



Wheat rust advisory - risk assessment from surveys and forecasts in Bhutan

Summary period: 06 May - 12 May 2026

Overall risk level:

Caution / Low

Key messages

Extensive Surveys have been undertaken and are continuing, with 155 fields surveyed. Yellow rust and leaf rust are being detected in Punakha and Wangdue. Yellow rust is now being detected in Haa. Most fields have low incidence / severity, but around 20% of fields are showing moderate/high incidence / severity. Overall, disease pressure is relatively low. Crops are at a range of growth stages, from stem elongation to maturity.

Forecasts indicate high suitability for all rusts, notably in southern areas, mid hills, central valleys (Punakha/Wangdue) and eastern areas. Current forecasts indicate highest spore deposition in Punakha/Wangdue and a northerly dispersal of spores. This dispersal may provide inoculum for early crops in the higher hills (e.g., Gasa).

Given high suitability for disease development, it is likely that disease (both yellow and leaf rust) may increase.

Recommendations

Close monitoring of fields, particularly for susceptible varieties and younger crops, is recommended. Emerging crops (especially in the west/south/Punakha Valley and parts of the east) should be checked for any disease presence.

Scouting should be undertaken and farmers informed to be vigilant for the emergence of rust (especially stripe rust). In addition, particular attention should be paid to any appearance of stem rust, as conditions for infection are forecast to be highly suitable.

- Awareness should be raised amongst stakeholders at all levels, including farmers, to be vigilant for early appearance of rusts. **Early control to stop increased spread and further build-up of disease is very important.**
- Sampling should be undertaken to determine races of rust present.

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Field surveys

Looking at surveys in the period since Jan 01 2026. Surveys undertaken Feb 16 2026 - Apr 28 2026. A total of 155 fields surveyed. No stem rust detected. Legend for severity and incidence intensity: Low: less than 20%; moderate: 20-40%; high: more than 40%.

Leaf Rust reported from 35 out of 155 fields surveyed (23%). Moderate to high incidence of leaf rust has been seen in 7 fields (20% of infected fields). Moderate to high severity of leaf rust has been seen in 6 fields (17% of infected fields).

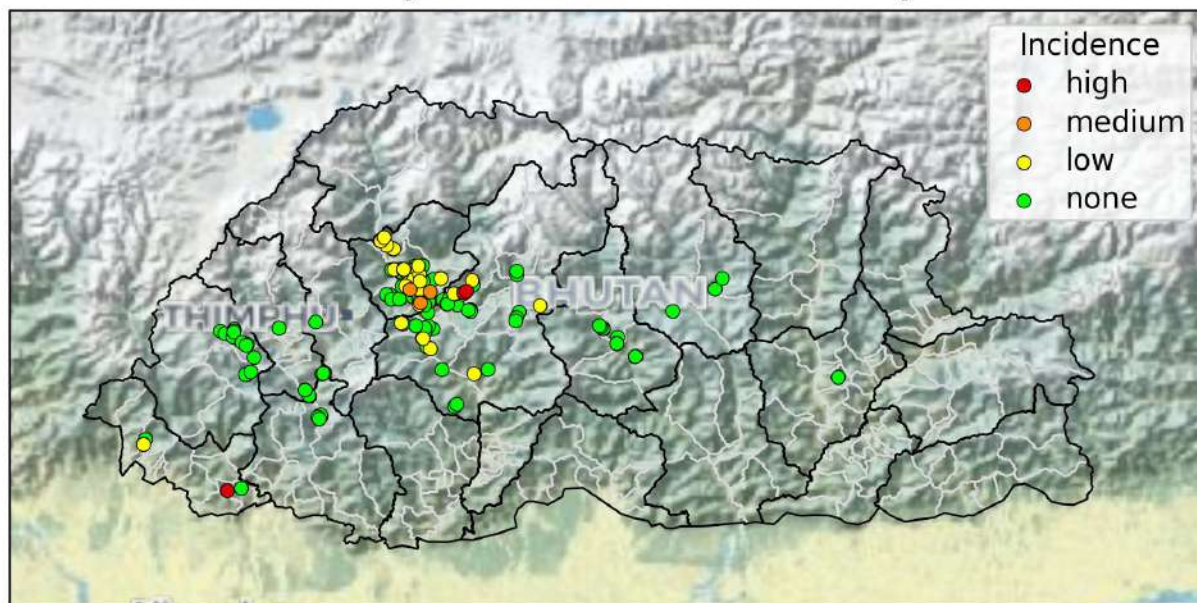
Stripe Rust reported from 44 out of 155 fields surveyed (28%). Moderate to high incidence of stripe rust has been seen in 10 fields (23% of infected fields). Moderate to high severity of stripe rust has been seen in 12 fields (27% of infected fields).

Table 1: Variety analysis of surveys.

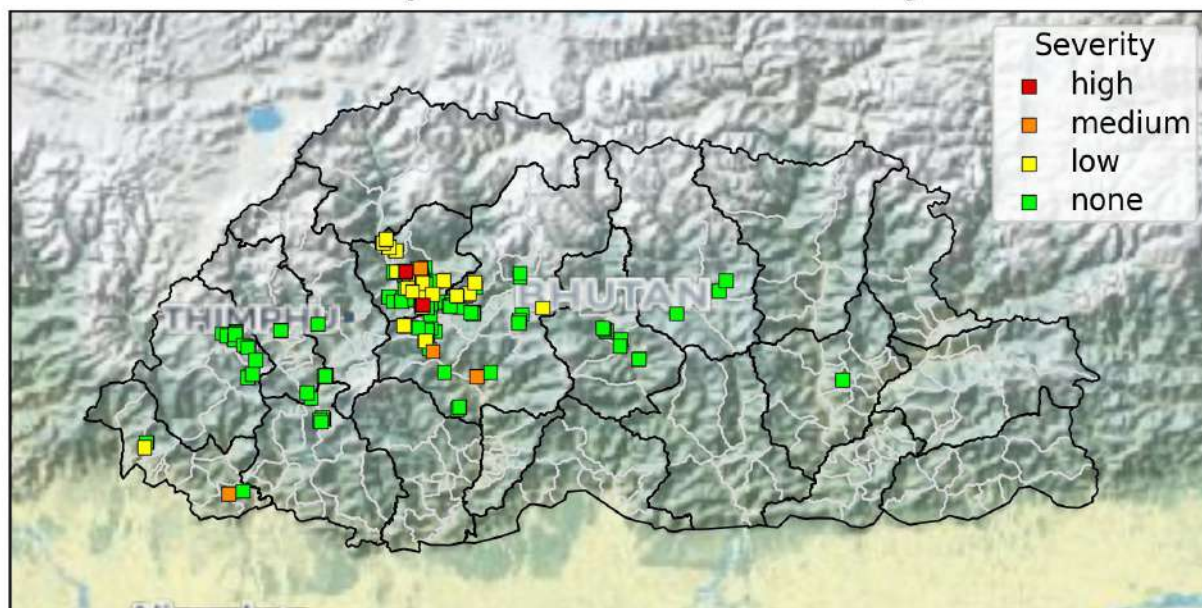
Variety	Number of surveys	Number of surveys reporting infection of		
		stem rust	stripe rust	leaf rust
Bajokaa 3	1	n/a	0	0
Bumthangkaa Drukchu	6	n/a	0	0
Guma Sokha	36	n/a	21	8
Unknown	112	n/a	23	27

Growth stage analysis of surveys unavailable because no surveys available from the last week (since Apr 29 2026).

Leaf rust surveys Bhutan Feb 16 2026 - May 05 2026

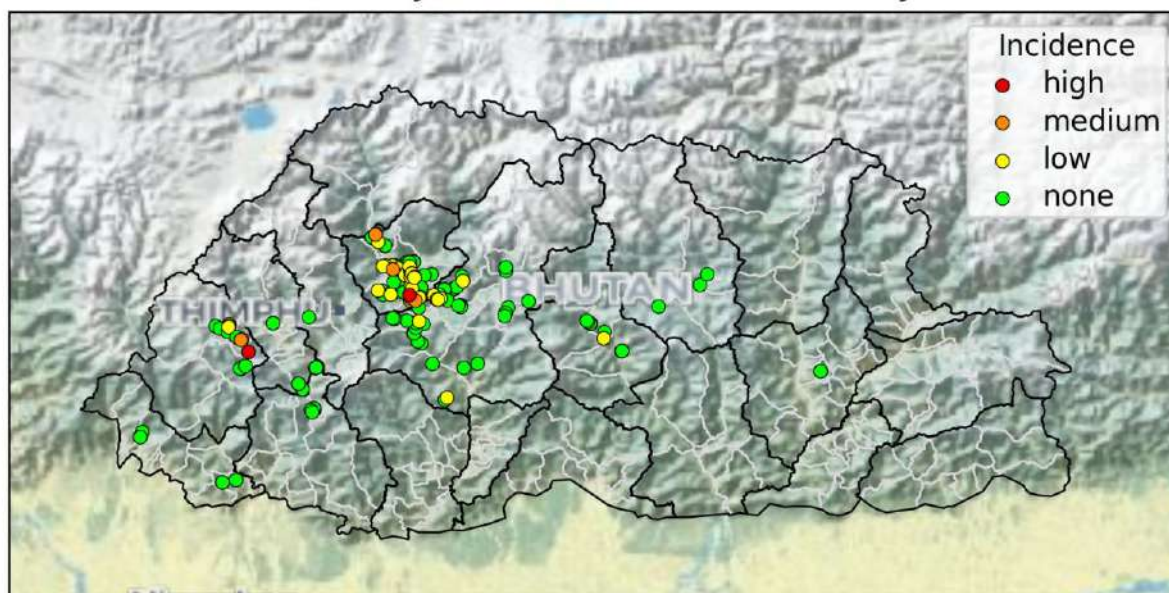


Leaf rust surveys Bhutan Feb 16 2026 - May 05 2026

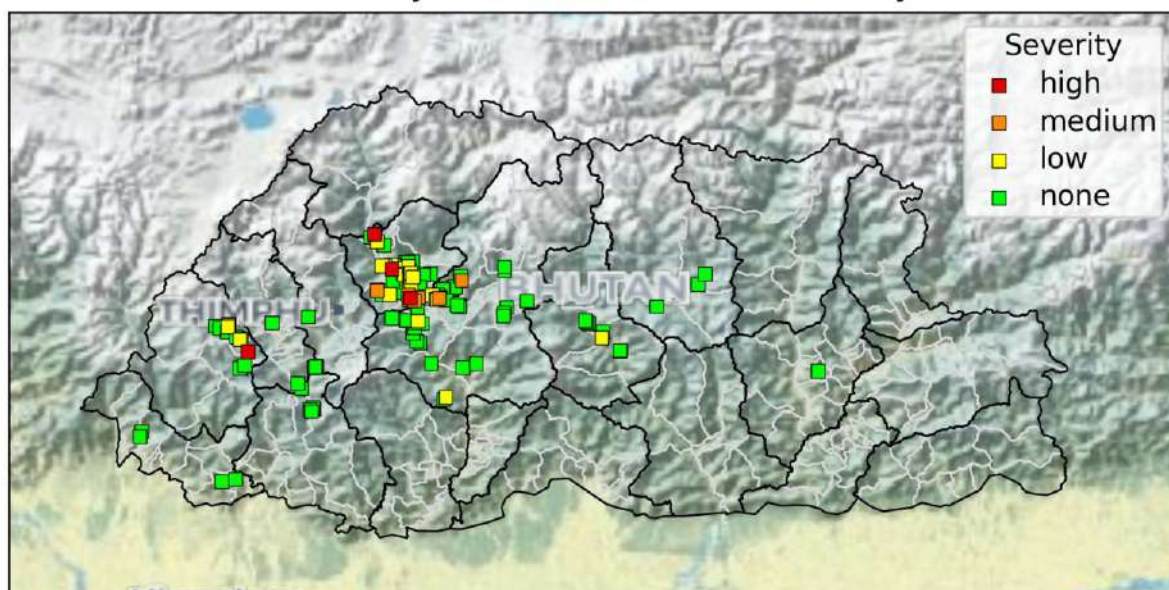


Map 1: Leaf Rust incidence (top) and severity (bottom) in Bhutan field surveys Feb 16 2026 - May 05 2026

Yellow rust surveys Bhutan Feb 16 2026 - May 05 2026

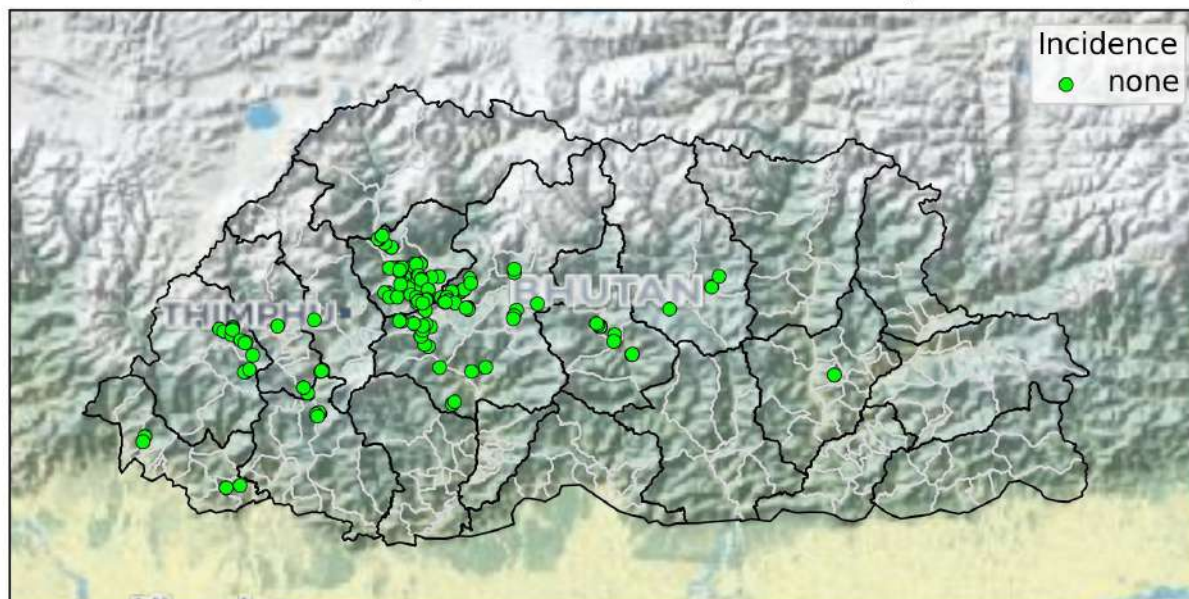


Yellow rust surveys Bhutan Feb 16 2026 - May 05 2026

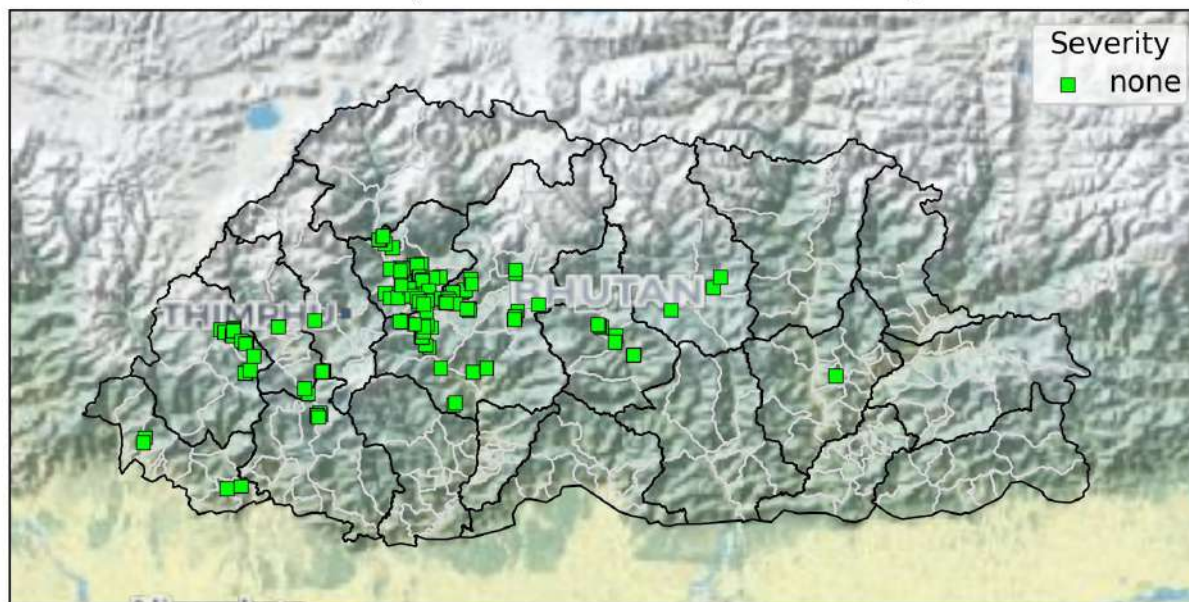


Map 2: Stripe Rust incidence (top) and severity (bottom) in Bhutan field surveys Feb 16 2026 - May 05 2026

Stem rust surveys Bhutan Feb 16 2026 - May 05 2026



Stem rust surveys Bhutan Feb 16 2026 - May 05 2026



Map 3: Stem Rust incidence (top) and severity (bottom) in Bhutan field surveys Feb 16 2026 - May 05 2026

Spore dispersal forecasts

Spore dispersal forecasts run by the UK Met Office and Cambridge University are displayed for stem, stripe and leaf rusts for the forecasted period. Surveys in each district are gathered to provide a single source per administrative area for dispersal forecasts (red dots in figure).

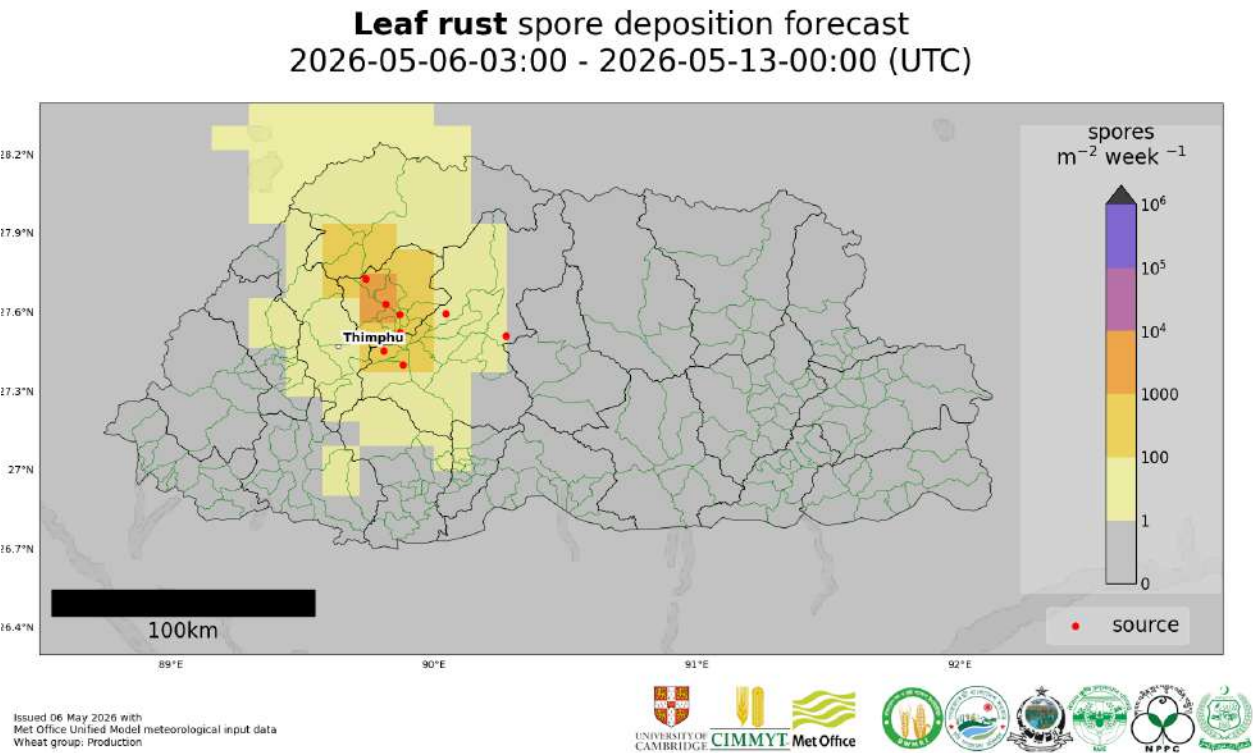
Environmental / climatic suitability for infection forecasts

These forecasts give the probability of wheat rust infection occurring based on meteorological factors. The maximum infection efficiency that can occur is 100%. This means that 100% of the spores deposited on susceptible wheat plants could complete the infection process. Therefore, a forecast Infection Efficiency of 100% indicates the highest risk of wheat rust infection occurring in susceptible wheat varieties.

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Leaf rust

Dispersal: Current forecast (06 May - 12 May) indicates dispersal in a northerly direction. Most spore deposition in Punakha.



Map 4: Leaf rust spore deposition forecast Bhutan 06 May - 12 May 2026

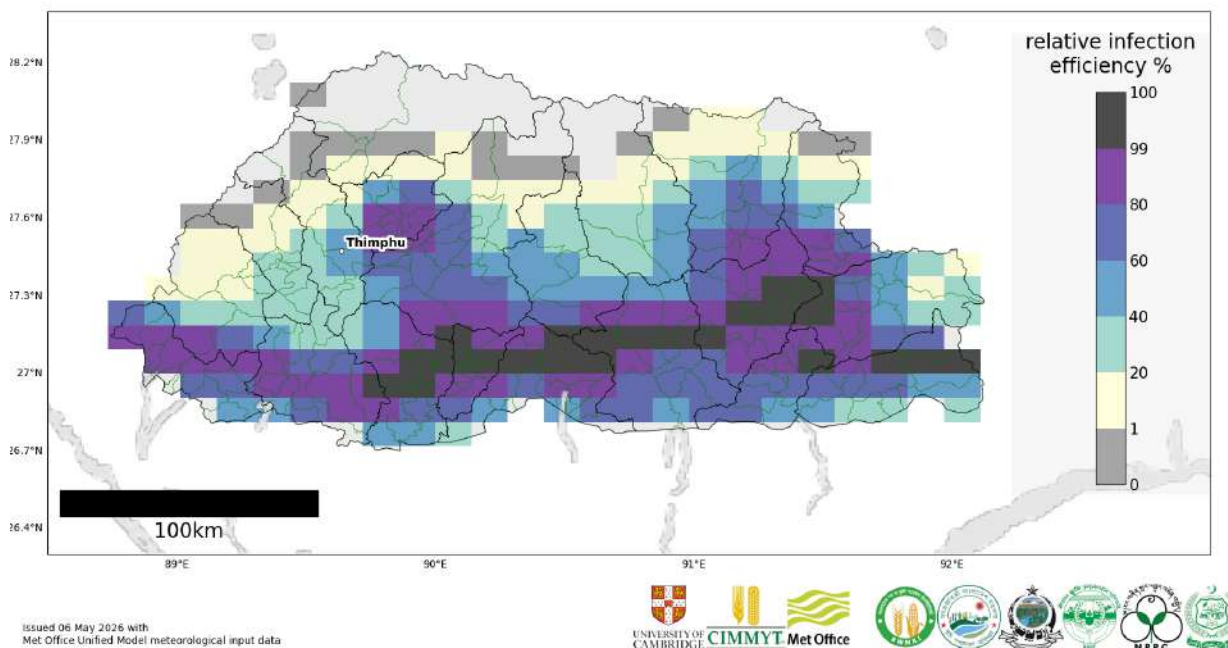
The 20 most impacted districts (spore deposition) per country are presented in the table below.

admin2Name	admin1Name	Leaf rust spores per m ² per week
Talo	Punakha	3700
Chhubu	Punakha	2500
Guma	Punakha	2000
Toepisa	Punakha	1900
Kabjisa	Punakha	1700
Goenshari	Punakha	1200
Goenkhome	Gasa	580
Toewang	Punakha	440
Dzoma	Punakha	380
Phangyuel	Wangduephodrang	380
Lingmukha	Punakha	380
Bapisa	Punakha	330
Thedtsho	Wangduephodrang	260
Shengabjimi	Punakha	260
Nahi	Wangduephodrang	240
Gasetsho Gom	Wangduephodrang	140
Bjena	Wangduephodrang	99
Goenkhatoe	Gasa	93
Chang	Thimphu	90
Kazhi	Wangduephodrang	83

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Risk of infection: Current forecast (6 – 11 May) indicates high infection efficiency across southern areas, central valleys (Punakha) and eastern areas.

Infection efficiency of Wheat **Leaf rust** spores 2026-05-06-00:00 - 2026-05-12-00:00 (UTC)



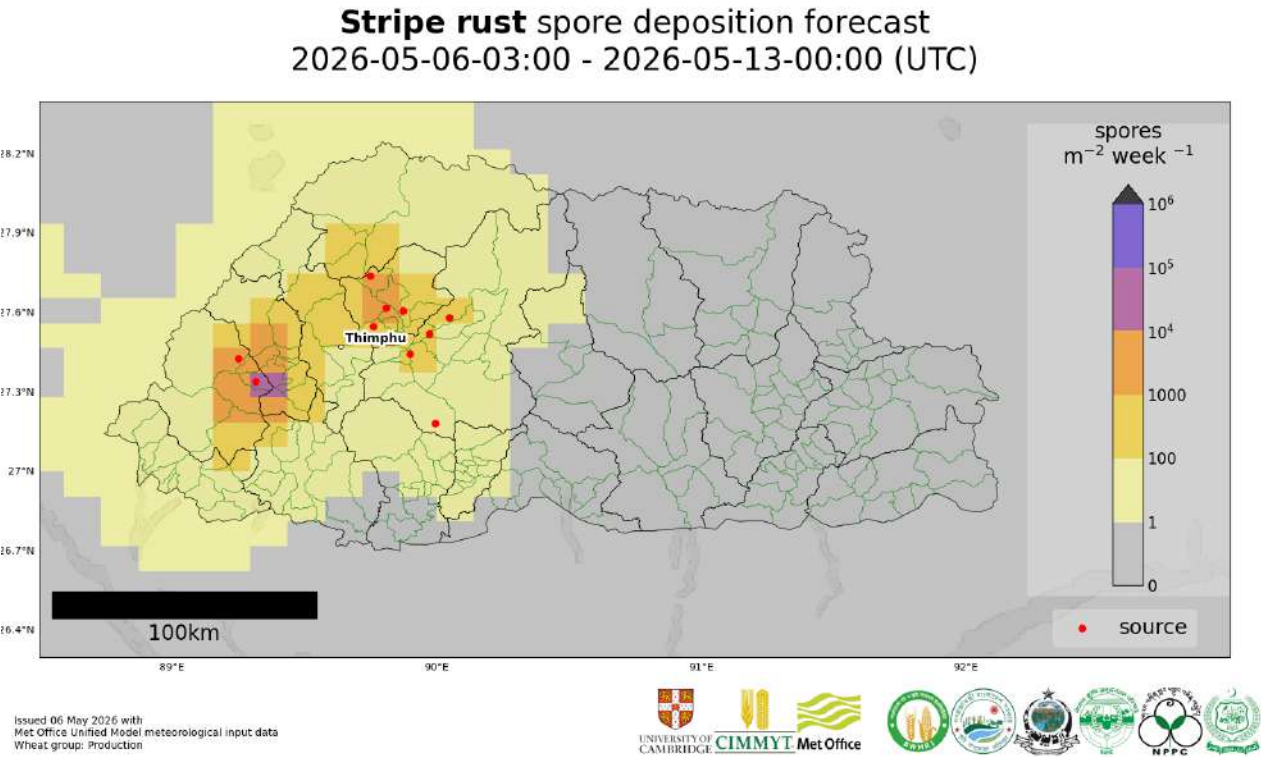
Map 5: Leaf rust suitability for infection forecast Bhutan 06 May - 11 May 2026

The 20 most impacted districts (infection efficiency) per country are presented in the table below.

admin2Name	admin1Name	RIE_leaf_rust_%
Shemjong	Tsirang	100
Narang	Monggar	100
Gosarling	Tsirang	100
Chaskhar	Monggar	100
Tsirangtoe	Tsirang	100
Patakla	Tsirang	99
Phuentenchhu	Tsirang	99
Nanong	Pemagatshel	99
Thangrong	Monggar	98
Balam	Monggar	98
Udzorong	Trashigang	98
Drepung	Monggar	97
Lajab	Dagana	97
Mongar	Monggar	97
Chhali	Monggar	97
Kalidzingkha	Dagana	96
Drametse	Monggar	96
Lumang	Trashigang	96
Khipisa	Dagana	95
Thrimshing	Trashigang	95

Stripe rust

Dispersal: Current forecast (06 May - 12 May) indicates dispersal in a generally northerly direction. Most spore deposition forecast in Paro, Haa and Punakha valleys.



Map 6: Stripe rust spore deposition forecast Bhutan 06 May - 12 May 2026

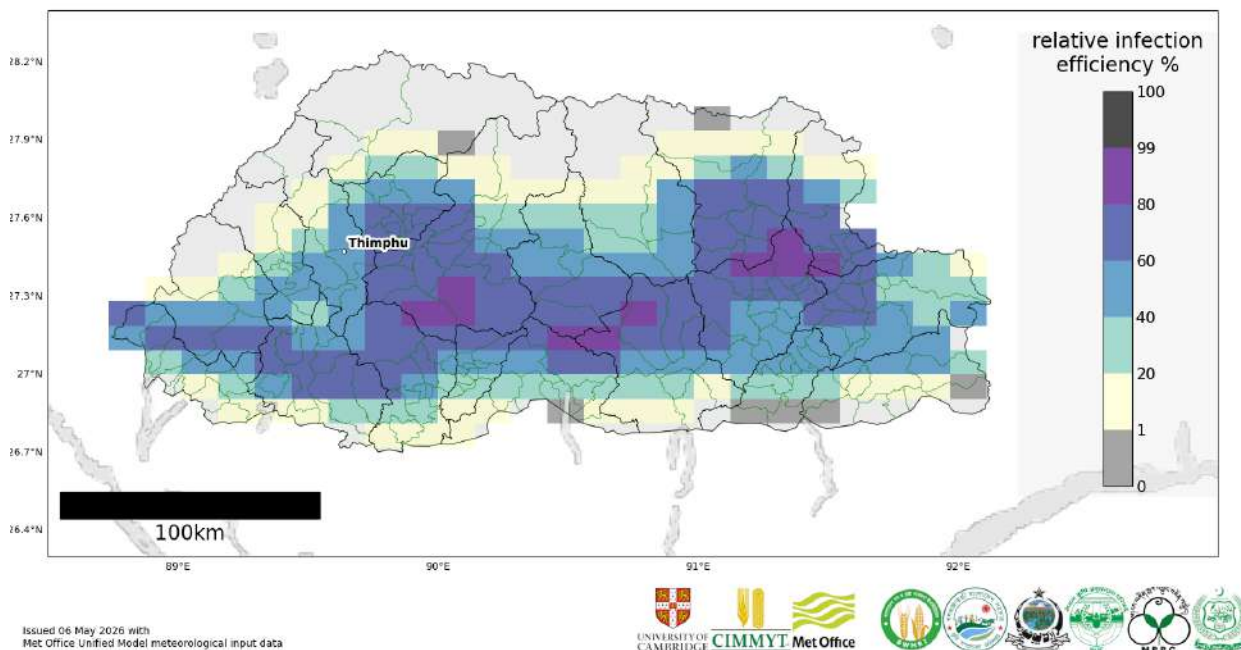
The 20 most impacted districts (spore deposition) per country are presented in the table below.

admin2Name	admin1Name	Stripe rust spores per m ² per week
Lungnyi	Paro	12000
Naja	Paro	9800
Uesu	Haa	9500
Katsho	Haa	9500
Shapa	Paro	9000
Doga	Paro	7400
Lamgong	Paro	5700
Sama	Haa	5500
Hungrel	Paro	4800
Wangchang	Paro	4800
Talo	Punakha	3800
Dopshari	Paro	3200
Chhubu	Punakha	2500
Doteng	Paro	2300
Guma	Punakha	2300
Toepisa	Punakha	2000
Kabjisa	Punakha	1800
Tsento	Paro	1100
Goenshari	Punakha	1000
Phangyuel	Wangduephodrang	760

Wheat rust advisory #5 2026

Risk of infection: Current forecast (6 – 11 May) indicates high infection efficiency across most mid hill areas of Bhutan and central valleys (Punakha) and eastern areas.

Infection efficiency of Wheat **Stripe rust** spores 2026-05-06-00:00 - 2026-05-12-00:00 (UTC)



Map 7: Stripe rust suitability for infection forecast Bhutan 06 May - 11 May 2026

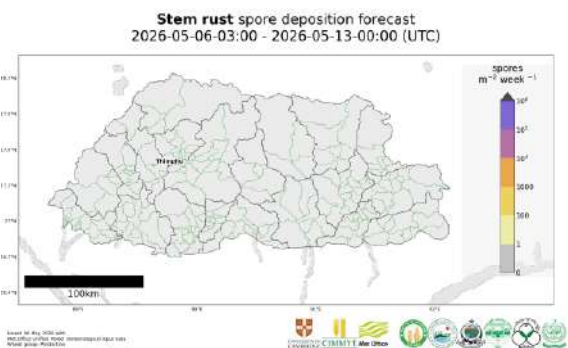
The 20 most impacted districts (infection efficiency) per country are presented in the table below.

admin2Name	admin1Name	RIE_stripe_rust_%
Tsenkhar	Lhuentse	80
Tsakaling	Monggar	79
Balam	Monggar	78
Shermung	Monggar	78
Drametse	Monggar	78
Ruepisa	Wangduephodrang	77
Daga	Wangduephodrang	77
Gasetsho Gom	Wangduephodrang	77
Nahi	Wangduephodrang	76
Thedtsho	Wangduephodrang	76
Korphu	Trongsa	76
Tsamang	Monggar	75
Bjena	Wangduephodrang	75
Phangyuel	Wangduephodrang	74
Dzoma	Punakha	74
Minjay	Lhuentse	74
Lingmukha	Punakha	74
Bapisa	Punakha	74
Ngatshang	Monggar	73
Athang	Wangduephodrang	73

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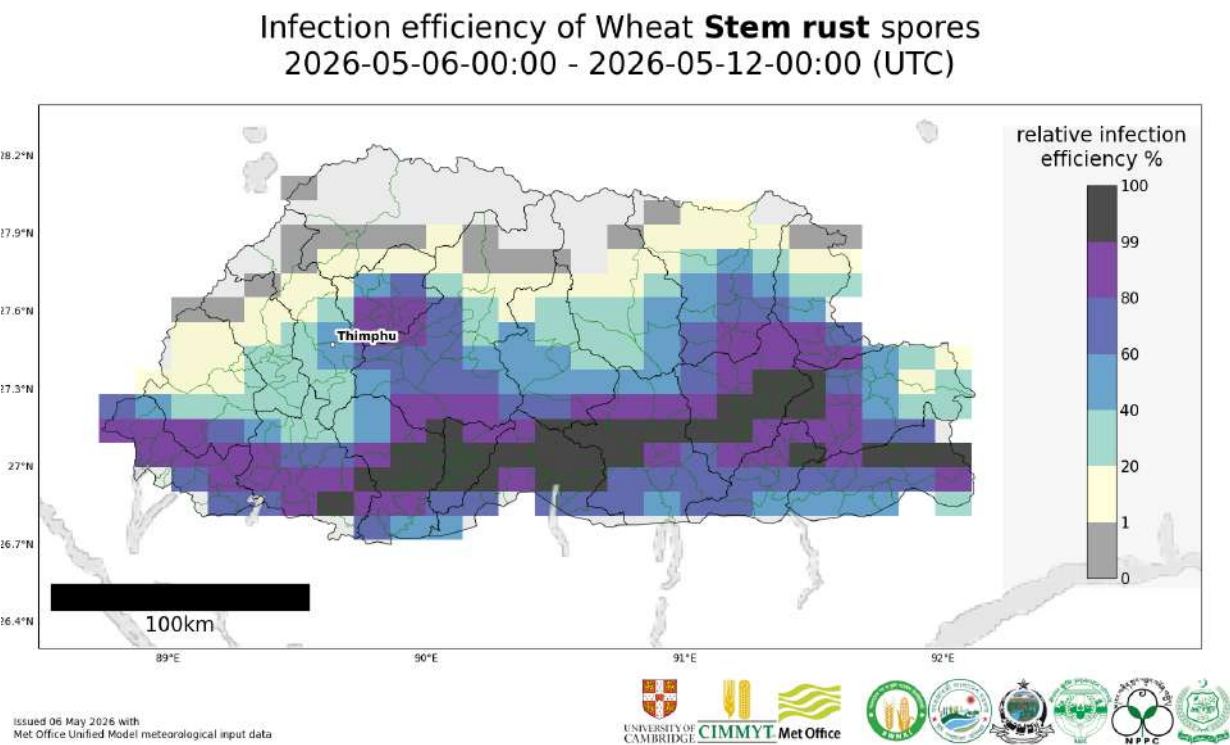
Stem rust

Dispersal: Current forecast (06 May - 12 May) indicates no dispersal as no reports of stem rust.



Map 8: Stem rust spore deposition forecast Bhutan 06 May - 12 May 2026

Risk of infection: Current forecast (6 – 11 May) indicates high suitability across southern areas, central valleys (Punakha) and eastern areas.



Map 9: Stem rust suitability for infection forecast Bhutan 06 May - 11 May 2026

The 20 most impacted districts (infection efficiency) per country are presented in the table below.

admin2Name	admin1Name	RIE_stem_rust_%
Rangthangling	Tsirang	100
Dunglegang	Tsirang	100
Tsholingkhoh	Tsirang	100
Chaskhar	Monggar	100

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Drugyelgang	Dagana	100
Gosarling	Tsirang	100
Shemjong	Tsirang	100
Tsangkha	Dagana	100
Kikorthang	Tsirang	100
Tsirangtoe	Tsirang	100
Barzhong	Tsirang	100
Narang	Monggar	100
Mendrelgang	Tsirang	100
Phuentenchhu	Tsirang	99
Patakla	Tsirang	99
Nanong	Pemagatshel	99
Balam	Monggar	98
Drepung	Monggar	98
Udzorong	Trashigang	98
Thangrong	Monggar	98