth stages is crucial for final harvest yields

IFA Grain Levy Supported Research

Notes:


Winter barley
Forestry
Nitrogen management
Weed workshop
Soil structure
Oats agronomy
Bean agronomy
Oilse
rap
Wheat disease control, varieties
Spring barley
Met Eireann
Wheat breeding
Rye
EFAs
Biodiversity
IPM
BYDV



Event app: cropsopenday.ie

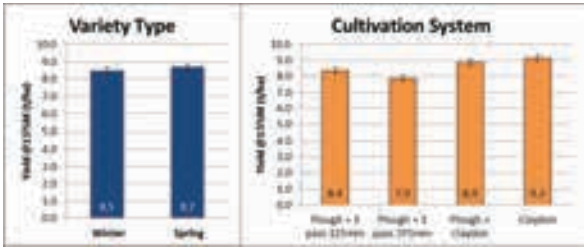
Beans – cultivations

OPTI-BC Project (RSF)
Impact of cultivation system and sowing date on establishment and yield

How?
- 4 years
- 2 sites
- 3 sowing dates

Oct, Feb, Mar
- 4 systems

Plough + 1 pass 125 mm
Plough + 1 pass 375 mm
Plough + strip drill
Strip drill into stubble

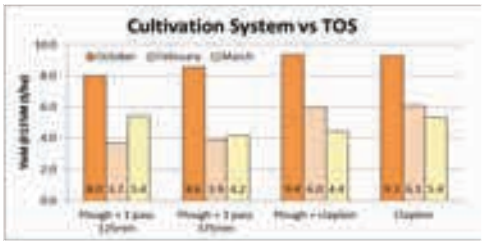


Winter sown

Spring & winter varieties

- **No differences between variety types in winter sown trials**
- **Strip drill yield higher in Oct and Feb but not in Mar**

Measurements?
- *Establishment*
- *Growth*
- *Yield*
- *Yield components*
- *Leaf area*
- *Disease assessments*



Spring Variety

Notes: