Vegetable Grafting Basics

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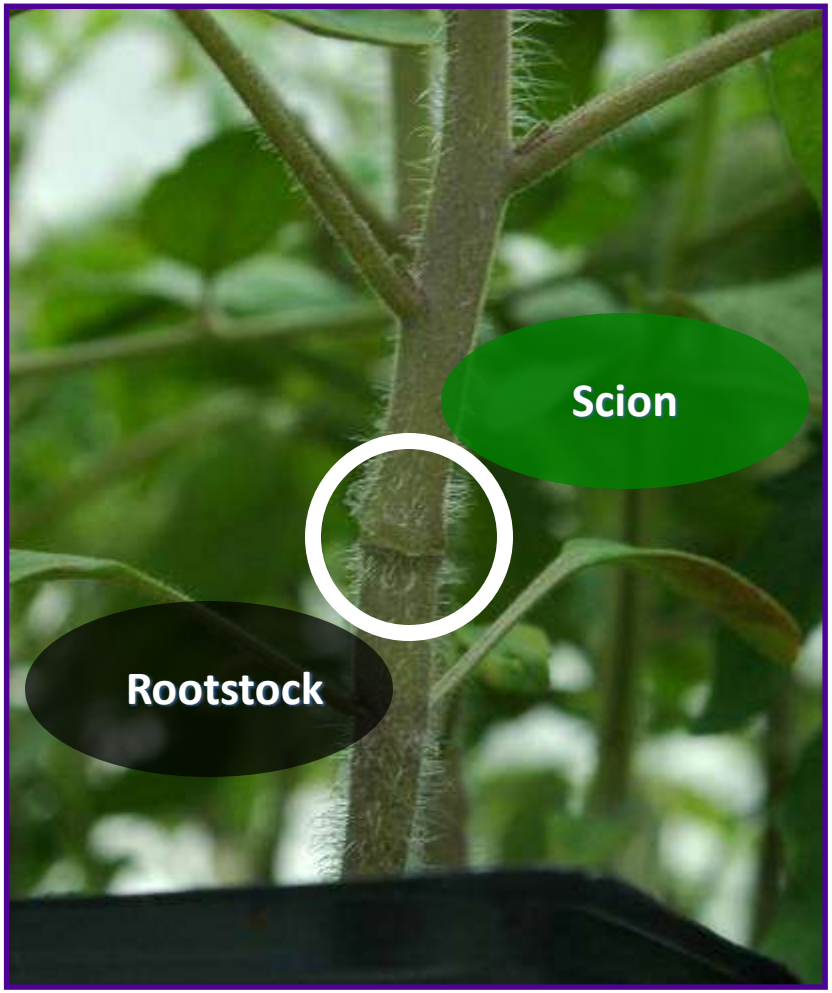
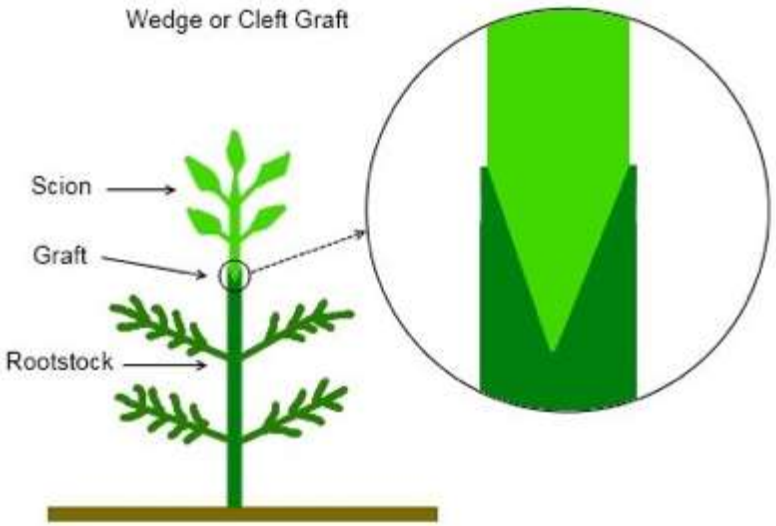
- **What is Grafting?**
  - **Combining part of one plant on to another plant, so that the two grow as a single organism.**

• Grafting Terms – Parts of a Graft

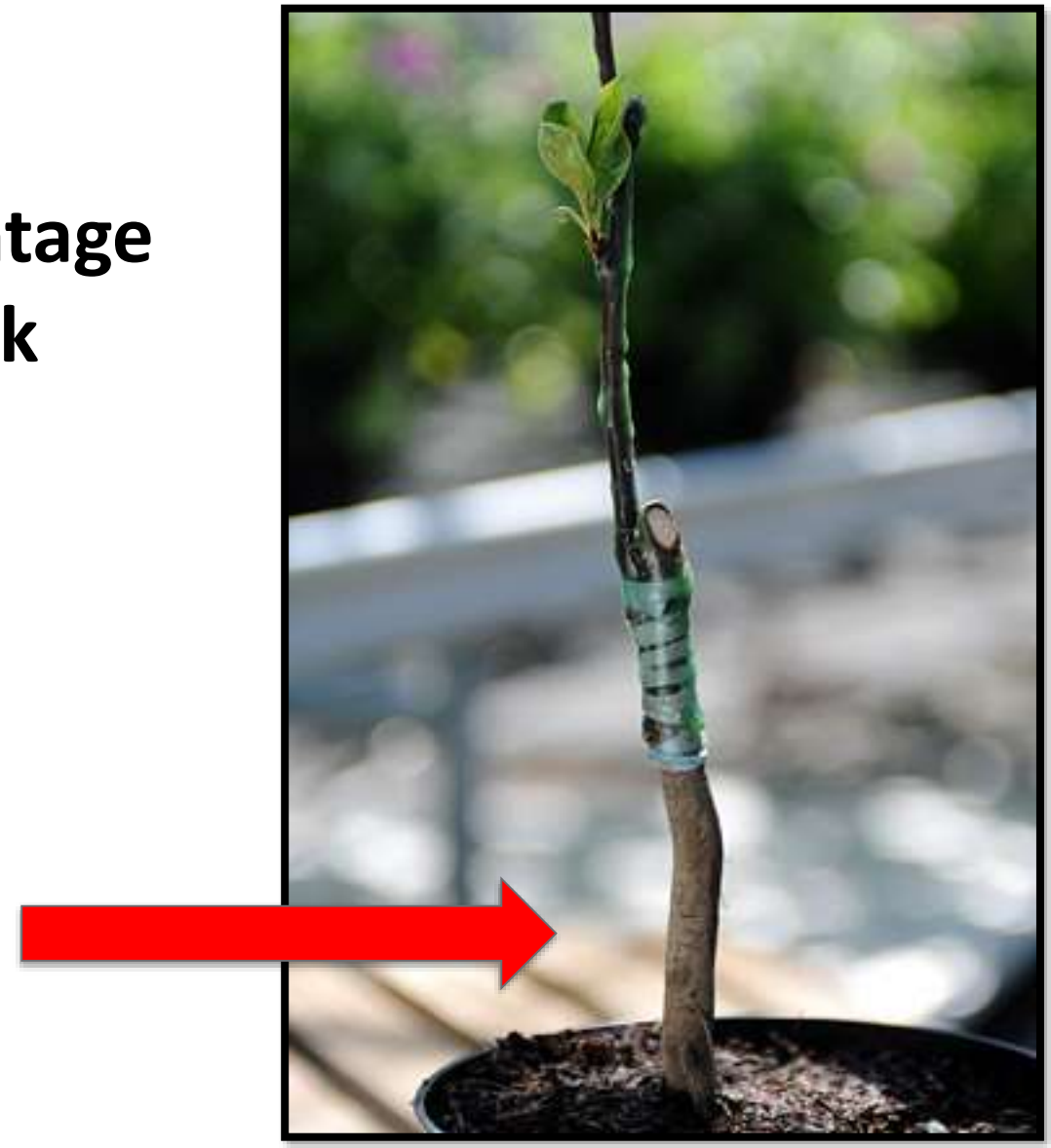


- ➢ Scion (top)
- ➢ Rootstock (bottom)
- ➢ Graft union



- **Why Graft?**

  - **Take advantage of rootstock qualities**



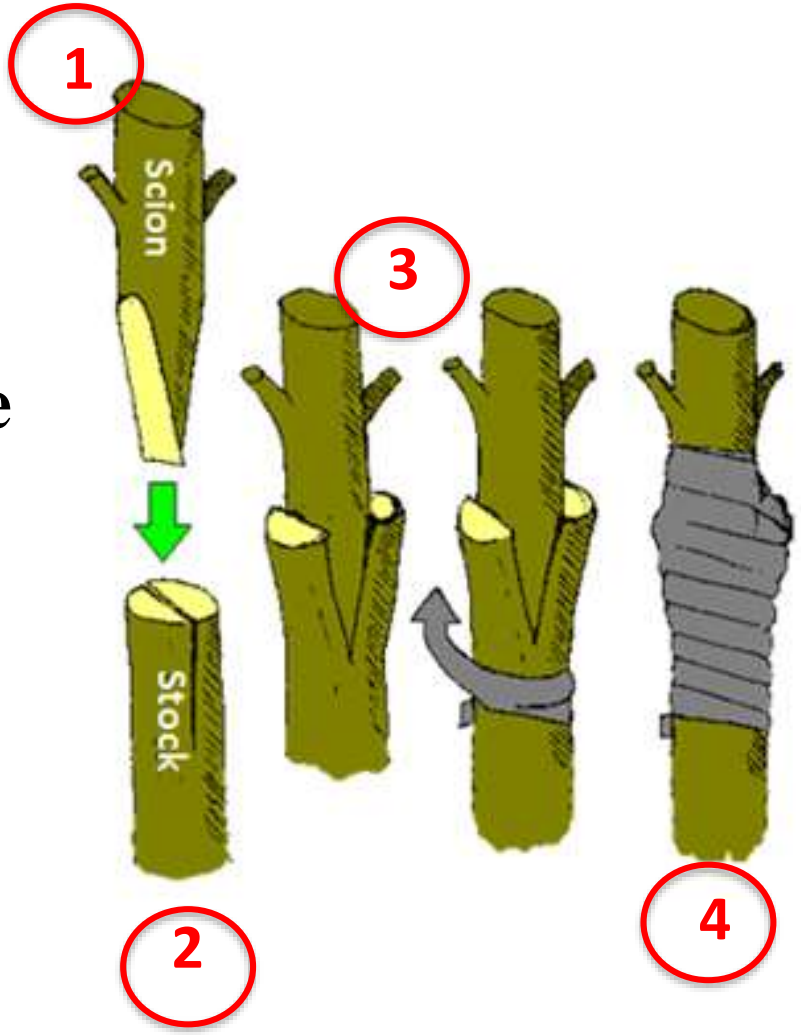
- **For Every Graft – 4 Steps**

1. **Preparation of the Scion**

2. **Preparation of the Rootstock**

3. **Making the Graft (joining the two)**

4. **Aftercare**



- **Requirements for Successful Grafting**

  - **Rootstock and scion compatible**
  - **Close cambial proximity between scion and rootstock**
  - **Rootstock and scion must be in the proper growing stage (proper size & right time)**
  - **Cut surfaces must be protected from desiccation**
  - **Appropriate care and environmental conditions must be given for a period after grafting (graft healing)**

- **Grafting Tomatoes in Southeast Asia**

• Grafting Tomatoes in SE Asia

- Higher profits from selling tomato during the rainy season
- How? Take advantage of rootstock qualities

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Eggplant rootstock

• Wet Season Soil Problems

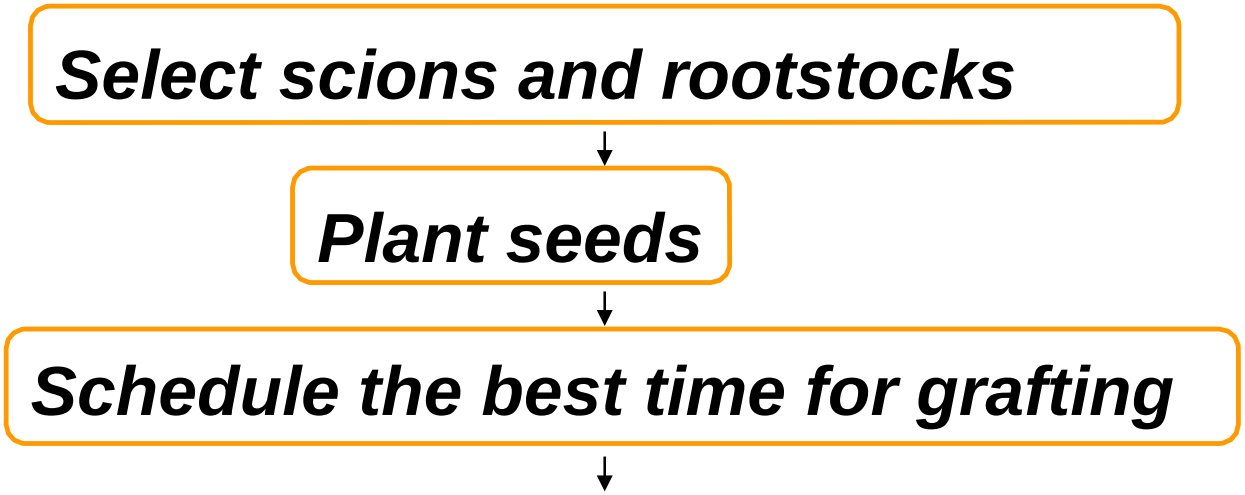
- ➢ Flooding
- ➢ Bacterial wilt disease
- ➢ Fusarium wilt disease
- ➢ Root knot nematode

Eggplant Resistant to:

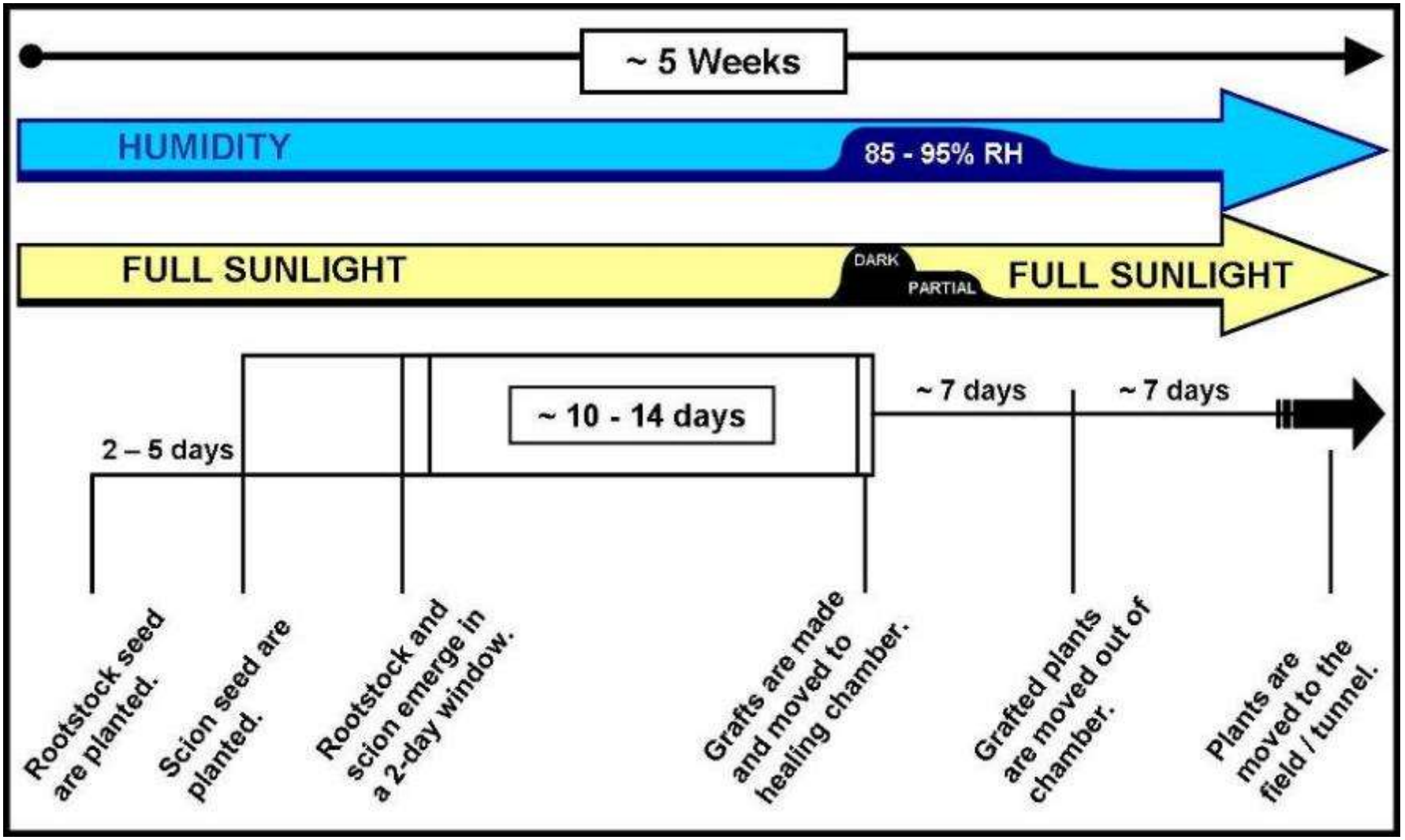
- ✓ Bacterial wilt
- ✓ Fusarium wilt
- ✓ Root-knot nematode
- ✓ Flooding

- The Grafting Process

Grafting Flow Chart and Methods



Grafting Process - Timeline



Grafting Flow Chart and Methods

Select scions and rootstocks

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Plant seeds

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Schedule the best time for grafting

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Conduct grafting

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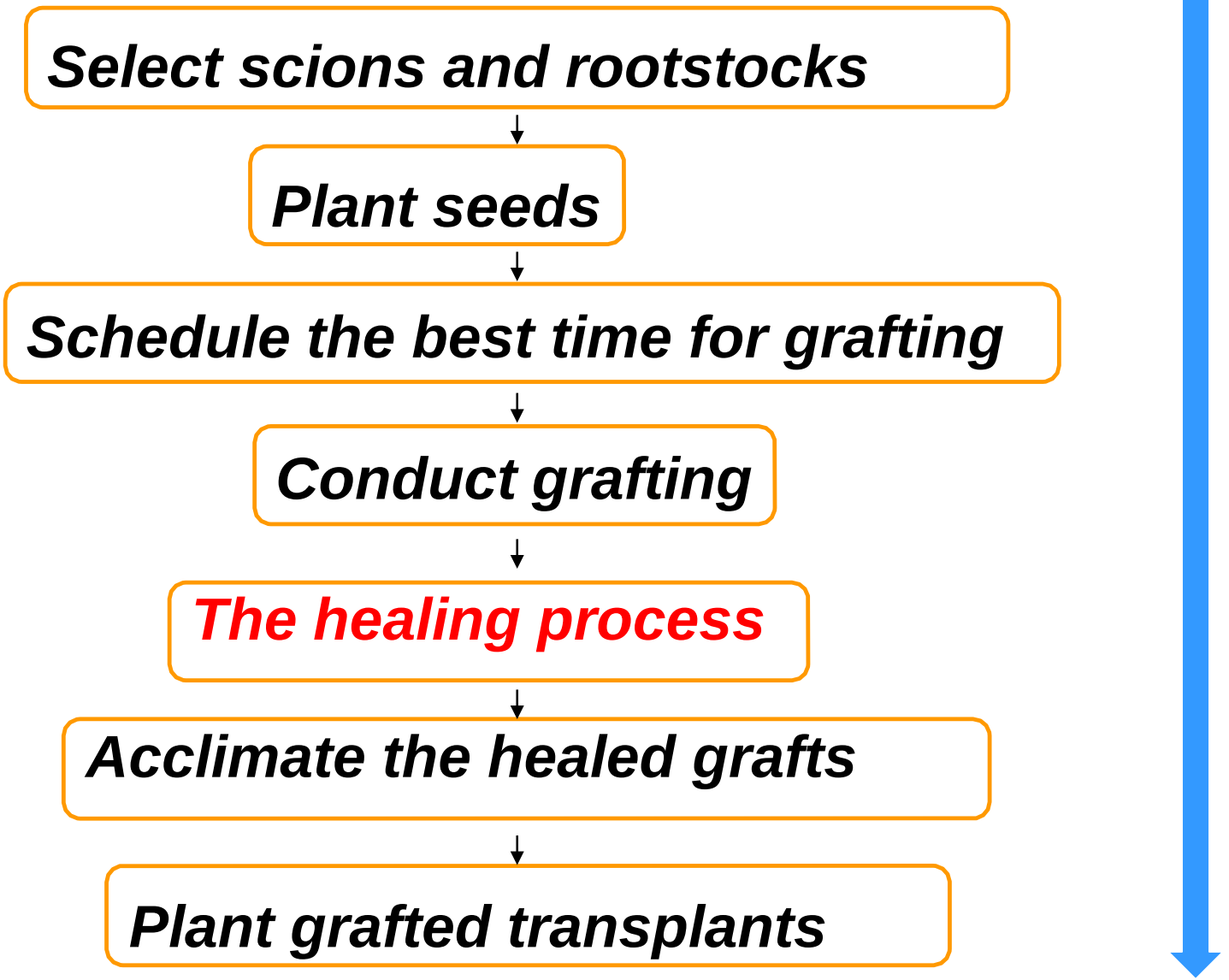
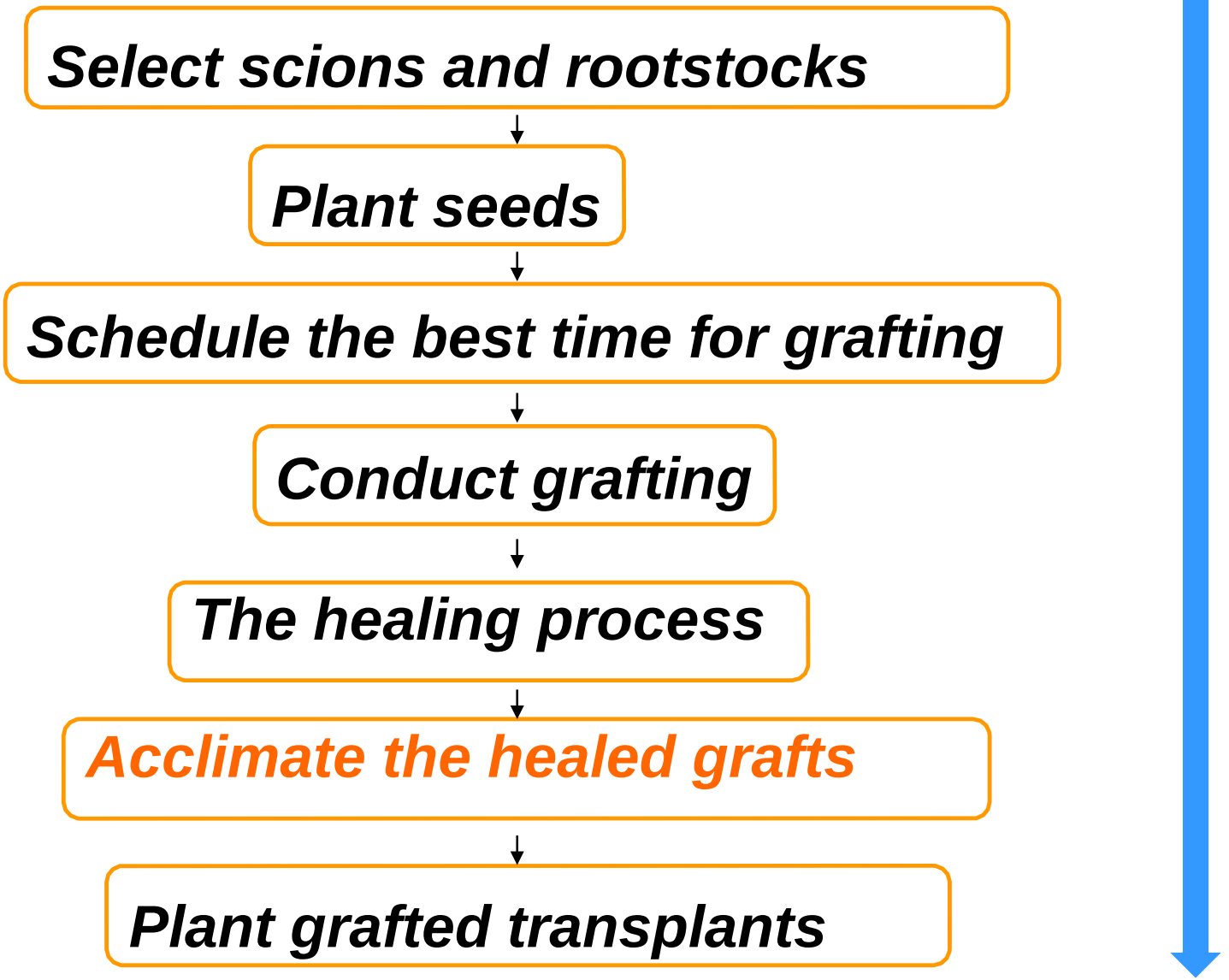
Grafting Flow Chart and Methods



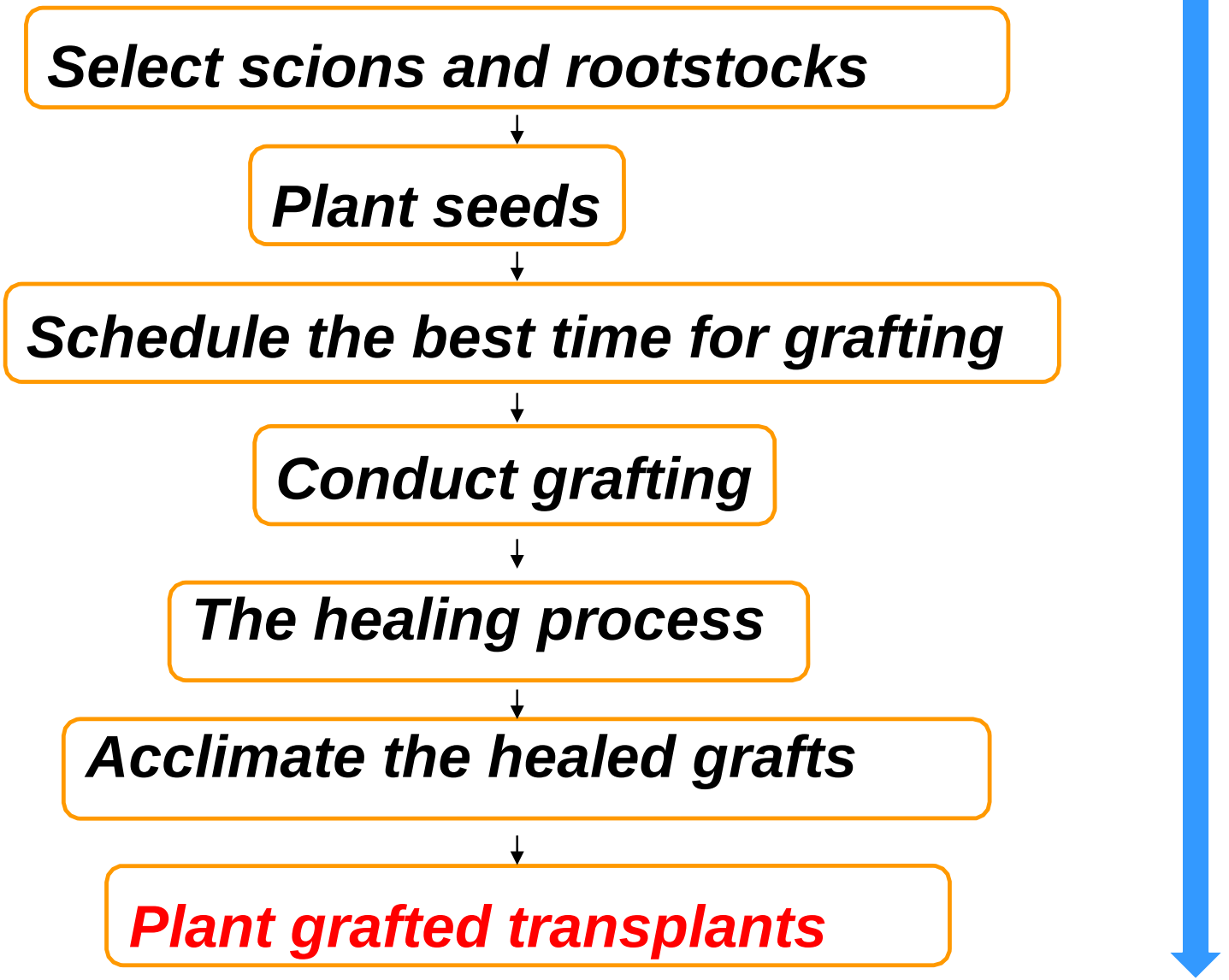
Healing the Graft

Grafting Flow Chart and Methods



Acclimate the Healed Grafts

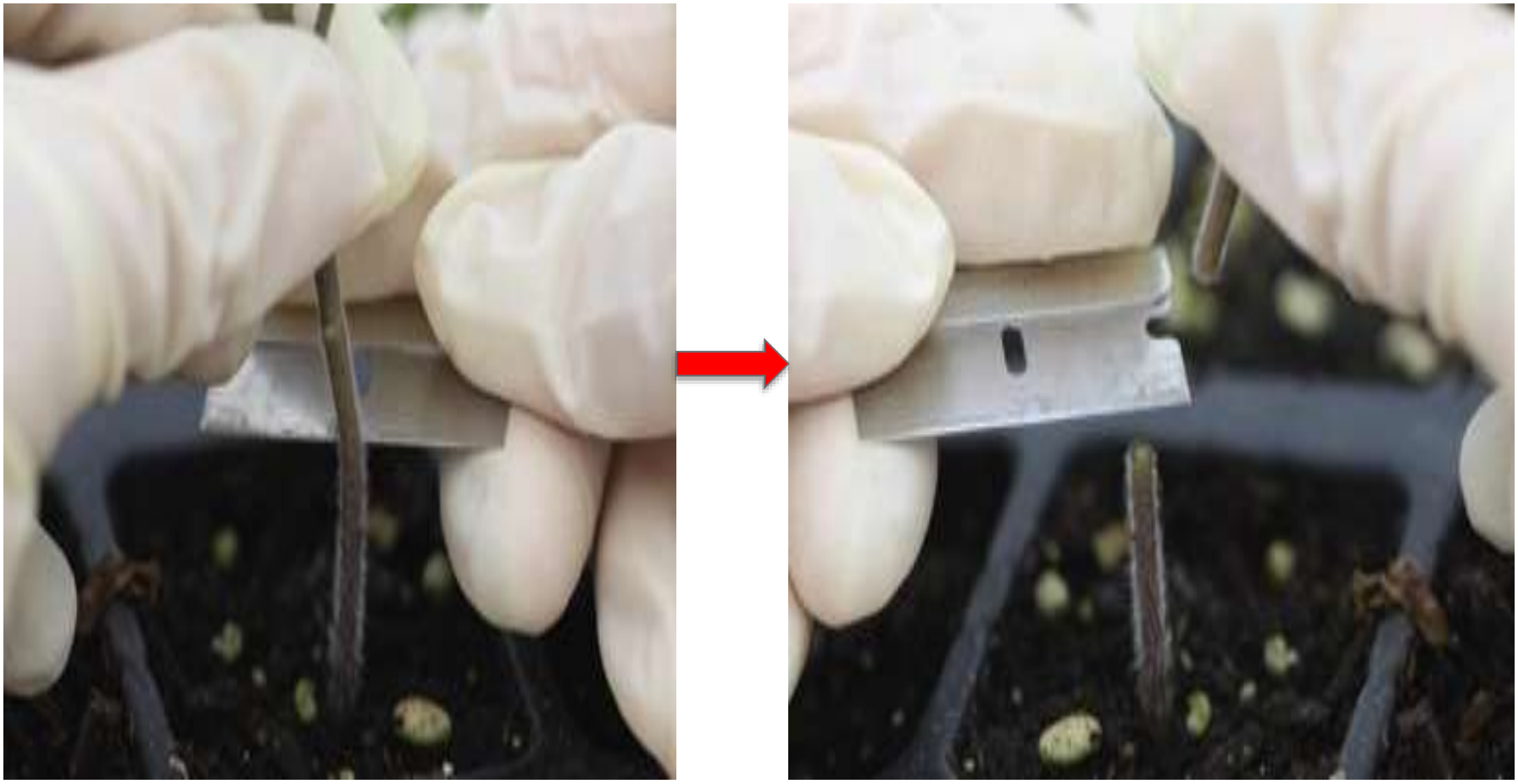
Grafting Flow Chart and Methods



Grafted Tomato Planted in the Field

Cleft Grafting — Tomato Scion / Eggplant Rootstock

1) Remove the shoot of the rootstock by making a cut (below the cotyledons)



Cleft Grafting — Tomato Scion / Eggplant Rootstock

2) If using self-made plastic tube, place over the rootstock stump; skip this step if using commercial clips

Commercial clips

Cleft Grafting — Tomato Scion / Eggplant Rootstock

3) Make a vertical cut in the center of the rootstock.

Cleft Grafting — Tomato Scion / Eggplant Rootstock

4) Remove the roots of the scion by making a cut above or below the cotyledons.

Cleft Grafting — Tomato Scion / Eggplant Rootstock

5) Optional: Remove leaves from scion; do NOT damage the youngest leaf or apical meristem.

Cleft Grafting — Tomato Scion / Eggplant Rootstock

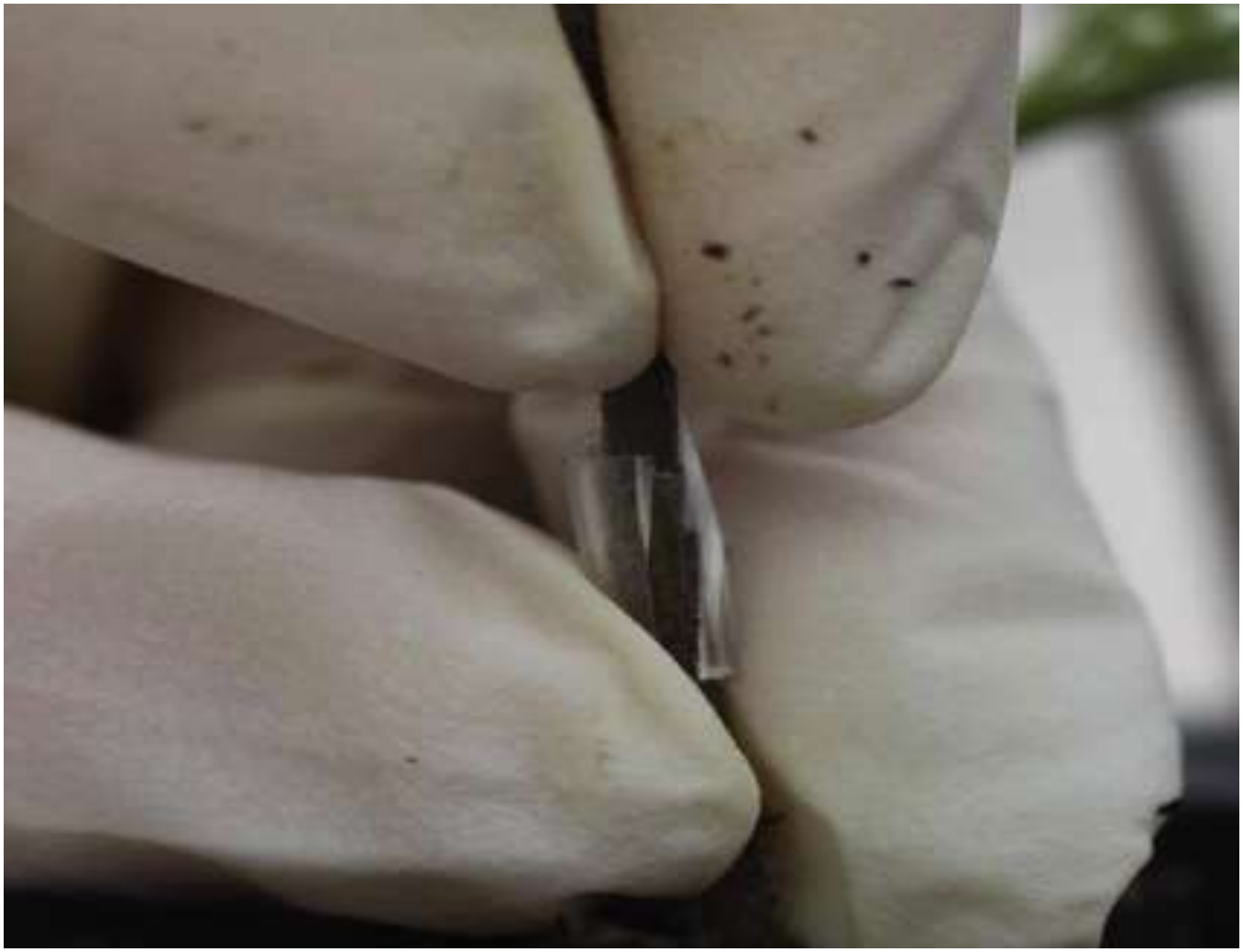
6) Trim scion stem into a wedge shape with two diagonal cuts.

Cleft Grafting — Tomato Scion / Eggplant Rootstock

7) Place the prepared scion shoot into the bisected rootstock stump.

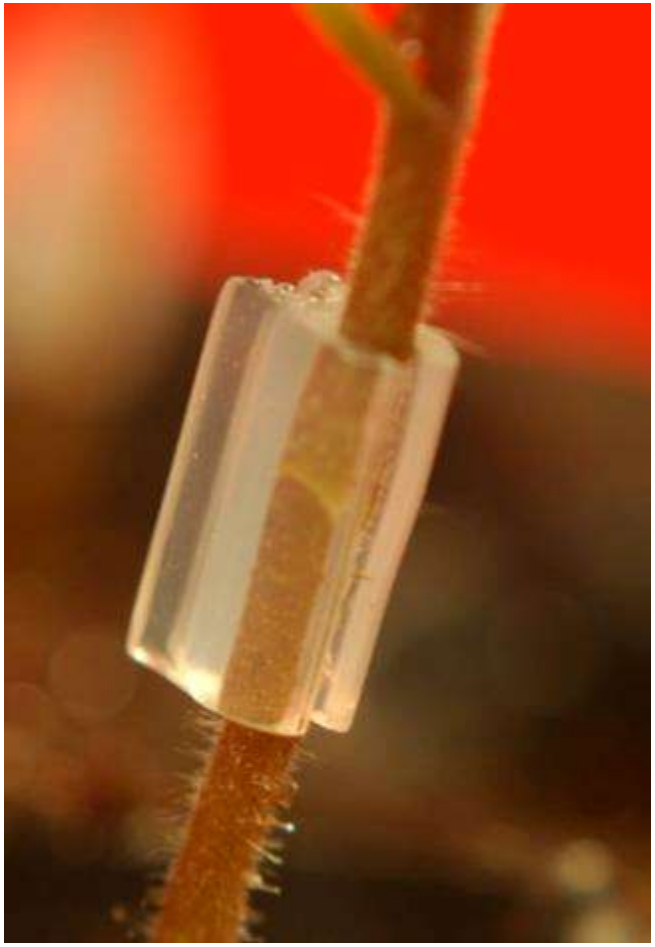
Cleft Grafting — Tomato Scion / Eggplant Rootstock

8) If using a self-made clip, pull upward to secure the graft union



Cleft Grafting — Tomato Scion / Eggplant Rootstock

8) …or, attach a commercial clip.



Healing Area/Chamber

9) Place newly grafted plants into healing chamber as soon as possible after grafting

Cleft-grafted tomato

Successful graft after healing. Plants are typically ready for transfer to the field 2–3 weeks after grafting.

Tomato

Grafted tomato plants ready for transplanting

Planting grafting tomato

Mulch grafted tomatoes to prevent soil-borne diseases from splashing onto the plants during rain