

# Survey

## Survey of Chickpea Diseases in Myanmar

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Chickpea and pigeonpea are important grain legume crops in Myanmar. The area under chickpea cultivation is 200000 ha. Though there is some information on diseases affecting this crop, no systematic surveys were carried out to determine the losses caused by them. As a part

of Asian Grain Legumes Network (ICRISAT) and Myanmar Agriculture Service (MAS) cooperative work plan, the disease problems of chickpea in Myanmar were surveyed between 6 and 15 Feb 1990. The three major chickpea producing divisions, Mandalay, Sagaing, and Bago in central and lower Myanmar were surveyed. Farmers' fields, demonstration plots in farmers' fields laid out by the extension division, research stations, central and seed farms in these divisions were visited. In 27 townships 39 locations were surveyed (Fig. 1). At each location the number of individual fields in which disease observations were recorded varied from 1 to 5. In each field, the number of total and different diseased plants in a m<sup>2</sup> area at 3-random spots were counted. From these observations the average disease incidence for the locations, divisions, and country were calculated.

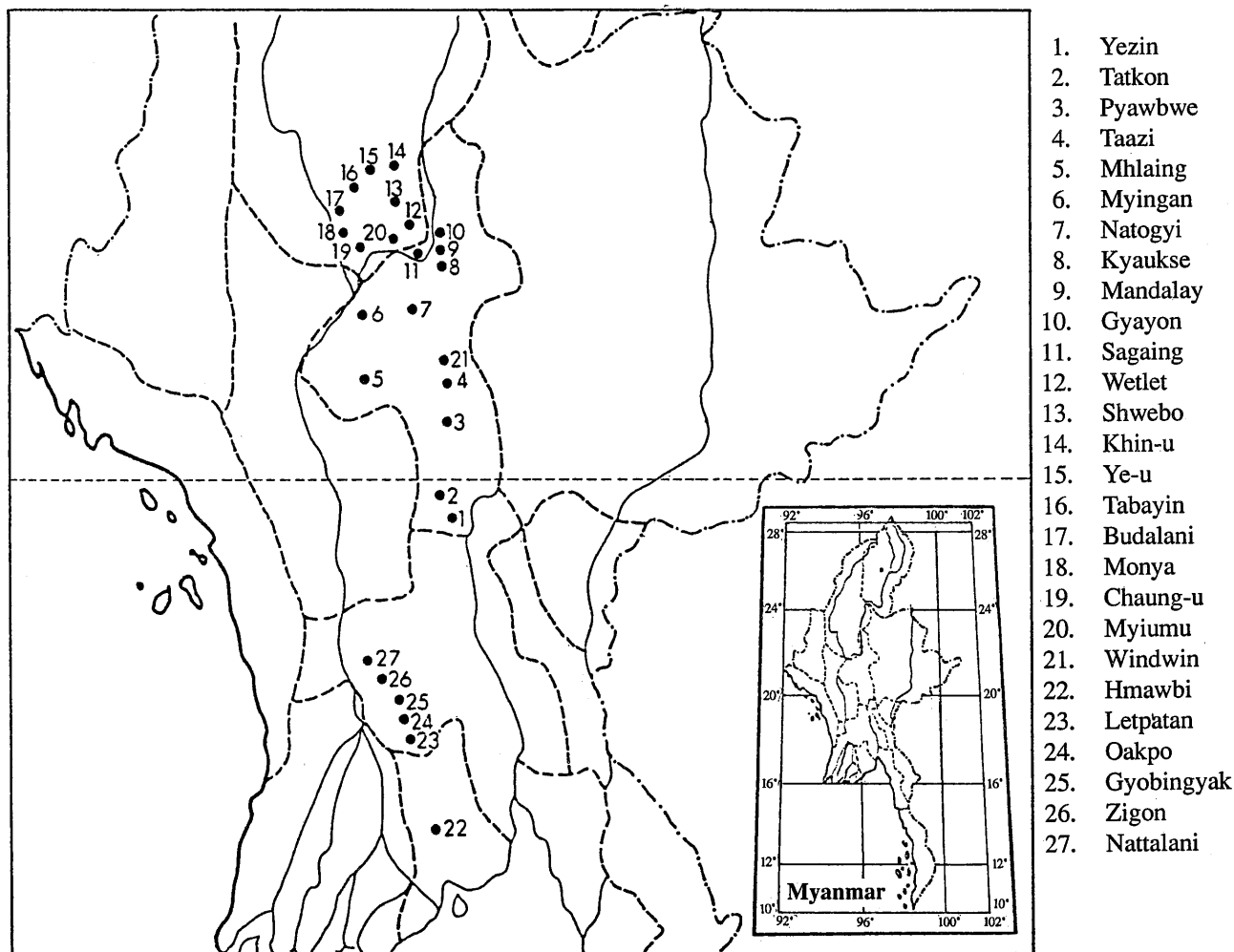


Figure 1. Chickpea locations surveyed in Myanmar, 6-15 Feb 1990.

In chickpea, dry root rot (*Rhizoctonia bataticola*) and fusarium wilt (*Fusarium oxysporum* f.sp *ciceri*) were found to be the major diseases (Table 1). Fusarium wilt incidence in individual fields ranged from 0 to 90% and dry root rot incidence ranged from 0 to 70%. While dry root rot was prevalent throughout the chickpea-growing areas in the country, fusarium wilt was confined to few Vertisol areas in central Myanmar. Further, fusarium wilt was mainly observed in the newly introduced cultivars, such as Yezin 1 (P 436) and Swe Kyemon (K 850 × F

370). Wilt incidence was rarely observed in the widely cultivated local cultivar Karachi. Laboratory and field tests in Myanmar have also confirmed the susceptibility of Yezin 1 and Swe Kyemon to fusarium wilt and resistance of cultivar Karachi. The other diseases observed, but at a very low frequency, were stunt (pea leaf-roll virus), phyllody (mycoplasma), mosaic (alfalfa mosaic virus), and root knot (*Meloidogyne* sp). The incidence of wilt and dry root rot and all other diseases put together was 5%.

**Table 1. Disease and plant parasitic nematode incidence (percentage of infected plants) in chickpea in three divisions of Myanmar (6-15 Feb 1990).**

Division	No. of townships visited	No. of locations surveyed	Total area of the fields surveyed (ha)	Disease and nematode incidence (%)									
				Fusarium wilt	Dry root rot	Other root rots	Stunt	Phyllody	Mosaic	Root-knot nematode	Lesion nematode	Total	
Mandalay	13	19	32	0.51 (0.1-20.0) <sup>1</sup>	2.17 (0-25.0)	0.06 (0-0.5)	0.63 (0-10.0)	0.03	0.03	0.03	0.63 (0.1-10.0)	0.0	4.06
Sagaing	9	14	80	3.04 (0.0-90.0)	4.86 (0-70.0)	0.001	0.01	0.0	0.005	0.01	0.01	0.01	7.93
Bago	5	6	32	2.32 (0.1-20)	0.72 (0-5.0)	0.06 (0-0.1)	0.004 (0-0.01)	0.0	0.002	0.0	0.001	0.001	3.11
Average				1.96	2.58	0.02	0.31	0.01	0.01	0.01	0.21	0.003	5.03

1. Figures in parentheses are ranges of disease incidence in different fields.