

**Supplement Table S1.** Losses production of garlic.

<b>Stages</b>	<b>Causes of loss</b>	<b>Causes</b>	<b>Loss components</b>
Preharvest	Plant diseases	Black mould, rust, and fusarium rot	Plant (yield and quality losses)
	Pest	Bulb mites, thrips, and whiteflies	Plant (yield and quality losses)
	Environments	Shortage of soil nutrients and fertilizer, drought, excessive rainfall, and extreme temperature	Plant (yield and quality losses)
Harvest	Bulb stuck in the ground		Plant, bulbs
	Improper harvesting stages		Immature, over-mature bulbs
Postharvest	Physical losses	Physical damage, spoilage of bulbs during transport	Bulbs
	Microbial spoilage	Bacteria, yeast, and fungi	Leaves, roots and skin
	Pest infestation	Bulb mites, thrips, and whiteflies	Bulbs, moisture content
	Storage losses	Temperature, humidity	Moisture