



Late Blight and Bhutan

Ugyen Dorji

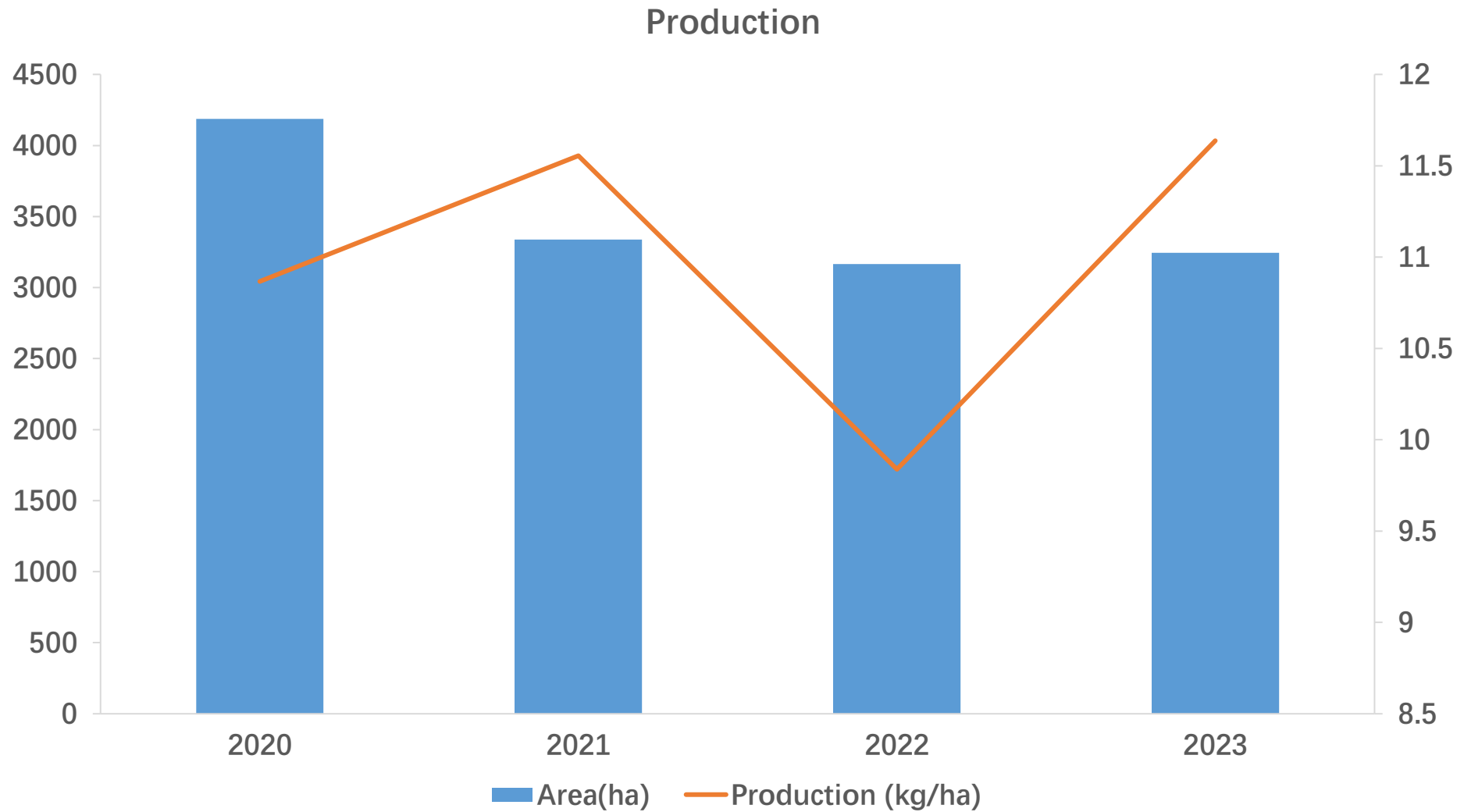
National Plant Protection Centre

Department of Agriculture

Ministry of Agriculture and Livestock

(13/03/2025)

Potato Production



Key fungicides for late blight control

Top 5 fungicides	Common name	Treatment cost (US\$)_national	Market value (million US\$)	Producers (local or imported)
No. 1	Mancozeb	0.017 million	4.33 (2023)	Imported
No. 2	Copper oxychloride			Imported
No. 3	Metalaxyl	Phased out		

Key concerns for late blight control

- ✓ Candidates for mancozeb replacement (for example)
 - ✓ Potassium phosphite? Reduces disease severity but not effective alone
 - ✓ Fosetyl-Al
- ✓ Problems and/or obstacles of potato industry
 - ✓ Potato tuber moth
 - ✓ Unseasonal frost (20-90% damage, 190+ acres, 2024)
 - ✓ Late blight
 - ✓ Informal seed exchanges
- ✓ Future plan
 - ✓ Assess the efficacy of potassium phosphite

Farmer practices for late blight control

- ✓ When do they start to control potato late blight?
 - ✓ First sprays; first or second week of May at 2,000-2,500 m asl and late May or the first week of June at > 2,500 masl.
 - ✓ Subsequent sprays should be a minimum of 10-14 days apart and be based on field monitoring.
- ✓ What are the ways to control potato late blight?
 - ✓ Resistant varieties; NKK (2014), Yusi Maap (2017),
 - ✓ Non-chemical management
 - ✓ Mancozeb

Farmer practices for late blight control

- ✓ How about effects of those ways?
 - ✓ Resistant varieties; lower dependency on fungicides;
 - ✓ Mancozeb; secure yields
- ✓ How about influence of those ways?
 - ✓ Resistant varieties; improved income, but needs more adoptions
 - ✓ Mancozeb; stable production but might pose environmental risks

- Agency (NPPC) website: <https://www.nppc.gov.bt/>
- Pest database: <https://pestsofbhutan.nppc.gov.bt/>