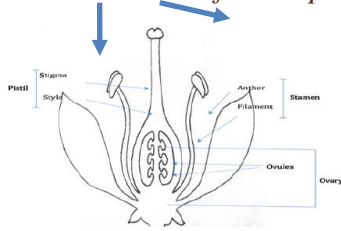


THE BASICS OF SAVING SEEDS

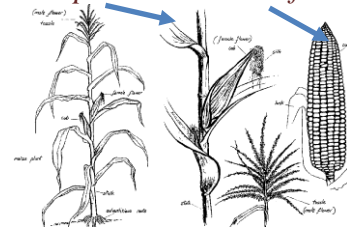
An SJI Resource
By Dr. Erik Landry

1. Seeds arise from the union of pollen (male) and egg (female).

Flower with both male and female parts.

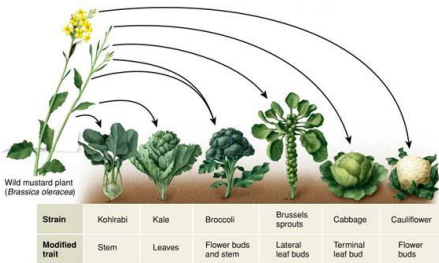


Corn (maize) has separate male and female flowers.



2. Outcrossing should be avoided or promoted, depending...

*All Brassicas intercross.
Separate different varieties.*



3. Save seed from the best plants

- Plant vigor and local adaptation
- Yield of harvest
- Visual appearance
- Weed competition
- Storability
- Cooking quality and taste
- Disease and insect resistance

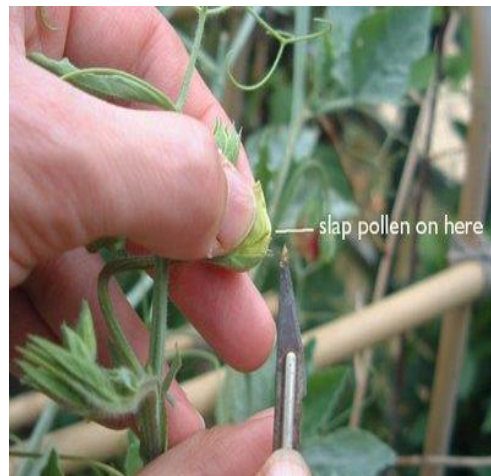
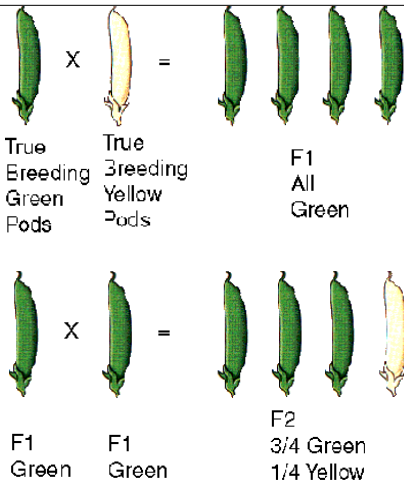
4. Save the best seeds

Dry seeds can be winnowed



Peas rarely intercross

You can also make crosses by removing the anthers (pollen) early and applying another plant's pollen the next day.



		pollen ♂	
		B	b
pistil ♀	B	BB	Bb
	b	Bb	bb

Seeds from fruits can be extracted in water... The ones that sink are the best!



Asparagus seed production in a subtropical environment

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General

Asparagus (*Asparagus officinalis* L.) can be grown in a wide range of soils and under various climatic conditions, but it thrives in fertile, well-drained soils. Roots can be at least six feet deep, but they will not tolerate saturated soil conditions. Plants can tolerate temperatures from -40° C to 46° C, but specific varieties are adapted to cold, warm, or tropical environments. Jaleo (Vilmorin) is an all-male hybrid adapted to tropical (low-chill) environments. UC157 (Druk seed) is also an all-male hybrid adapted to warm/dry, irrigated regions of California, USA. Merry Washington (Druk seed) is an open pollinated variety with a broad range of adaptation.

Asparagus is dioecious, meaning that some plants produce seed and others do not. Seed producing female plants are rare with all-male hybrid fields. Open pollinated seed is 50% male and 50% female (see Figure 1). Farmers in Samdrup Jongkhar, Bhutan interested in growing and saving seed from asparagus would be wise to sow Merry Washington and UC157 and/or Jaleo (if available), harvesting seed from the best female plants to produce new plantings. Weak plants should be removed.



Figure 1. Male and female asparagus flowers.

Seed to seed

While crowns are available from Wengkhhar, the spread of diseases is of concern, so these crowns should be avoided. Develop your own crowns from seed. One ounce of asparagus seed contains 500 to 700 seeds. Soak seeds in 32° C water for 3-4 days and then sow (beginning of monsoon) into a nursery bed similar to paddy. Once crowns are well-developed (about 6 months), transplant (20 cm spacing) into trenches 0.5 m apart. Plant to a depth of 15 cm (see Figure 2.) with ample amounts of mature compost. Shallow planting promotes thin spears. Keep dug crowns cool (about 4° C) and dry. High temperature and humidity will cause rapid decay and will reduce transplanting success.

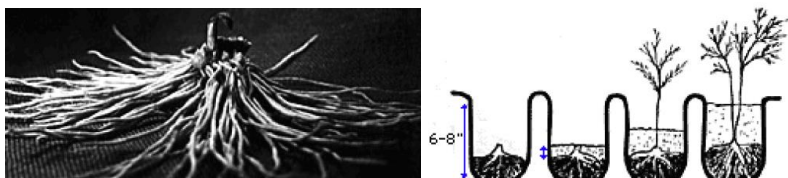


Figure 2. Well-developed crowns (about 6 months) and recommended planting depth.

Spears of asparagus are typically harvested after two years. Withhold water during the dry season to promote dormancy and to improve spear quality. Burn yellow ferns to reduce disease. Plants with early and vigorous spear emergence should not be harvested and allowed to go directly to fern and seed. Pollination is critical for seed set, so plant other flowers near the asparagus plantation to promote pollinating insects. Once the berries are bright red (see Figure 3.), harvest and macerate to remove the seeds. Soaking in water is effective for separating the pulp from seed. Once the seeds are washed and dried store at low temperature and humidity.



Figure 3. Bright red, mature asparagus fruit and black seed.