

AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY

The Irish Agriculture and Food Development Authority

Hemp (*Cannabis sativa*) BBioNets

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Hemp

- High Yields of Stem
- Low Fertiliser requirement
- No/Low Agrochemicals
- Improves Soil Structure
- Reduces weed pressure







Hemp – Caveats!

- Acid Soils- avoid
- Waterlogging – avoid
- Frost sensitive – similar to beet
- Fungal Disease – problem in wet years



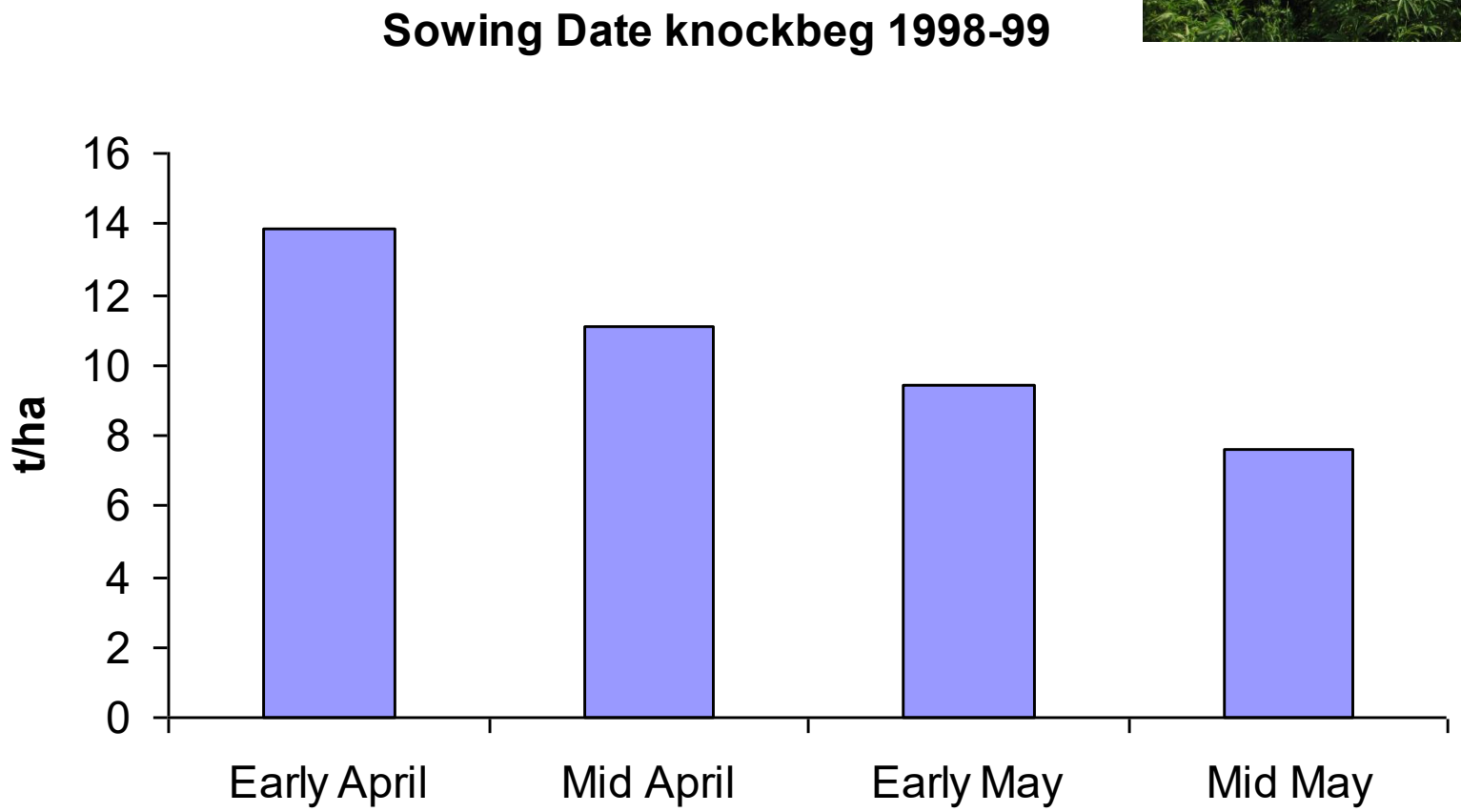






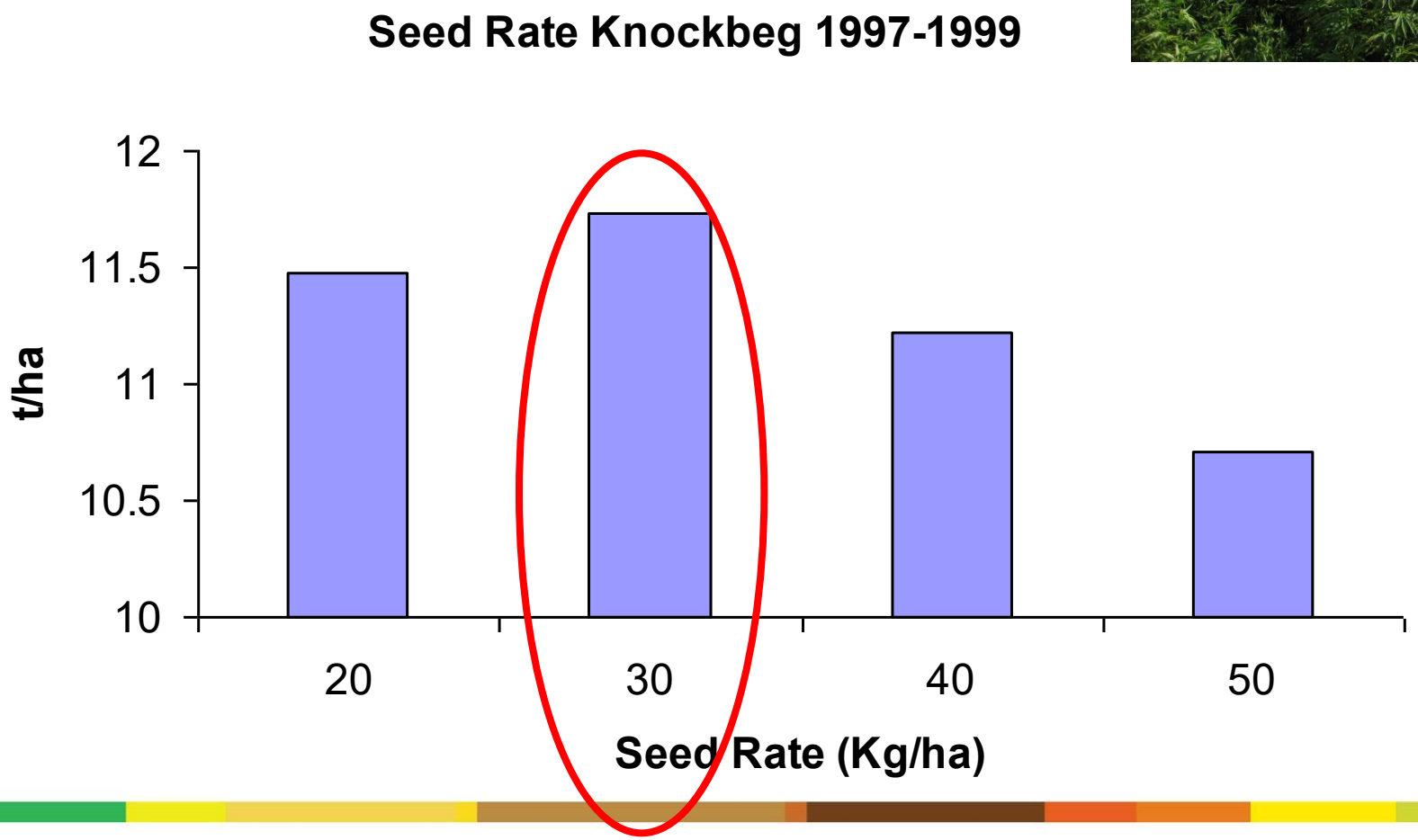
Sowing Date




Sowing Date knockbeg 1998-99
t/ha
16
14
12
10
8
6
4
2
0
Early April
Mid April
Early May
Mid May

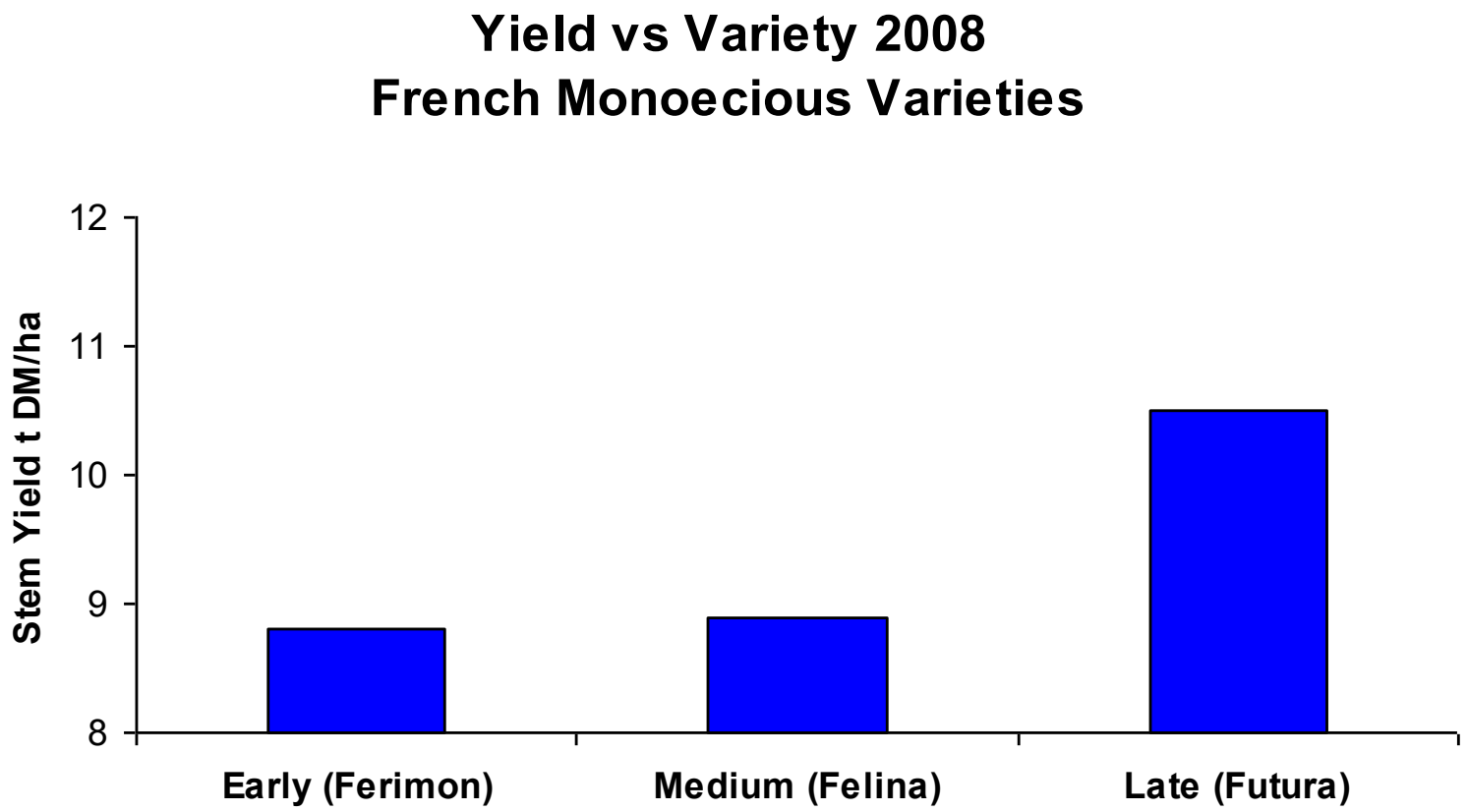
Seeding Rate-Biomass





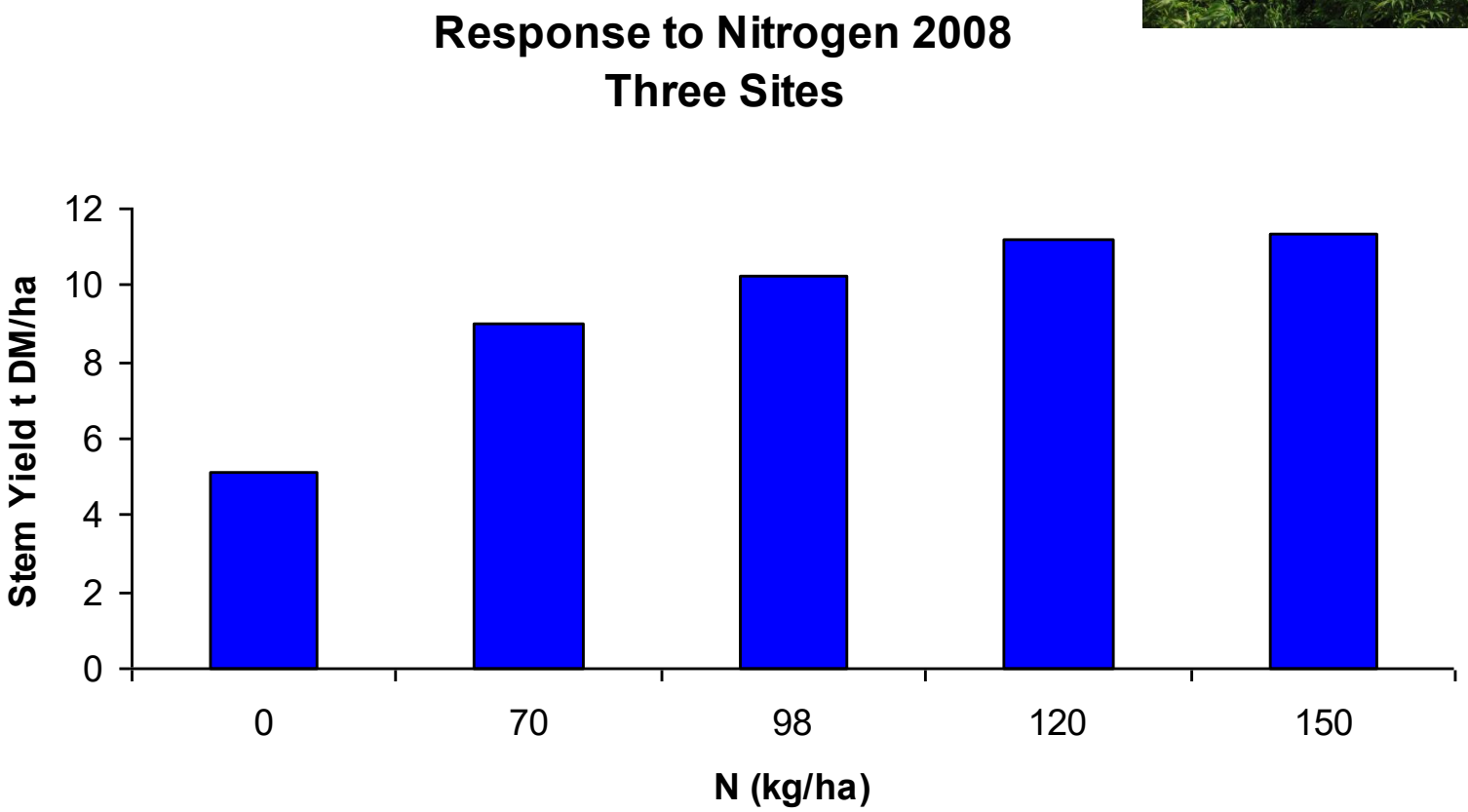
Varieties




Yield vs Variety 2008
French Monoecious Varieties
Stem Yield t DM/ha
12
11
10
9
8
Early (Ferimon)
Medium (Felina)
Late (Futura)

Nitrogen Fertilizer

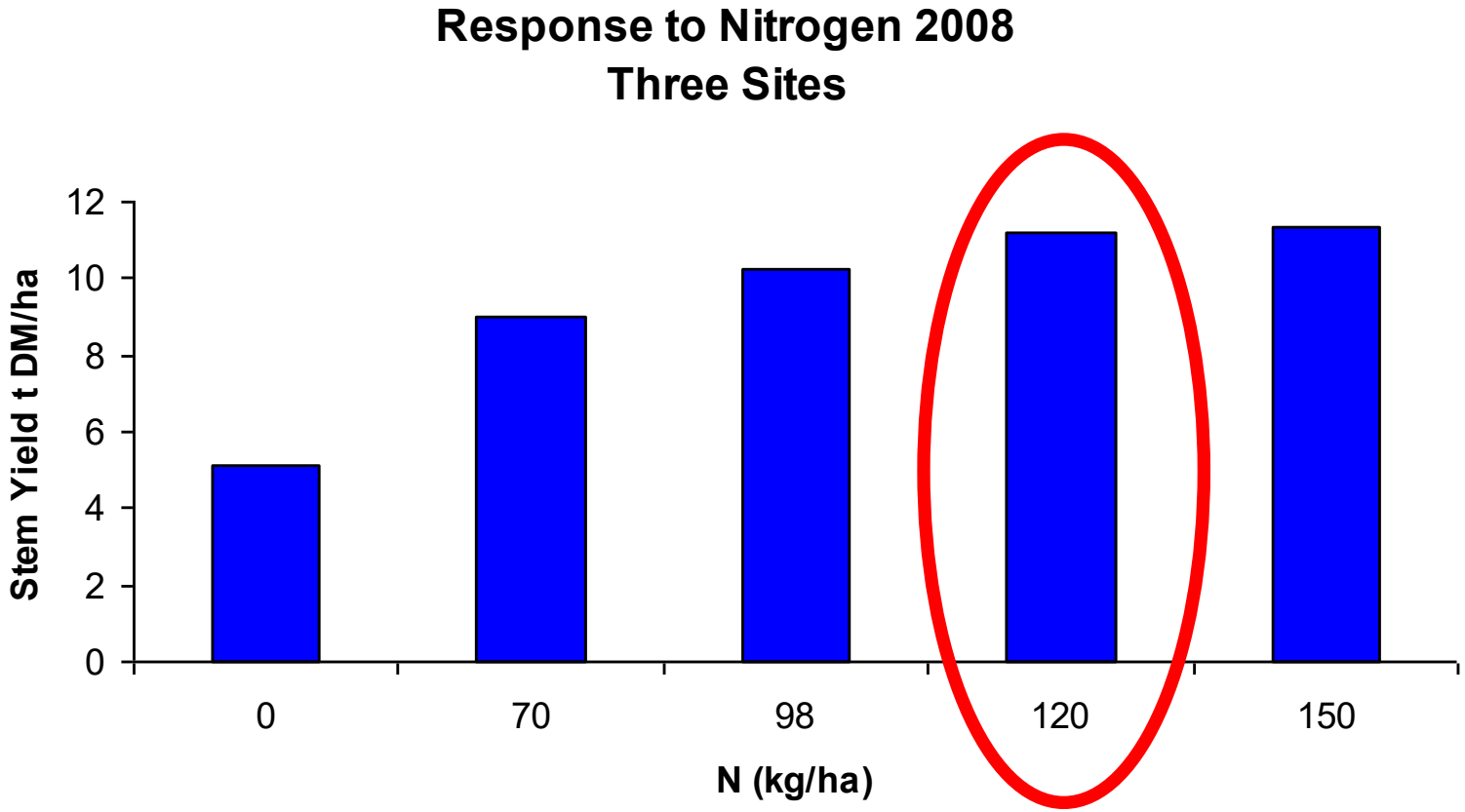






Nitrogen Fertilizer

Apply at sowing



Response to Potassium

- Typically no response to potassium fertilization irrespective of soil K level
- But…Hemp will absorb K even if it does not need it
- Fertilization advice
  - Index 1: apply 60 kg K/ha at sowing
  - Index 2, 3, 4: No Potassium needed at sowing; top up soil K in the Autumn if needed

Realistic Yields



- Hand-harvested yields typically between 10 and 13 tonnes DM/ha under optimal conditions, assuming early sowing
- However, high harvest losses can be expected (assume 20%)
- Realistic good yields of 8-10 tonnes DM/ha can be expected
- Lower yields can be expected if sowing is carried out late or if weed control or other problems are encountered

Harvest-Mowing

- **Finger bar mower-** works OK but work rate is slow but stalks do catch between the fingers and the knife stopping the mower
- **Disc Mower-** works quite well although material eventually builds up under the discs
- **Conditioner Mower-** DISASTER-AVOID!
- **Drum Mower-** works for a while before stalks get wrapped around the drums







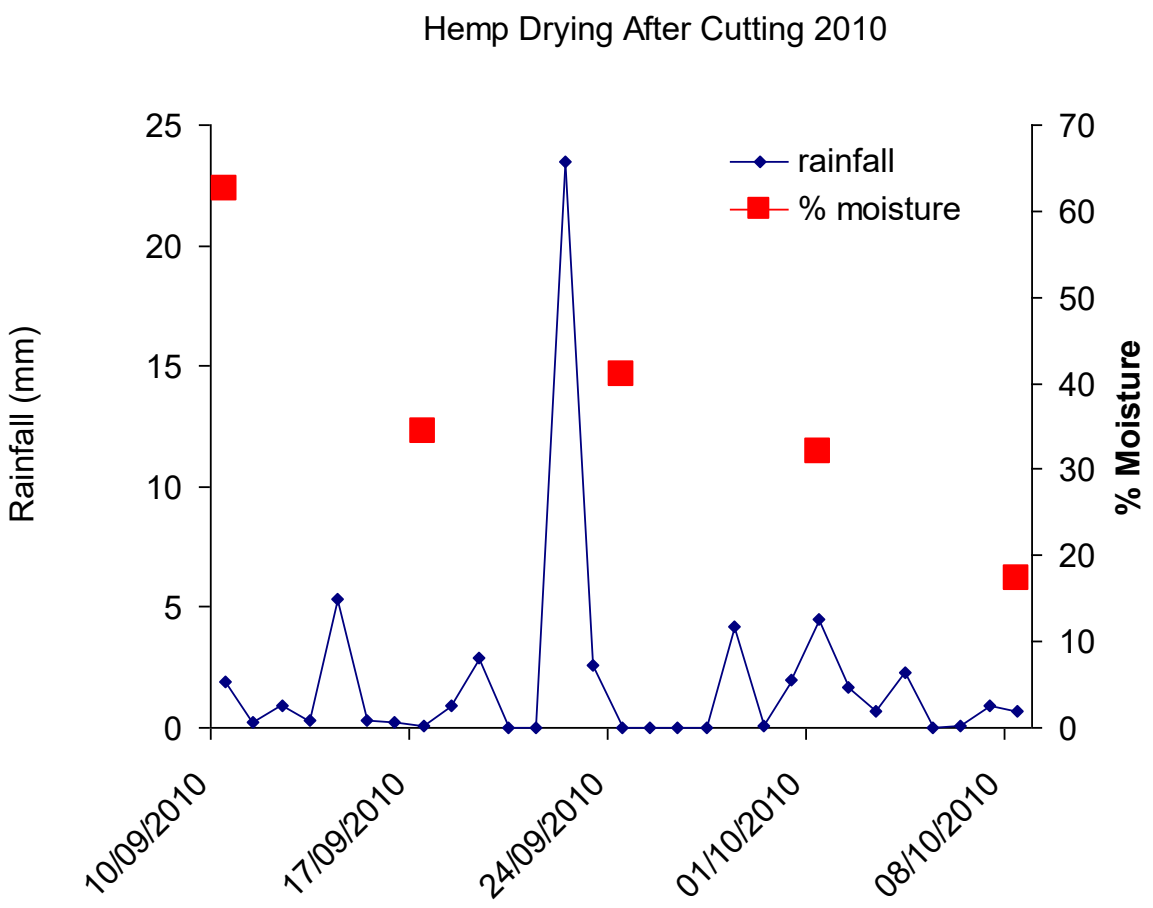






Hemp Drying After Cutting





Harvest-Mowing- Way to Go

- Makes baling much easier
- Crop dries faster







Windrowing









Baling Hemp

- Fairly easy if hemp stalks are cut into short lengths by a tiered mower
- Can be quite difficult if hemp is cut as whole stalks
- If baling whole stalks
  - Round balers tend to work better than square balers
  - Belt balers or variable chamber balers can work better than roller balers
  - Small differences in baler design can make a big difference in the baling operation







A Sustainable Opportunity for Irish Agriculture

- Industrial hemp: low-THC variety of Cannabis sativa
- Grows well in Irish maritime climate
- Multi-purpose crop - fibre, seed, oil, and more
- Low input requirements: minimal pesticides, moderate fertiliser
- Excellent break crop with weed suppression benefits

Economic and Environmental Benefits of Hemp Cultivation

- Diversification and new income streams for farmers
- Fast-growing, high-biomass crop
- Carbon sequestration: can be carbon neutral or negative
- Hemp-based products: health foods, textiles, construction, bioplastics
- Demand in automotive and construction sectors (e.g., Hemcrete)

Hemp in the Irish Bioeconomy – Products and Markets

- Bio-refining: multiple products from one crop (fibres, oils, protein, shiv)
- Growing demand for sustainable materials (insulation, construction, automotive)
- Health food market: hempseed oil, protein, supplements
- Animal feed - high-protein, digestible feed, positive research results
- Potential for Irish rural employment in processing and logistics

Challenges and Considerations for Ireland

- Regulatory barriers: current law restricts use of valuable hemp flower/CBD
- Lack of processing infrastructure (decorticators, bio-refineries)
- Need for farmer co-operatives and scale to ensure viability
- Market development: need for end-use markets and certification (e.g., building standards)
- Research needs - agronomy, seed varieties, product validation

Policy and Research Priorities for Hemp in Ireland

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Thank you

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