



KOBE 1.2 SLTM

*Kobe 1.2SLTM – A Novel Bio-Fungicide/
Bactericide / Viricide for
Tomato Crop Protection*

**Onze Livre BV**



Kobe 1.2 SL™ – A Novel Bio-Fungicide

- ▶ Kobe 1.2SL™ contains Chrysophanol Parietin, extracted from the plant *Rheum officinale* Bail
- ▶ A novel solution for effective fungal, bacterial and viral disease management.

Tomato (*Solanum lycopersicum*) is grown worldwide for its edible fruits and is one of the most common vegetables.

Tomato plants and fruits suffer from a wide range of diseases, among them Damping-off, Early & Late Blight, Powdery mildew, Bacterial and Viral diseases that can cause significant yield and investment losses if not managed properly.

Kobe 1.2SL™ with its novel mode of action offers effective tomato crop protection throughout the entire growing season.

Kobe 1.2 SL™ – Mode of Action

Kobe 1.2SL™ combined mode of action offers a revolutionary approach for Tomato crop protection. Apart from attacking the pathogen directly, Kobe 1.2SL™ activates the plant's immune system by eliciting the Systemic Acquired Resistance (SAR) of the attacked plant and by inducing the Plant systemic resistance mode of action (ISR). This causes plants to arm their own defence against the attacking pathogens.

Kobe 1.2SL™ manipulates the plant to generate complexes of fatty acid, long chains of sugar molecules and phytoalexins that prevent spores, fungus and bacteria from penetrating the plant tissue.

Kobe 1.2SL™ consists of natural substances extracted by a unique extraction process from the herbal plant *Rheum officinale* Bail and by a unique isolation method from the roots of the plant *Rumex crispus*.

Rate of Application

Crop	Disease	Application Rate
Tomato	Viral – PVY*, ToMV**, TSWV***, TYLCV****	1.0-2.0 lt per Ha
	Fungal Diseases	
	Bacterial Diseases	

*Potato Virus Y,

**Tomato Mosaic Virus,

***Tomato Spotted Wilt Virus and

****Tomato Yellow Leaf Curl Virus

Note

- ▶ Apply evenly and thoroughly prior to the appearance of the disease or when it first appears.
- ▶ Repeat at 10 day intervals when necessary.
- ▶ Use higher rate in case of actual appearance of the disease in the field.



Downey Mildew



Powdery Mildew



Late Blight



Late Blight



Most important Fungal Diseases and their characteristics

Common Name	Scientific Name	Notes on The Disease	Kobe 1.2SL™ Application Rate
Foliar & Crop Diseases			
Powdery Mildew	<i>Oidium neolycopersici, Leveillula taurica</i>	Very common disease, favoured by high humidity levels.	Apply Kobe 1.2SL™ as a foliar spray at a rate of 1.0-2.0 lt per Ha
Downy Mildew / Late Blight	<i>Phytophthora infestans</i>	Highly destructive. Late Blight infects the leaves, the stem as well as the tomato fruit.	
Early Blight	<i>Alternaria solani</i>	The pathogen produces distinctive "bull's-eye" patterned leaf spots and cause stem lesions and fruit rot on tomato.	
Soil Borne Diseases			
Damping Off	<i>Phytophthora, Pythium and Rhizoctonia spp.</i>	Seedlings affected by damping-off fail to emerge or fall over and die soon after emergence. Stems usually have a dark, shriveled portion at the soil line.	Apply Kobe 1.2SL™ either as a foliar spray or through fertigation at a rate of 1.0-2.0 lt per Ha
Fusarium and Verticillium wilt	<i>Fusarium oxysporum f. sp. lycopersici and Verticillium dahliae</i>	Verticillium wilt is difficult to distinguish from Fusarium wilt. Positive identification may require cultivating the fungus in a laboratory.	
Alternaria stem canker	<i>Alternaria alternata f. sp. lycopersici</i>	Symptoms appear on stems, leaves, and fruit. Dark brown to black cankers with concentric zonation occur on stems near the soil line or aboveground.	

Most important Bacterial Diseases and they characteristics

Common Name	Scientific Name	Notes on The Disease	Kobe 1.2SL™ Application Rate
Bacterial wilt	<i>Ralstonia solanacearum</i>	Very difficult to manage soil borne bacterial disease.	Apply Kobe 1.2SL™ either as a foliar spray or through fertigation at a rate of 1.0-2.0 lt per Ha
Bacterial spot	<i>Xanthomonas campestris pv. vesicatoria</i>	Bacterial spot develops on both seedlings and mature plants.	
Bacterial Speck	<i>Pseudomonas syringae pv. Tomato</i>	Bacterial speck appears as dark brown to black lesions of various sizes and shapes on leaves, fruit and stems.	
Bacterial Canker	<i>Clavibacter michiganensis pv. michiganensis</i>	Tomato is the most important host of the pathogen. On young plants symptoms consist of poor growth and temporary wilting of branches	

Tomato - Bacterial Diseases

Bacteria are microscopic single-celled organisms. Bacteria multiply rapidly by simple cell division and absorb nutrients from their immediate environment.

Bacterial diseases of tomato are the most serious and destructive diseases affecting both yield and quality. Under moist field conditions they can cause localized epidemics affecting young developing fruit resulting in total crop losses.

Kobe 1.2SL™ with its novel mode of action as an SAR and ISR inducer, offers effective tomato crop protection throughout the growing period.



Bacterial Wilt of Tomato

Major Viral Diseases and their characteristics

Common Name	Scientific Name	Notes on The Disease	Kobe 1.2SL™ Application Rate
Tomato Yellow Leaf Curl	<i>TYLCV (Tomato Yellow Leaf Curl Virus)</i>	Transmitted primary by <i>Bemisia</i> whitefly species.	Apply Kobe 1.2SL™ as a foliar spray at a rate of 1.0-2.0 lt per Ha
Tomato spotted wilt	<i>TSWV (Tomato spotted wilt virus)</i>	Transmitted mainly by Thrips.	
Mosaic Viruses	<i>TMV (Tobacco Mosaic Virus)</i> and <i>ToMV (Tomato Mosaic Virus)</i>	Mechanically transmitted.	
Potato Virus Y	<i>PVY (Potato Virus Y)</i>	Transmitted mainly by Aphids.	

Tomato Yellow Leaf Curl Virus



Tomato Spotted Wilt Virus



Tomato Mosaic Virus



Potato Virus Y



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Supplier:

KOBE 1.2 SL™

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