

Buckwheat – *Fagopyrum esculentum*

Buckwheat is a short season annual crop. It is a popular cover crop – due to its quick establishment, ability to cycle nutrients, and in attracting beneficial insects.

Compared to other cover crop species, Buckwheat grows very quickly – reaching maturity in 10-12 weeks. This quick establishment makes it effective in outcompeting and suppressing weeds. Buckwheat can be fit into a short fallow period between crops. Buckwheat scavenges nutrients effectively – particularly Phosphorous and Calcium. These nutrients are then made available for the following crop.



rant to waterlogging rant to frost s poorly in soils prone to crusting of grow in compacted soils become a weed in wheat fields if I turity
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Phosphorous and Calcium scavenger • Risk of lodging and shattering increases as the plant matures

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- Improves soil health
- Improves aggregate stability
- Effective in suppressing weeds
- Attracts beneficial insects and pollinators
- Suppresses root pathogens
- Livestock may experience skin photosensitivity
- High concentrations of tannins

What can it be used for?

- **Cover Crop:** Buckwheat can be used as part of a cover crop mixture, or as a stand-alone cover crop. It utilizes the shortest window of opportunity of any cover crop. It establishes quickly and forms a dense canopy inhibiting weed growth and controlling erosion. Its ability to cycles nutrients (P and Ca) makes it an effective "catch crop". Plant residue breaks down rapidly.
- **Grazing:** Buckwheat can be grazed, however due to increased *fagopyrins,* especially in green plant material, the buckwheat component should be kept to 30% or less of the forage. Grazing should be considered during the vegetative stage of the plant's growth, as it was found that milk yields decrease when buckwheat is fed at flowering stage.

Metabolic disturbances in animals on cultivated pastures:

- **Skin irritation:** Fagopyrins present in buckwheat causes skin photosensitivity, itching, allergic reactions and eruptions on the skin. In severe cases death can also be brought about after ingestion.
- Tannins:Voluntary feed intake and nutrient digestibility is negatively
affected by high tannin concentrations in feed. It can also
cause toxicity and sometimes even death.





Establishment

- Climate: Buckwheat is frost sensitive and should only be planted after the season's last frosts. Buckwheat prefers day temperatures of 18-30°C and night temperatures of 5-10°C.
- Moisture: Buckwheat is sensitive to water stress and does not tolerate waterlogging.
- Soil: Buckwheat is suited to a range of soil textures and fertility levels. It yields higher grain yields on infertile soils, than other grain crops if the climatic conditions are optimal. Buckwheat seems to be prone to lodging on very fertile soils. Once this happens, the plant will not return to an upright position. It is best suited to well drained, light-medium textured soils (sandy loams, loams, silt loams). It does not tolerate heavy and wet soils, as well as soils with high levels of limestone.

	Nitrogen (N)	Phosphorous (P)	Potassium (K)
Removal Rates (kg/ha) for 1 ton of grain	7.5-20	1-4.4	5.4-8.3
Recommended application rates depending on soil fertility: High soil fertility (kg/ha)	34	7-10	14-28
Recommended application rates depending on soil fertility: Low soil fertility (kg/ha)	34	30-40	56-84

Fertilization: A soil analysis before establishment is essential

Methods:Buckwheat can be drilled into the soil to a depth of 2.5-5cm.Planting deeper than 5cm could result in a poor stand.Although drilling is recommended, it can also be planted by





broadcasting the seed. Buckwheat should be planted into a firm and weed free seedbed to ensure optimal establishment.

- Seeding rates: 40-120 kg / ha depending on planting method, climatic conditions and area potential, and moisture (rainfall, irrigation / dryland)
- Planting time: Buckwheat should only be planted when there is little to no risk of frost. Buckwheat can be planted from September-March.

Management

Utilisation:Buckwheat can be utilized in a number of ways. Depending
on the use and objectives, crop termination times will differ.
As a cover crop, Buckwheat will typically be terminated at
flowering time – to avoid the crop going to seed.



From Producer to the World



Resources

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