



# Buckwheat Production: Planting

## Introduction

Buckwheat (*Fagopyrum esculentum* [Moench](#)) is a specialty grain that was introduced in the Hudson Valley by early Dutch settlers, and has a long history in New York State. It has a reliable contract market and serves some useful niches in modern rotations:

- On soil that dries slowly in the spring.
- In short-season locations.
- To meet rotation requirements in organic field crop production.
- As a catch crop, after an early planting has failed or been bypassed.
- On land being brought back into production.
- To clean up quackgrass or mellow the soil.
- By part-time farmers.

Buckwheat is notable for being a short-season crop, requiring only 10 to 12 weeks to mature, and for requiring only moderate soil fertility. Buckwheat also tolerates soil pH as low as 4.8. However, it does not tolerate stressful conditions or poorly prepared soil - its fine roots penetrate the soil quickly, but do not tolerate compaction, flooding or drought.

## Contract

Most buckwheat is raised on contract, and the contractor will specify the seed. There is virtually no spot market for buckwheat, so it is a good idea to sign a contract or have an alternative marketing plan before sowing buckwheat.

## Site selection

Buckwheat will perform best on well-managed soil with moderate fertility. It cannot be grown on low-quality soil; you will have poor yields if you do so. Buckwheat is well-suited to higher elevations in the Southern Tier in New York State and in the fringes of the Adirondacks. Valley bottoms where fog collects in August may produce poor yields because of challenges with pollination when flowers are wet. These valley bottoms may also be so fertile that they produce unmanageably viny plants.

## Site preparation

Since the buckwheat plant has a fine root system, preparing a good seedbed is time well invested (Figure 1). It is a good idea to prepare the ground several weeks in advance, when the soil is easier to work and there is more moisture available for crop growth.

The seed will rot if water collects around it, so seedbed preparation should aim to create drainage around the seed. If the seeds are submerged in water for as little as two hours, half the stand can be lost. Overworked or overly wet soil drains poorly and does not allow roots to grow well. Disking can create an undesirable compacted area just below the seed.



*Figure 1: Rapid establishment is key to suppressing weeds and getting a good yield. Thoughtful soil preparation is the best way.*

No-till seeding works on fields that have been no-tilled successfully for several years, but first-year no-till consistently fails because the roots cannot penetrate.

When buckwheat is sown in new fields, old pastures, or other land that has not been cultivated for several years, it is best to allow the vegetation to break down by plowing several weeks before sowing. The soil should then be harrowed periodically to improve its physical condition, retain moisture, and destroy weeds.

## Sowing date and seeding rate

It is important to sow buckwheat early enough to avoid the first frost in September, and late enough to avoid the heat of July. Furthermore, planting at the right time will ensure that the shorter days of August help the seeds mature for harvesting (Figure 2). In much of New York State, July 4 is a good sowing date. At elevations over 1500 feet, sowing can be a week earlier. Where large lakes (e.g. Ontario, Seneca) delay the first frost, sowing can be as late as mid-July. The recommended seeding rate is 50 lbs per acre using a grain drill at 7–8 inches row spacing. Broadcasting tends to be uneven so 70 lbs per acre is recommended when broadcasting to reduce the size of gaps.

## Fertilizer

Buckwheat has modest fertility needs, and many growers rely only on residual fertility. Applying excess fertilizer favors weeds and produces viner plants; it is not recommended.

Table 1: Recommended pre-plant fertilizer application (lbs per acre). The rates assume some residual fertility from prior crop residue.

| Neutral (pH >6)                        | N     | P <sub>2</sub> O <sub>5</sub> | K <sub>2</sub> O |
|--|-------|-------------------------------|------------------|
| High fertility (vegetable rotation)    | 0     | 0–15                          | 0                |
| Medium fertility (small grain)         | 0–15  | 25                            | 0–20             |
| Low fertility (idle land, old pasture) | 20–30 | 35                            | 20–25            |
| Acid (pH <6)                           | N     | P <sub>2</sub> O <sub>5</sub> | K <sub>2</sub> O |
| High fertility (vegetable rotation)    | 0     | 20                            | 0                |
| Medium fertility (small grain)         | 0–20  | 30                            | 0–20             |
| Low fertility (idle land, old pasture) | 30–35 | 40                            | 30–35            |



Figure 2: Buckwheat in full bloom is a rewarding sight for buckwheat growers.

## Pest management

A well-sown buckwheat stand will out-compete weeds. Buckwheat is also seldom damaged by insects or diseases. For this reason, buckwheat has no registered pesticides or herbicides. However, buckwheat that is planted earlier than the recommended date is at risk because aphids may attack and stunt the plants in mid-June. Also, growers should know that deer and turkeys are fond of buckwheat and may cause damage in small fields where wildlife populations are high.

## In Summary

Buckwheat is a good cover crop or catch crop because of its short growing season, ability to control weeds, and low maintenance. It grows best in well-maintained, moderately fertile soil. Buckwheat can be planted relatively late in the growing season, but proper soil preparation is important. Water should not be allowed to collect around the seed. Additionally, fields that have not been recently tilled should be plowed and periodically harrowed before planting buckwheat. Buckwheat also requires minimal fertilizer applications.

## Additional Resources

- "Buckwheat production guide". <http://www.nysaes.cornell.edu/hort/faculty/bjorkman/buck/guide/>
- Cornell Field Crops and Soils Handbook.
- Björkman, T. 2003. Commercial Buckwheat Production. The Birkett Mills.

## Disclaimer

This fact sheet reflects the current (and past) authors' best effort to interpret a complex body of scientific research, and to translate this into practical management options. Following the guidance provided in this fact sheet does not assure compliance with any applicable law, rule, regulation or standard, or the achievement of particular discharge levels from agricultural land.

For more information



Cornell University  
Cooperative Extension

Buckwheat extension  
<http://www.nysaes.cornell.edu/hort/buckwheat>

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