

# IDENTIFYING PESTS AND DISEASES IN VEGETABLE FARMING SYSTEMS IN SA PA AND BAC HA

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**Objective:** To identify the occurrence of diseases and pests associated with vegetables in three farming systems (Vegetable Only; Vegetable – Rice; and Vegetable – Temperate Fruit) in Sa Pa and Bac Ha.

**Field surveys** were conducted in May 2014, October 2014, April 2015, November 2015.

**Methodology:** Important vegetable crops in the three farming systems were surveyed for pests and diseases. Symptoms of disease and pest damage were recorded and samples were collected for laboratory identification.

## Symptoms of the most common diseases



Cabbage field infested with black rot



Severe downy mildew on cucumber



Severe Rhizoctonia rot on leafy Brassica



Lettuce with Rhizoctonia rot



Symptoms of club root on cabbage



Symptoms of club root on cai meo



Cabbage white damages



Sclerotinia head rot on cabbage

**Table 1. List of major vegetable diseases and pests in Vegetable Only system**

NO.	CROP	DISEASE/PEST	CAUSAL AGENT	PLACE
1	Cabbage	Sclerotinia head rot	<i>Sclerotinia sclerotiorum</i>	Bac Ha
		Collar root	<i>Rhizoctonia solani</i>	Bac Ha
		Club root	<i>Plasmodiophora brassicae</i>	Sa Pa
		Downy mildew	<i>Peronospora parasitica</i>	Sa Pa, Bac Ha
		Leaf spot	<i>Alternaria spp.</i>	Sa Pa, Bac Ha
		Black rot	<i>Xanthomonas campestris</i> pv. <i>Campestris</i>	Sa Pa, Bac Ha
		Striped flea beetle	<i>Phyllotreta vitata</i>	Sa Pa, Bac Ha
		Cabbage white	<i>Pieris rapae</i>	Sa Pa, Bac Ha
		Diamondback moth	<i>Plutella xylostella</i>	Sa Pa, Bac Ha
		Slug	<i>Unidentified</i>	Sa Pa
2	Choy sum	Club root	<i>Plasmodiophora brassicae</i>	Sa Pa
		Striped flea beetle	<i>Phyllotreta vitata</i>	Bac Ha, Sa Pa
		Cabbage white	<i>Pieris rapae</i>	Bac Ha, Sa Pa
3	French bean	Leaf spot	<i>Cercospora sp.</i>	Sa Pa
4	H'Mong mustard	Club root	<i>Plasmodiophora brassicae</i>	Bac Ha, Sa Pa
		Flea beetle	<i>Phyllostreta sp.</i>	Bac Ha, Sa Pa
5	Snow peas	Root rot	<i>Rhizoctonia solani</i>	Bac Ha
		Leaf spot	<i>Ascochyta sp.</i>	Bac Ha
6	Spring onions	Rust	<i>Puccinia allia</i>	Bac Ha
		Leaf blight	<i>Stemphylium sp.</i>	Bac Ha
		Anthracnose	<i>Colletotrichum sp.</i>	Bac Ha
		Beet armyworm	<i>Spodoptera exigua</i>	Bac Ha
7	Lettuce	Root rot	<i>Rhizoctonia solani</i>	Bac Ha
		Leaf spot	<i>Cercospora lactucae</i>	Bac Ha

**Table 2. List of major vegetable diseases and pests in Vegetable – Rice system**

NO.	CROP	DISEASE/PEST	CAUSAL AGENT	PLACE
1	Cabbage	Collar rot	<i>Rhizoctonia solani</i>	Bac Ha, Sa Pa
		Downy mildew	<i>Peronospora brassicae</i>	Bac Ha, Sa Pa
		Cabbage white	<i>Pieris rapae</i>	Bac Ha, Sa Pa
		Diamondback moth	<i>Plutella xylostella</i>	Bac Ha, Sa Pa
		Striped flea beetle	<i>Phyllostreta vitata</i>	Bac Ha, Sa Pa
3	Kohlrabi	Collar rot	<i>Rhizoctonia solani</i>	Bac Ha, Sa Pa
		Beet armyworm	<i>Spodoptera exigua</i>	Bac Ha, Sa Pa
4	Pumkin	Downy mildew	<i>Pseudoperonospora cubense</i>	Bac Ha
		Powdery Mildew	<i>Erysiphe cichorearum</i>	Bac Ha
5	Chinese cabbage	Sclerotium rot	<i>Sclerotium rolfsii</i>	Bac Ha
		Collar root rot	<i>Rhizoctonia solani</i>	Bac Ha
		Black beetle	<i>Allissonotum impressicolle</i>	Bac Ha

**Table 3. List of major vegetable diseases and pests in Vegetable – Temperate fruit system**

NO.	CROP	DISEASE/PEST	CAUSAL AGENT	PLACE
1	Cucumber	Downy mildew	<i>Pseudoperonospora cubensis</i>	Bac Ha
		Powdery mildew	<i>Erysiphe cichorearum</i>	Bac Ha
		Black cutworm	<i>Agrotis ypsilon</i>	Bac Ha
2	Cabbage	Black rot	<i>Pseudomonas campestris</i> pv. <i>Campestris</i>	Bac Ha, Sa Pa
3	Beans	Leaf spot	<i>Cercospora sp.</i>	Bac Ha
		Black stink bug	<i>Alydus calcaratus</i>	Bac Ha
4	Mint	Root rot	<i>Rhizoctonia solani</i>	Bac Ha