Effect of grazing previously abandoned grassland on performance in sheep

Grøva, L.\textsuperscript{1}, Steinshamn, H.\textsuperscript{1}, Brunberg, E.\textsuperscript{2} and Lande, U.S.\textsuperscript{1}

\textsuperscript{1}Norwegian Institute of Bioeconomy Research (NIBIO), Gunnars veg 6, 6630 Tingvoll, Norway
\textsuperscript{2}Norwegian Centre for Organic Agriculture (NORSØK), Gunnars veg 6, 6630 Tingvoll, Norway
Background

- Large areas of cultivated grasslands are abandoned
- Access to grassland is limited in sheep production in Norway
- Is abandoned grassland a potential pasture resource?
Maintenance of local grazing resources:
Grazing management, meat production and animal welfare
(2013-2016)

1. Lamb performance
2. Behavior
3. Pasture yield, herbage consumption and botanical composition
4. Economy
5. Social aspects
Maintenance of local grazing resources: Grazing management, meat production and animal welfare (2013-2016)

1. Lamb performance
2. Behavior
3. Pasture yield, herbage consumption and botanical composition
4. Economy
5. Social aspects
Background: Sheep farming in Norway

- Winter: Indoor housing + lambing
- Spring: Pasture close to farm
- Summer: Range mountain and forest pasture
- Autumn: Pasture close to farm, until slaughter or indoor housing
Background: Sheep farming in Norway

- Winter: Indoor housing + lambing
- **Spring**: Pasture close to farm
- Summer: Range mountain and forest pasture
- Autumn: Pasture close to farm, until slaughter or indoor housing
Is abandoned grassland a potential pasture resource?
Method

✓ One sheep flock of Norwegian white spæl

✓ 83(88) ewes(lambs) in 2014
✓ 77(106) ewes(lambs) in 2015

✓ Tingvoll municipality in Møre and Romsdal County (63º 1', 8º 8')
Method: Abandoned cultivated grassland:

- a 15.3 ha grassland that has been unmanaged for 12 years situated in Sunndal municipality (62° 51', 8° 26')
- before abandonment, the area was used as pasture for dairy cows
Method

The sheep flock was each year assigned into three treatments:

1) Control
   • common farm procedure with short spring grazing period close to the farm before summer grazing on range mountain and forest pasture

2) Spring extended
   • 4 weeks extended spring grazing period on abandoned cultivated grassland before summer grazing on range pasture

3) Whole season grazing on abandoned cultivated grassland
Method

1) Control
   - Mid May: range mountain and forest pastures
   - Mid June: range mountain and forest pastures
   - Mid September: range mountain and forest pastures

2) Spring extended
   - Mid May: abandoned grassland
   - Mid June: range mountain and forest pastures
   - Mid September: range mountain and forest pastures

3) Whole season
   - Mid May: abandoned grassland
   - Mid June: abandoned grassland
   - Mid September: abandoned grassland
Method: Recordings

✓ Weight: birth, spring, spring-extended and autumn
✓ Slaughter info: weight, carcass-characteristics and carcass value
✓ All lambs were treated with tick repellent at the beginning of the spring-extended grazing period.
✓ Ewes and lambs were monitored regularly for internal parasites.
Results

- **Weight gain**
  - Control: 0.229 g/day
  - Spring extended: 0.255 g/day
  - Whole summer: 0.206 g/day

- **Slaughter weight**
  - Control: 14.32 kg
  - Spring extended: 15.71 kg
  - Whole summer: 13.23 kg

- **Slaughter value**
  - Control: 616 NOK
  - Spring extended: 699 NOK
  - Whole summer: 548 NOK
Conclusion

The use of abandoned cultivated grassland for an extended spring grazing period improved weight gain, slaughter weight and carcass value of lambs.

Including such grassland in existing sheep farming has potential to improved performance and economy.
Additional info:

Grazing during summertime stimulated the grassland productivity up to 1.7 times the ungrazed control plots on the abandoned cultivated grassland.
Maintenance of local Grazing resources
Grazing management, meat production and animal welfare (2013-2016)

Thank you to:

Collaborators:

Funding bodies: