



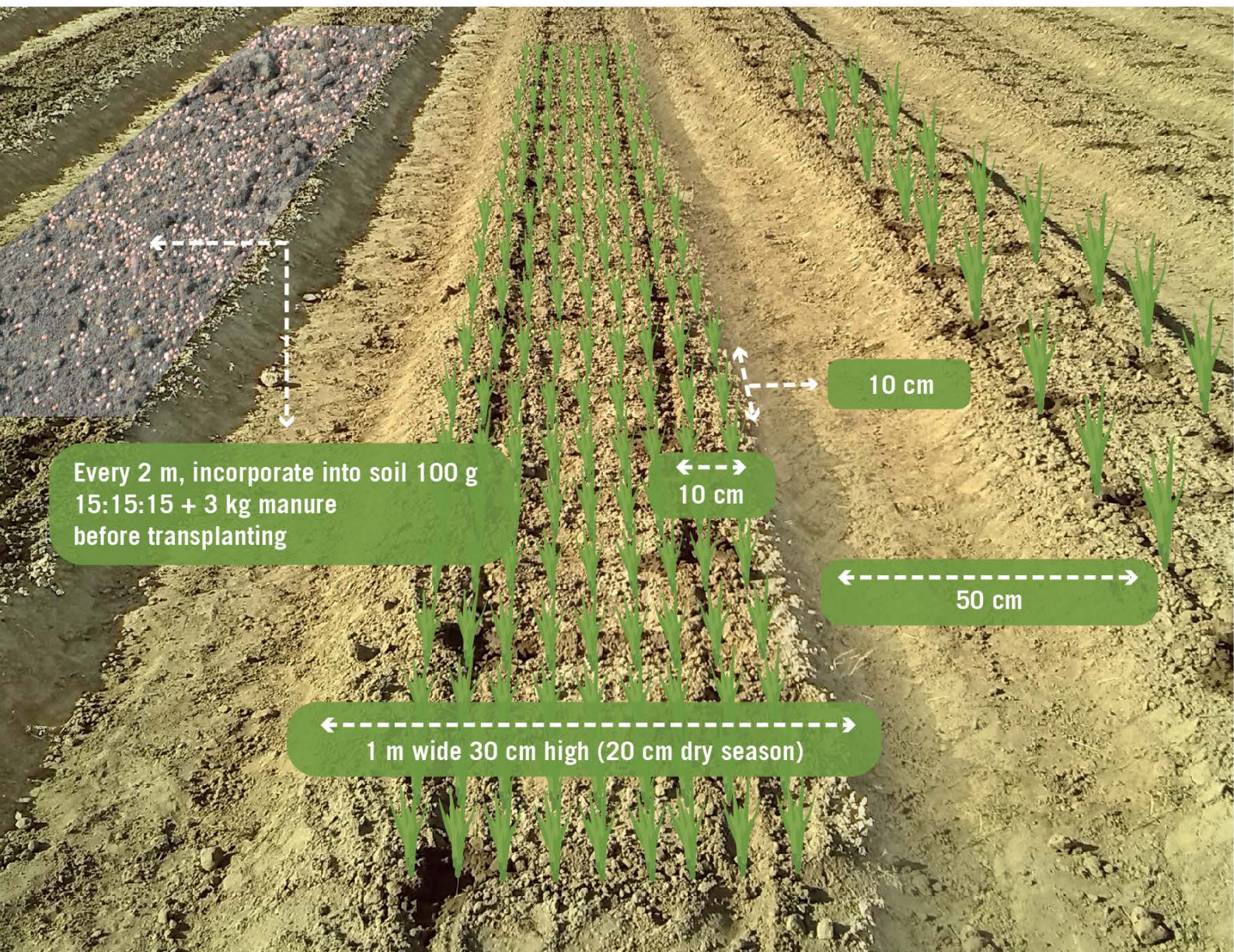
Crop Guide **ONION**

• Land Preparation

- » Narrow paths help with irrigation and drainage
- » 600,000 plants/ha (adjust according to the variety and season)



ENGLISH



Every 2 m, incorporate into soil 100 g 15:15:15 + 3 kg manure before transplanting

10 cm

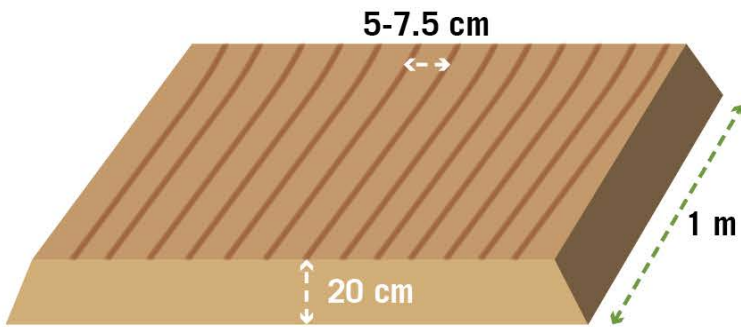
10 cm

50 cm

1 m wide 30 cm high (20 cm dry season)

• Seedling Production

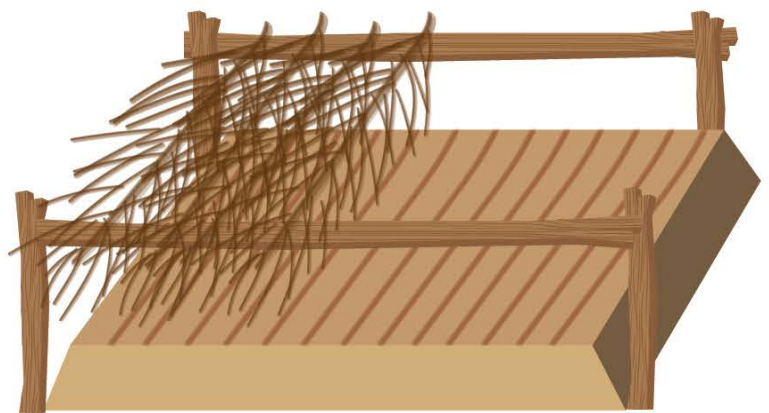
◆ Substrate preparation: For 0.1 acre of onion crop, need 40 m² of seedbed



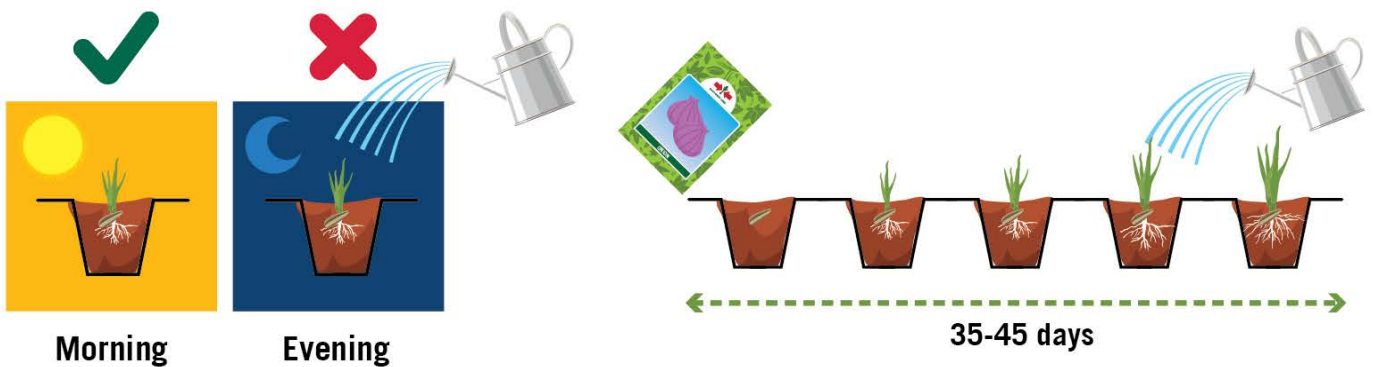
- » Prepare raised beds
- » Every 2 m, incorporate into soil 100 g 15:15:15 + 3 kg manure before sowing
- » Mix 4 liters water with 1 tbsp fungicide + 1 tbsp insecticide and spray
- » Make rows 5-7.5 cm apart, 1.5 cm deep
- » Protect from sun until emergence, then protect during hottest time of the day
- » Monitor seedbed everyday



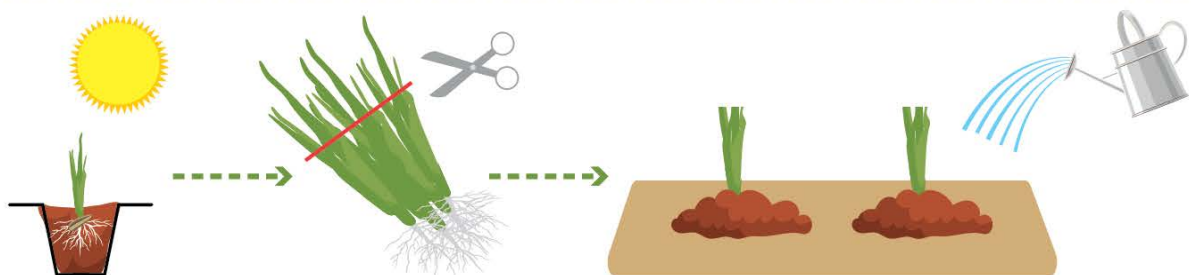
Cover with plastic in case of heavy rain



◆ Maintain constant moisture

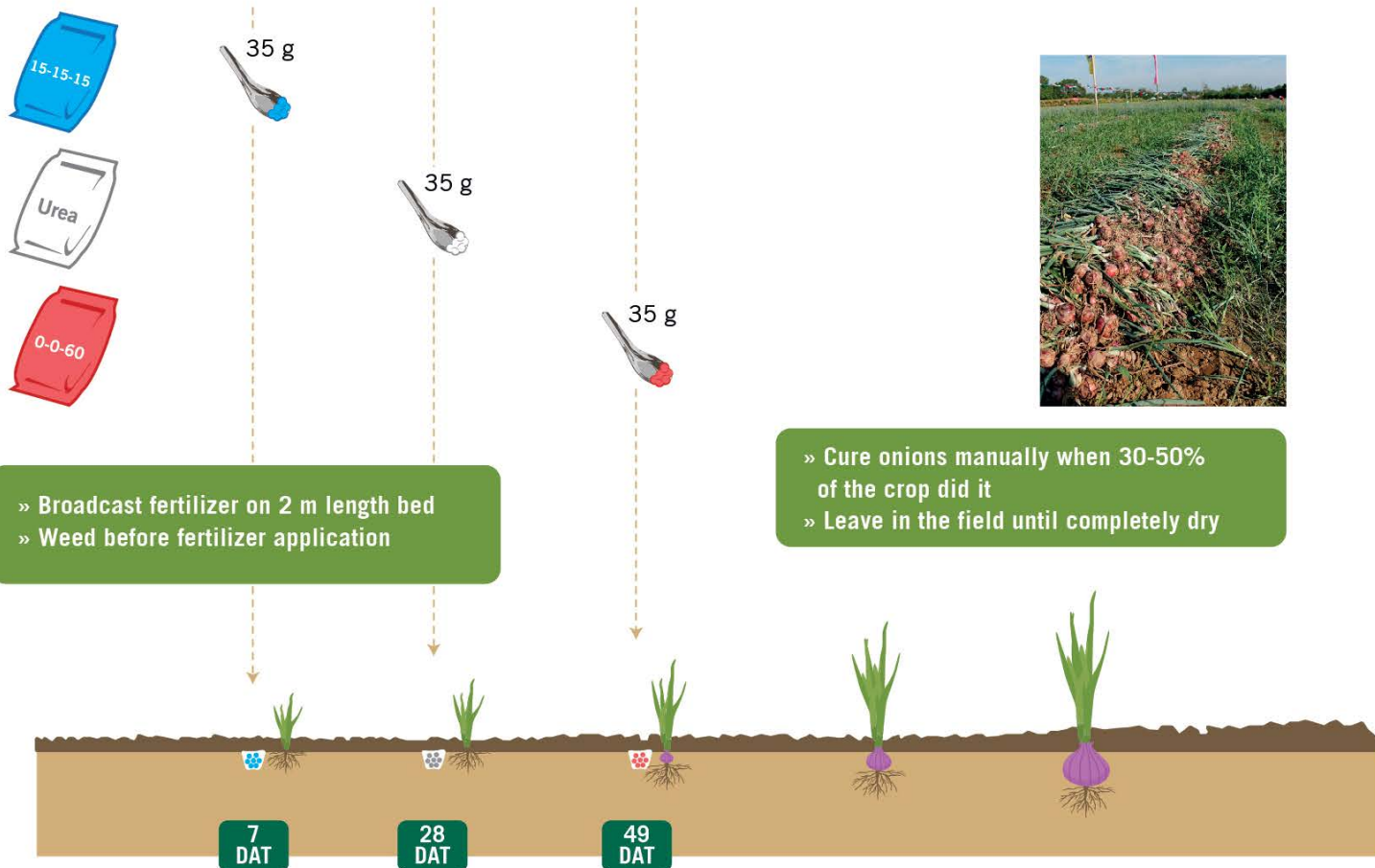


◆ Water in morning, use a small hoe to dig seedlings



Separate and plant seedlings 2.5 cm deep; water immediately after transplanting.

• Fertilizer Application

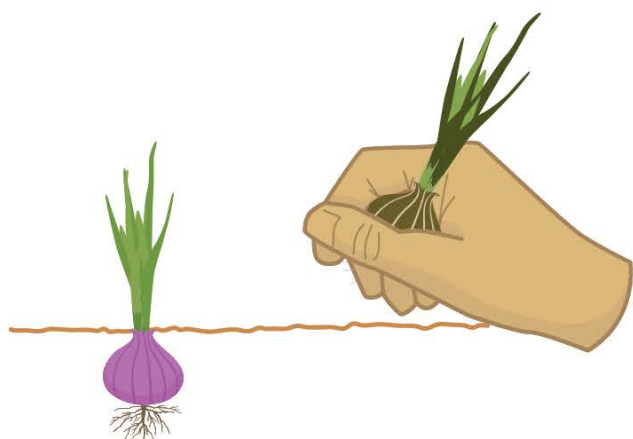


Recommended amount based on crop optimum nutrient requirement and plant population of 600,000 per hectare. Adjust application according to season, soil conditions and plant growth status.

• Integrated Pest Management



- » Use sticky traps to monitor and mass trap insect pests
- » Use sweet trap or light trap for caterpillar



To prevent infection from spreading, sick plants, old crops and weeds must be removed and destroyed.



Crop rotation prevents build up of insect pests and diseases and restores soil fertility.

• Integrated Pest Management and Safe Use of Pesticides

- » Alternate MoA groups to prevent resistance
- » Always read pesticide label and intended use (registered crop and pest)



| Active Ingredient | MoA | Action | Thrips | Caterpillar | Leafminer |
|------------------------------------|-----|---------------|--------|-------------|-----------|
| Lambda-cyhalothin | 3A | SC | ✓ | ✓ | ✓ |
| Dinotefuran | 4A | S | ✓ | | ✓ |
| Spinosad | 5 | S | | ✓ | ✓ |
| Spinetoram | 5 | SC | | ✓ | ✓ |
| Abamectin | 6 | SC (slight S) | ✓ | ✓ | ✓ |
| Thiocyclam oxalate | 14 | SC | ✓ | | ✓ |
| Chlorantraniliprole | 28 | S | | ✓ | |
| Flubendiamide | 28 | S | | ✓ | |
| <i>Bacillus thuringiensis</i> | 11A | C | | ✓ | |
| <i>Azadirachtin (neem extract)</i> | UN | unknown | ✓ | ✓ | ✓ |

Mode of Action (MoA) based from IRAC; SC (Stomach + Contact); S (Systemic)



| Active Ingredient | MoA | Action | Remarks | Anthracnose | Pink Roots | Stemphylium Leaf Blight | Purple Blotch | Bacterial Soft Rot |
|--------------------------|------|--------|--|-------------|---|-------------------------|---------------|--|
| Copper-based Fungicides | M 01 | P | For bacterial diseases: Use only when necessary; do not overuse to avoid potential resistance build up | ✓ | | | ✓ | ✓ |
| Chlorothalonil | M 05 | P | | ✓ | | ✓ | ✓ | No effective curative spray Manage with preventive measures like raising bed, crop rotation and sanitation Avoid overhead irrigation |
| Mancozeb | M 03 | P | Maximum 4 times per crop cycle | ✓ | Use resistant varieties or disease-free seedlings | ✓ | ✓ | |
| Azoxystrobin | 11 | P + C | | ✓ | | ✓ | ✓ | |
| Propamocarb | 28 | P + C | | | | | ✓ | |
| Cymoxanil | 27 | C | Tank mixed with preventive (Chlorothalonil or Mancozeb) | | | | | ✓ |
| Metalaxyl | 4 | P + C | High risk of resistance (only use 2 times per season) | | | | ✓ | ✓ |
| <i>Bacillus subtilis</i> | BM02 | P | | ✓ | ✓ | ✓ | ✓ | ✓ |

Mode of Action (MoA) based from IRAC; SC (Stomach + Contact); S (Systemic)

- Wear protective gear
- Good weather
- Good nozzle
- Wash after spraying

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Agrochemical recommendations have been developed in cooperation with Wageningen University & Research