NIBIO
NORWEGIAN INSTITUTE OF BIOECONOMY RESEARCH

HERBICIDE RESISTANCE IN NORWEGIAN AGRICULTURE

(PART OF THE RESISTOPP PROJECT)

Björn Ringselle (bjorn.ringselle@nibio.no)

CONTENT

- Brief introduction to Norwegian agriculture
- Herbicide resistance in Norway
- RESISTOPP
  - Plans
  - Preliminary results (removed from presentation)

NIBIO
NORWEGIAN INSTITUTE OF
BIOECONOMY RESEARCH

NORWEGIAN AGRICULTURE

Brief description + herbicide resistance status

NORWEGIAN AGRICULTURE

- Cropland is 3.2% of land area (1 million hectares), out of which
  - 66% is temporary or permanent grassland
  - 33% cereals and oilseed crops

HERBICIDE RESISTANCE IN NORWAY

- 2012 survey: 253 out of 355 responding cereal farmers experienced problems with herbicide resistant weeds
- Resistance against ALS-inhibitors (sulphonylureas and/or triazolopyrimidin) in cereals
  - 2003: *Stellaria media*
  - 2006: *Tripleurospermum inodorum*, *Sonchus asper*, *Spergula arvensis* and *Galeopsis spp.*
  - 2009: *Polygonum persicaria*
- Resistance against PSII inhibitors
  - *Poa annua* and *Senecio vulgaris* in plant nurseries (no longer in use)
  - *Chenopodium album* in potato (not common use)

NIBIO
NORWEGIAN INSTITUTE OF
BIOECONOMY RESEARCH

RESISTOPP

Plans and preliminary results

RESISTOPP - PLANS

- Target Site or Non-Target Site (NTS) resistance?
  - Use molecular methods to determine which type of resistance is present
  - Can molecular methods be used for speeding up herbicide resistance identification?

- Do resistant breakers reduce resistance?
  - Follow-up on resistant weed populations from 2010's test
  - Test how ALS-resistant populations respond to common resistance breakers

- What type of IPM strategies can be recommended to farmers?

RESISTOPP – SO FAR + 2018

- Have tested *Sonchus asper* population for resistance to ALS-inhibitors and resistance breakers
- Currently testing *Tripleurospermum inodorum*
- *Stellaria media* to be tested
- Molecular methods to be tested

NIBIO
NORWEGIAN INSTITUTE OF
BIOECONOMY RESEARCH

PRELIMINARY RESULTS

The preliminary results have been removed to avoid potential conflicts during publication of results.

NIBIO

NORWEGIAN INSTITUTE OF BIOECONOMY RESEARCH

www.nibio.no

@nibio.no

@nibio_no