



Galega Forage Management

Objective: an informational fact sheet on growing the forage crop Galega

{ A perennial, winter hardy, tap rooted legume that has a high amount of protein in the aboveground parts of the plant (Phelan *et al.* 2015). }

- **Maturing up to 2 weeks earlier than alfalfa or red clover, galega is tolerant of moderately acidic soils to pH 4.5 and is excellent for honey production.**
- **A large project from across Europe noted that galega has very consistent yields but the maximum yield was below alfalfa, red clover, white clover and trefoil.**
- **Research in Lithuania showed that galega could replace soybean and other protein sources as an option for weight gain in cattle (Helgadóttir *et al.*, 2008).**

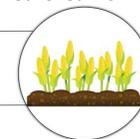
What is Galega?

Galega is a legume that was first developed in Estonia. It is also known as goat's rue, fodder galega or the scientific name of *Galega orientalis* Lam. This forage plant should not be confused with another type of galega (*G officinalis* L.) that grows as a weed in parts of Europe, New Zealand and South America, which is toxic to ruminant livestock.

Plants range from 60 cm to 150 cm with compound lilac flowers and light green leaves. Due to its growth habits, it is recommended for silage or hay as opposed to pasture. Roots are extensive and can reach 100 cm in depth and spread via underground stolons. Inoculant is needed for growth called *Rhizobium galegae* so it can fix its own nitrogen.



Source: Perevozskaya Sowing Station OJSC. (2015). Retrieved from <http://semena-52.ru/ru/17/139/140/>



Benefits in Growing Galega?

With less establishment years with little to no crop, the hay or silage yield potential is high and seed and fertilizer costs are reduced.

Galega has awesome potential to be a long lasting perennial in a crop rotation.

Galega does better than the other legumes on more acidic soils

Protein content in the feed can reduce feed additive costs.

Galega Management Practices

- According to the Thunder Bay Agricultural Research Station, find well drained moist soil that had spring cereals as the previous crop.
- Higher yields have been seen if an inoculant is planted with the seed, however there has been success with planting galega seeds without inoculant.
- Seeding rate should be above 25 to 30kg/ha to ensure establishment that last for more than 5 to 6 years. A decrease in seeding rate by 5kg/ha can reduce yield significantly.
- Avoid a companion crop as that can reduce establishment.
- Harvest for silage should be done when few flowers are seen blooming and with no harvest in the year of seeding.
- Galega could benefit from some nitrogen, sulphur and boron fertilization.

Growth Research

According to Agriculture Canada in a trial in 9 sites across its northern research stations in 1995 to 1997, each area except for Saskatoon has a similar establishment and yield to several varieties of alfalfa, red clover, trefoil, and alsike clover (Fairey *et al.*, 2000). Yields tend to be lower compared to lower tap-rooted alfalfa in areas with semi-arid climate.

Most research on galega is from Europe. A study by Moller *et al.* (1997) in Denmark showed that galega yielded better with only two cuts per year and 3 or 4 harvests and on soils with higher water content. A large project from across Europe noted that galega has very consistent yields but the maximum yield was below alfalfa, red clover, white clover and trefoil (Figure 2).

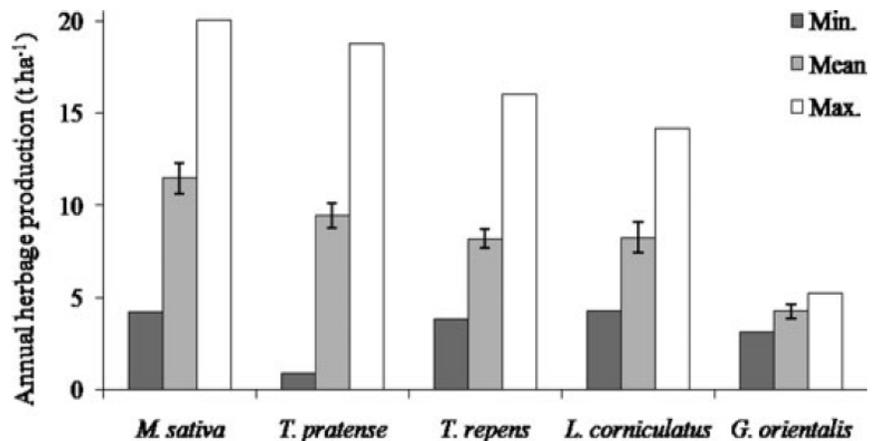
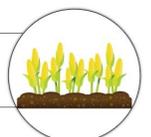


Figure 2 Herbage production from legume monocultures managed for silage production. Based on 330 trials from 53 sites in Northern European countries from 1977 to 1997. *M. sativa* = alfalfa, *T. pratense* = red clover, *T. repens* = white clover, *L. corniculatus* = trefoil and *G. orientalis* = galega (Halling *et al.*,



Feed Quality Research

Research in Lithuania showed that galega could replace soybean and other protein sources as an option for weight gain in cattle (Helgadóttir *et al.*, 2008). Feeding galega increase weight gain in steers and heifers in comparison with other forages.

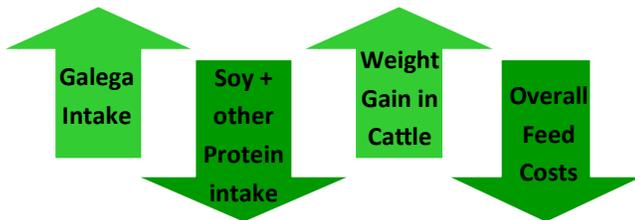


Figure 3 Established Galega at Aalbers Farm near Thunder Bay, Ontario

Future Research Needed

- Galega can be a forage used when the conditions are not suitable for other higher yielding forage types.
- More research is needed in herbicide and weed control options so as to improve establishment.
- As there is currently only one variety of Galega available called Gale, more research could be done into seed varieties that can yield better.

Views from the Field

Farmers in the Thunder Bay area have mixed feelings about growing this new crop. Galega is exciting. It has establishment up to 15 years and potential to be a steady high protein forage. But difficulties in establishment and weed control make it difficult to gauge the well being of the crop. Its pale green colour can also cause questions on nitrogen fertility. In the first year, the field looks incredibly weedy and the plants are a pale green in comparison to alfalfa. There is also no opportunity for a nurse crop in the first year due to the low competitiveness of the galega crop. Some growers have tried to cut the crop in the establishment year to decrease the weed seed bank.



Galega during establishment in Slate River, Ontario 2017

For More Information:

Thunder Bay Federation of Agriculture <http://tbfarminfo.org/tips-for-galega-cultivation/>

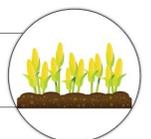
Agriculture Canada

<http://publications.gc.ca/collections/Collection/A47-7-3-1E.pdf>



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Galega grown in the Thunder Bay Region, Photo sourced from Thunder Bay Federation of Agriculture.

