



place usually over several weeks. Harvesting is done using secateurs cutting 20 - 30 cm below the seed head. The extra stem will help to ripen the seed. Lay seed heads to dry on drying frames in a well aired space and turn the stems every few days. An indication of seed maturity can be observed by seeds turning black. (Seed photos) **Threshing and cleaning\*\*:** Once the seed is dry, threshing can be done by hand rubbing the seed heads gently and sieving out the stemmy material.

Make sure to **label clearly** the cleaned seeds, storing the seeds in paper bags.

**Storage:** Seeds are mostly dry matter of up to around 85 %. It is therefore important that the storage of seeds is dry and cool to keep the seed from drawing in moisture. Onion seeds will only store for a couple of years so regular seed production is required to have viable seeds. Onion seed produced from positive selection will produce **elite seeds** and are used for further elite seed or standard seed production.

**\*Cage system.** It is possible to grow several onion seed crops in close proximity by erecting a cage over the crop. Fine environ mesh is used for the cage and bumble bee hives or blow flies are placed in the cage and are used to pollinate the crop. It is important to ensure no other flying insects can get in, checking that the netting is secure all round, as this will otherwise cause cross pollination of pure line varieties.

There are approximately 400 seeds to the gram. An onion seed crop can yield between 60 - 80 grams of seed pr sq meter depending on variety.

For more in detail information see also: The Organic Seed Grower by John Navazio. ISBN 978-1-933392-77-6

### **\*Seed cooperative**

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To support the seed cooperative become a share owning member. Minimum shares are 100 at £ 1 pr share.

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## Growing onions for seed



### **Using open pollinated varieties**

**Onions :** *Allium cepa*. The onion has its origin in the eastern countries of Afghanistan and Pakistan where wild species of onions still can be found. One of the ways it likely was brought to the middle east and Europe was via the silk route. Already in the Egyptian period was the onion well known and revered and the romans used it widely. By the middle ages the onion was cultivated in much of Europe and was used both



as a food crop and for medicinal purposes. Today the onion is one of the most important vegetable crops on the market.

**Flower biology:** Onions are perfect flower plants which carry stigmas and pollen in the same flower. The flowers are whitish to light purplish in colour depending on the varieties and the flowering will produce clusters of 6 triangular seeds in-cased within the florets similar to the leek. Onions are protandrous which means the pollen will be mature before the stigmas are receptive. This is the onions way to prevent self pollination.

**Pollination:** Onions are cross and insect pollinated and will cross with other onion varieties including shallots. They won't cross with leeks however. They are biennial's, flowering in their second year.



**Isolation distance.** Ideally a distance of up to 1600 meters should be observed between two different onion crops in flower. Especially when

the bulbs are of different colours and shapes. However in more sheltered areas with hedges, trees and other barriers, a shorter distance of 800 meters can be used. Using cage systems\* allows for more than one crop to be grown in close proximity.

**Minimum number of plants.** It is important to maintain the genetic diversity of the many different traits of onions. Onions don't tolerate inbreeding very well so a population of ideally 80 - 100 plants for home grown situations and 150 plus plants for professional growing is recommended. However, the more plants the better.

**Crop characteristics:** It is important to know the characteristics of the onion variety you intend to save seed from, such as colour, width of neck, thickness of skin, bulbous shape, early, mid early or late maturing. These characteristics need to be considered when selecting. Remember you cannot save seed successfully from F1 hybrids to give you 'true to type' onions.

**Agronomy.** (Year 1) Good seed depend on good crop production and good crop production depends on suitable soil and soil preparation. Raise the onion crop as you would any production crop in the first year and importantly, pull out any bolting and off colour plants and keep the crop weed free.

**Positive selection;** (year 1) At harvest time lift and dry the crop making a first selection of the true to type plants which are specific to your variety before they get stored. Typically select up to 10% of the crop for seed then keep your

selected onions separate and well labelled. The bulk of the crop or 90% is for fresh market or storage.

**Storage of onion bulbs:** The selected mother bulbs should be stored at between 2- 10 degrees Celsius. During the winter months it is important to look through and remove rotting or damaged bulbs including onions which sprout too early. Resistance to early sprouting / bolting is an important criterion.

**Seed production:** (year 2) indoor.

In March / April the bulbs should be transplanted into a greenhouse at 20 – 30 cm between plants in the row and 75 – 90 cm between rows.

**Crop support:**

The bulbs will begin to divide bringing forth several tubular stems, which reach between 3 – 4 ft in height each one producing a flower head. 5ft stakes are placed at each end of the row with 5ft canes at 6 ft intervals in the row. Then string is tied along the outside of the crop to keep stems in and supported.

**Rouging:** Any bulbs which fail to grow well and which look weak or bolt too early should be pulled out and discarded **before flowering**. This is called rouging.

**Flowering and Seed harvest:** Flowering takes place over a period of about 4 weeks with seeds reaching maturity 8 - 10 weeks after flowering. Watering during flowering is important to help seed set.

**Seed harvesting:** Once around 60 % of a seed head has matured manual harvesting can take