

# Can Faba Bean be Transplanted?

Fatemeh Etemadi, Masoud Hashemi, Omid Reza Zandvakili

## Why Transplant?

At first glance it seems kind of odd to transplant a grain legume! However, in a 2-year study we found several advantages for transplanting faba bean. Unlike many grain legumes such as peas, lentils, and soybeans, faba bean is a cool season crop. It can be seeded as early as mid-March if the soil is workable. However, many years the soil in March is often wet or still covered with snow, which delays the direct seeding of faba bean. Early planting of faba bean comes with some potential benefits:

- It provides the opportunity of double cropping in a relatively short growing season region such as New England.
- Flowering of faba bean will not be coincided with high temperatures in summer which increases the incident of chocolate spot disease (Figure 2).



Figure 1. Faba bean should be transplanted to the main field when it is 4-5 inches tall.

Even in years that soil conditions allow direct seeding, faba bean seed germination and establishment of young seedlings may take 4-6 weeks due to low soil temperature. In New England, transplanting faba bean in early April provides the opportunity for:

- early planting without being limited by soil conditions.
- use of drip irrigation and/or fertigation to minimize the negative impact from prolonged drought incidents.
- higher biomass and pod yield.
- earlier harvesting for more successful double cropping.
- minimizing the weed pressure when plastic or other mulch (eg. wood chips) are used as beds (Figure 3).
- avoiding planter issues related to planting mixed seeds with significant variation in size.

## Direct Seeding vs. Transplanting

In order to work around the potential downsides of direct seeding the feasibility of transplanting faba bean was studied from 2014 and 2015. Some results obtained in this study indicated:

- Seedlings should be transplanted after being grown in greenhouse for 10-12 days.
- Seedlings should be only 4-5 inches prior to transplanting. Use of bigger size seedlings results in slender main stems that is prone to lodging (Figure 1).
- The best time for transplanting into the main field is early April.
- In the main field, seedlings should be spaced 6-9 inches apart. Wider spaces results in lower final population thus reduces total harvestable yield.
- Wider spaces also allow the appearance of several lateral branches which generally are less productive than the main stems.



Figure 2. Faba bean transplanted in early April avoids chocolate bacteria.

In our 2 year study we found that on average, transplanting resulted in 11% higher fresh pod and 21% more fresh seeds yield compared with direct seeding (Table 1) in addition to the abovementioned benefits.

Table 1. Faba bean yield average over two years (2014 and 2015)		
Planting method	Pod fresh yield (lb ac <sup>-1</sup> )	Seed fresh yield (lb ac <sup>-1</sup> )
Direct	6094	1969
Transplanting	6792	2484