

**Seed increase manual  
for Beta**

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**Site characteristics**

Longitude: 27'01" E  
Latitude: 38'35" N  
Altitude: 12 m

Soil type: alluvial, clay-lomy  
Mean annual temperature: 16.8 °C  
Mean annual rainfall: 544 mm

<b>Seed increase manual for Beta Section Corollinea Species - TURKEY</b>	
	<b>Measure</b>
<b>Seed preparation</b>	Soaking in concentrated H <sub>2</sub> SO <sub>4</sub> for 1 h, then washed in rinsing water.
<b>Sowing</b>	November-December / in pods or directly in field
<b>Transplanting</b>	If in pods: into 10 cm pods, then trasplanted in field.
<b>Fertilisation</b>	Manure only
<b>Vernalisation</b>	During winter in field, natural or greenhouse vernalisation in pods
<b>Cultivation of seed mother plant</b>	60x80 cm distance between plants
<b>Effective population size</b>	50, but sometimes 20 plants
<b>Pollination control</b>	Isolation / apomictic propagation for apomictic species / forms
<b>Pollination method</b>	Wind pollination for allogamous species
<b>Conditions during seed ripening</b>	Depends on weather, during sunny periods, temperature is higher than 30 °C
<b>Seed harvest procedure</b>	Depending on maturity, harvesting starts when seed skin colour of fruits from yellow/green to dark
<b>Pre-processing of seeds</b>	Harvested plants are placed in temporary storage rooms at 20-25 °C
<b>Threshing</b>	Threshing machine
<b>Final processing</b>	Sieving by hand, air seperator
<b>Drying before storage</b>	Five-six weeks at 20-25 °C and 6% relative humidity
<b>Storage</b>	In aluminium cans, mid-term storage in rooms at 0 °C and long term storage in rooms at -20 °C
<b>Germination test</b>	20 °C, 16 h light, 8 h dark (Tan, 1993*)
<b>Problems encountered/</b>	low seed production in <i>B. macrorhiza</i> (especially for small seeded types)

\* Tan, A. (1993) Türkiye'de yayılış gösteren yabani pancar (*Beta L.*) türleri tohumlarının morfolojisi ve çimlenmesi üzerine bir araştırma (A study on seed morphology and germination of beet (*Beta L.*) species found in Turkey) Anadolu, J. of AARI. 2(1993), 48-69

<b>Seed increase manual for Beta Section Beta Species - TURKEY</b>	
	<b>Measure</b>
<b>Seed preparation</b>	Before sowing, seeds are soaked in hot water for 1/2 h, then washed in rinsing water.
<b>Sowing</b>	November-December / March-April
<b>Transplanting</b>	Into 10 cm pods, then trasplanted in field.
<b>Fertilisation</b>	Manure only
<b>Vernalisation</b>	Not required
<b>Cultivation of seed mother plants</b>	60x80 cm distance between plants
<b>Effective population size</b>	20-30 plants
<b>Pollination control</b>	Isolation / distance or isolation cabinets
<b>Pollination method</b>	Wind pollination
<b>Conditions during seed ripening</b>	Depends on weather, during sunny periods, temperature is higher than 30 °C
<b>Seed harvest procedure</b>	Depending on maturity, harvesting starts when seed skin colour of fruits from yellow/green to dark
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<b>Germination test</b>	20 °C, 16 h light, 8 h dark (Tan, 1993)
<b>Problems encountered/</b>	Plants are healthy. Seed production is without problems.

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