

*Heliophila coronopifolia*  
New Crop Report

**Taxonomy**

*Heliophila coronopifolia* is an annual and hardy in zones 8-10. It is in the family Brassicaceae, formerly known as Cruciferae. It has numerous common names, but it is most often called African Blue Flax, Blue Eyes, Showy Sunflax, or Wild Flax. (Puccio)

**Geographic Distribution**

Found only in Africa, *H. coronopifolia* is located in South Africa. It is often found in the “Namaqualand daisy fields in the Cape Floral Kingdom.” (Plant Genesis) The estimated location would be between 25° and 35° South latitude. However, there are no specifics on its latitudinal location or the altitude of preference. Because the weather in South Africa is rarely below 7°C, it is unlikely that it would become invasive in any northern regions of the United States. However, due to its relatively fast life cycle, it could become a persistent weed in warmer regions.

**Native Habitat**

*H. coronopifolia*'s native habitat has a Mediterranean climate. It is typically seen in open areas of field. The summer is warm and dry with the fall being somewhat windy and warm. The winter has some morning frost with temperatures possibly as low as -5°C. (“Cape Town Weather”) The plant community is largely represented by species from Iridaceae, Aizoaceae, Ericaceae, Proteaceae, Rutaceae, and Poaceae. (Hannah et al., 2012) Only seven percent of flora in this habitat are annuals. (Hannah et al., 2012)

## **Taxonomic Description**

*H. coronopifolia* is an herbaceous annual that has an erect stature but can lodge. The leaves are filiform and sometimes pinnately compound. The plant is light green to blue-green in color. The inflorescences are terminal racemes with flower numbers ranging from 7 to 10. Each flower has four blue petals measuring 2 cm in length, four sepals, and typically six stamens. The center of the flower is white and the stamen are yellow in color. The seeds are contained within a long, thin siliquae. Seed numbers are unavailable. The estimated bloom period is midsummer. (Plant Genesis) There are no uses by indigenous people listed. However, the crop is being studied for the blue anthocyanin pigments. (Saito et al., 2011)

## **Name and Description of Varieties/Cultivars on the Market**

Presently, there are no varieties or cultivars on the market for *H. coronopifolia*. Seeds for the wild type are available at various online specialty stores.

## **Propagation Methods**

Seed is the best option for propagation because germination time is extremely short. There is no information or mention of possible vegetative propagation. The number of seeds per flower could not be determined because the cultivated plants had not reached seed set, yet. There was also no apparent seed dormancy or any information related to dormancy. For propagation, 144 seeds were sown. Half of the sown seeds were covered in vermiculite and the control half remained uncovered. The seeds were placed in the mist house at 21°C with 16 hours of light. The mist ran every 10 minutes for a 7 second duration. After one week, 85% germination was observed and 100% germination was

observed in the second week. The layer of vermiculite had little to no effect on the germination percentages.

After the second week, the seedlings were moved to capillary mats in a new greenhouse. There, the temperature was kept at 18.3°C with 16 hours of light. A constant liquid feed of N 15-5-15 Cal-Mg was used for watering. Three weeks after sowing, the seedlings were transplanted into 3.5" pots. Ten weeks after sowing, flowers emerged on each plant. Siliquae had not emerged by the end of the experiment and it was not seen whether the crop would continuously bloom. The blooms last for multiple weeks.

### **Product Specifications**

The ideal crop would be about 70cm erect. A marketable cultivar would not lodge and would produce significant blooms throughout the season.

### **Market Niche—Identification and Justification**

An appropriate target sales date would be between late April and mid-May, because the ideal growing conditions require that the danger of frost be over. Potential holidays are Mother's Day and Independence Day. Mother's Day is within the appropriate target sales day. *H. coronopifolia* has the right coloration for Independence Day and will also bloom until the end of summer. This crop could be forced year-round for warmer regions, but it would likely perform better in the summer months. There is little to no information about the history of the crop because the public has only shown interest in it as an exotic wildflower. It has the potential to be a major crop, because a majority of sun annuals are not as vibrantly blue nor do they have as many flowers per stalk. It could possibly perform well as a cut flower due to its stem length, but its longevity as a cut flower has not been tested. Initial limitations could arise with greenhouse sales. Because they will not be in their reproductive stage when displayed

for sale, consumers may not be interested in them at first. *H. coronopifolia* is not identifiable to many growers and consumers. Seeds are readily available, but live plants are not. This product could be available soon. Its short lifecycle allows for fast seed accumulation.

### **Anticipated Cultural Requirements**

*H. coronopifolia* will only be hardy in zones 8-10. It can tolerate heat, but some sources have stated that, though it can tolerate drought, it prefers regular watering. There is little to no information on light quantity, quality, and duration. There seems to be no photoperiod response, but greenhouse conditions and typical bloom time suggest that it prefers long days (short nights). Information on nutrition is lacking, but it thrived on N 15-5-15 Cal-Mg. It prefers well-drained soil. (Plant Genesis) Plant growth regulators are not necessary, but they were not tested. Plants should be started in a 288-plug tray and then later transferred to a 606. It does not make sense to sell one plant at a time. There has been some research done on *H. coronopifolia*'s response to *Fusarium solani* and *Botrytis cinerea*. The crop uses plant defensins to form protective antimicrobial barriers.(De Beer et al., 2011) No issues were observed throughout the experiment.

### **Production Schedule**

Seeds should be sown in week 12. Germination will take 1-2 weeks, and plants will remain in plug trays until the third week. From there they should be transferred to a 606 flat and remain under long day conditions until time of sale, which is preferably in May. Flower buds will emerge rapidly, but plants should not be sold in the flowering stage.

No special treatments are required or have been listed for this crop. Target sales should be around Mother's Day or Independence Day. From my experimentation with germination, production of

this crop will be relatively easy. No treatment needs to be performed on seed and growers should see extremely high levels of germination. Growers can save money by leaving the seeds uncovered.

### **Needs Assessment for Genetic Improvement**

The height of the plant could be a possible area to assess for genetic improvement. Having a dwarf form with the same number of flowers would make for an excellent bedding crop. Lengthening the life span would be desired as well. It would prevent the crop from going to seed too early in the season.

### **Literature Cited**

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