

# AEROSOLS

IN MODERN GREENHOUSE PLANT PROTECTION



## **Impressum**

pulsFOG® Dr. Stahl & Sohn GmbH  
Abigstraße 8  
D-88662 Überlingen  
Telefon: +49 75 51 9261 0  
Telefax: +49 75 51 9261 61  
E-Mail: [info@pulsFOG.com](mailto:info@pulsFOG.com)  
Internet: [www.pulsFOG.com](http://www.pulsFOG.com)

Managing Director: Werner Stahl  
County Court: Amtsgericht Überlingen  
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# The Alternative: Ultra-fine fog droplets

The task of controlling pests arises with every cultivation period. The traditional method using a sprayer is unpopular because it is labour intensive and often detrimental to health. Up to 80 % of the sprayed liquid runs off the plants and penetrates the ground, affecting the soil fauna with its useful organisms and also the ground water. Frequently, spraying stains deteriorate valuable crops, and high residues of pesticides often affect the quality of vegetables. Last but not least there are conflicting aims when using a sprayer due to the high amount of water required and the aim of controlling fungal diseases.

## Low Volume Technique

If you converted one litre of a liquid into droplets of 10 µm diameter and distributed the resulting number of droplets evenly on to an area of 1 ha,

a theoretical coverage of 19,000 droplets/cm<sup>2</sup> would result.

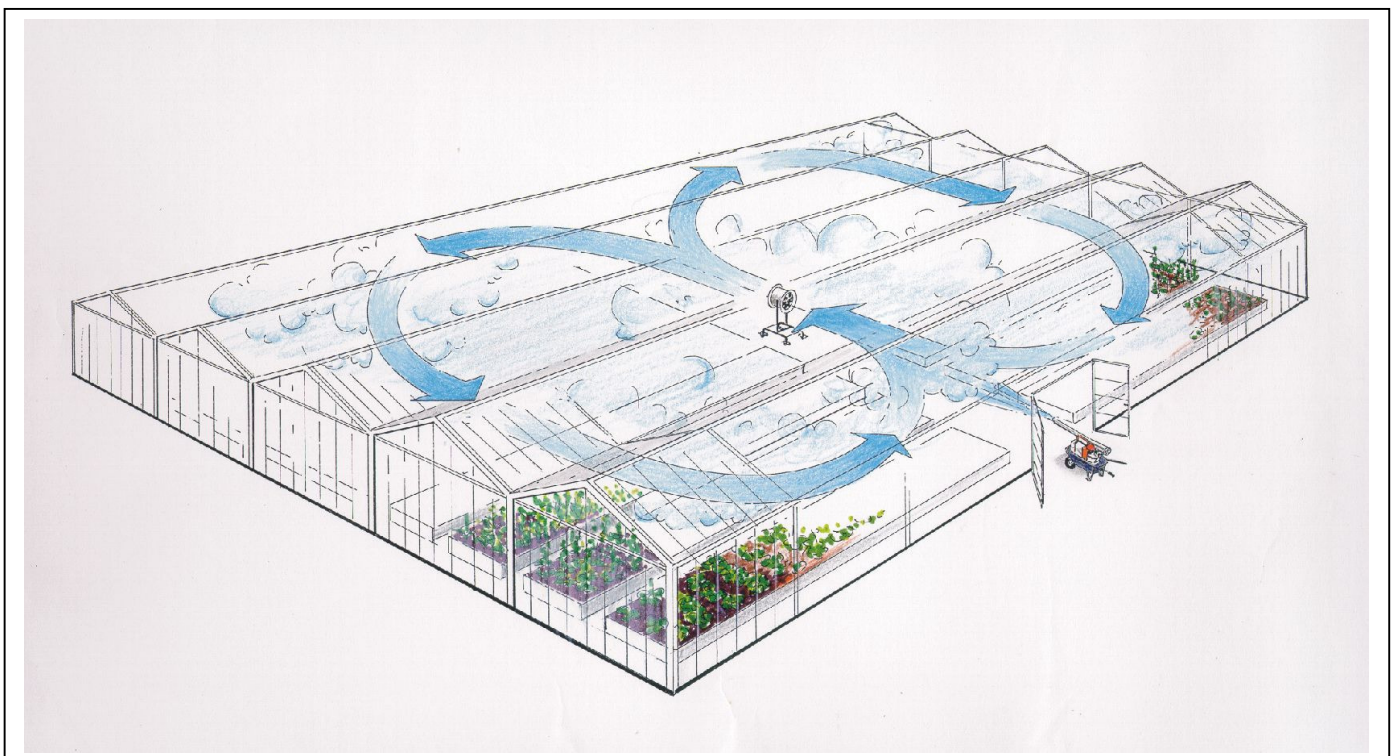
This mathematic consideration explains why the total volume of the solution may be reduced to 1/100 without losing its effectiveness in controlling pests. Using the pulsFOG® equipment, volumes of 1,5 – 3,0 l / 1000 m have proved to be effective.

## "Dual Action" of Deposition and Space Fumigation

The aim of **space fumigation** is controlling flying insects such as thrips, whitefly, leaf miner, which are caused to fly up at the same time ("flushing" effect). This is achieved by the action of the gas of certain pesticides on the pests hiding for example on lower leaf surfaces. The insects then become irritated, slip out of their hiding place and receive a lethal dose from air-borne fog droplets.

This effect of space fumigation is produced when stable aerosols smaller than 10 µm are generated.

The aim of **deposition treatment** is to produce a dense residue deposit on the leaf surfaces in order to control eating, sucking, and mining pests and as a preventive action against fungal diseases. Deposition treatment is particularly suitable when using systemic agents, foliage fertilizers and growth retardants. Deposition fogging requires droplet sizes of 10-30 µm. The big advantage of the pulsFOG® fogging technique is that the aerosols with a droplet size of 1-30 µm are merely blown into the air over the crop, settling evenly onto the crop due to their intrinsic properties. If horizontal fans are available the fogger can also be used from a stationary position at the door. The aerosols are then dispersed by air circulation.



Modern thermal fog application from the outside in using a fan for the fog distribution inside the greenhouse. This application system allows to supervise the operation from outside. Respect the necessary performance of the fan!

**Evaporation**

A problem of deposition treatment is the rapid evaporation of the aerosols. Even under a medium relative humidity of 80 % a water droplet of 50 µm diameter has a life span of only 12.5 seconds. When the water portion of a droplet evaporates, its weight and size decreases to such an extent that settling onto the foliage is no longer ensured. This means that it loses its deposition treatment capability.

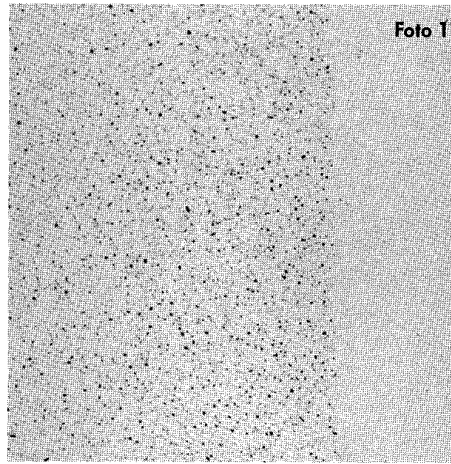
Chelating (e.g. in nutriFOG®) and other dispersal agents such as “VK-2 Spezial” are able to retard the evaporation of the water long enough to stabilize the droplet size until it reaches the plant.

**Dispersal Agents**

VK-2 special is a neutral, approved fogging dispersal agent designed to retard evaporation. It produces a clearly visible white fog. VK-2 has good plant tolerance properties, however, it should not be applied to Saint Paulia, Gloxinia, Impatiens, Geranium or Begonia while they are in bloom as flower damage can occur. Under these circumstances nutriFOG® can be used as it provides a better plant tolerance. nutriFOG® is a highly effective foliage fertilizer (NPK 10-3-3) which promotes the formation of fog. It is applied primarily in combination with pesticides. nutriFOG® strengthens the resistance and health of the plants, which may be affected by the use of pesticide agents.

**Dosage**

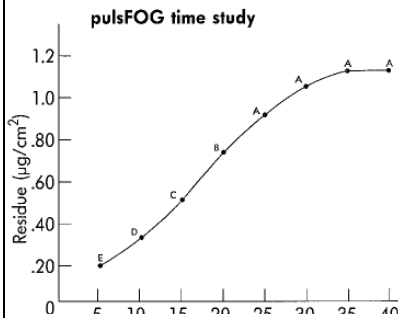
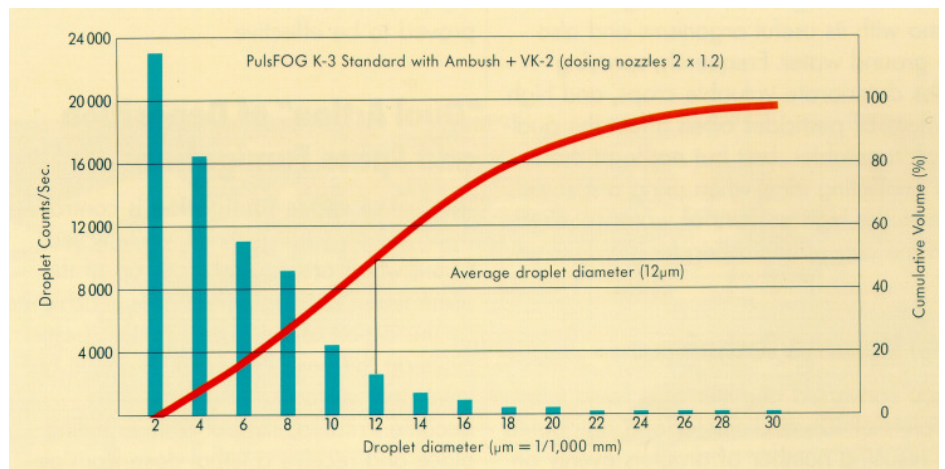
The pesticide rate per 1,000 m<sup>2</sup> of greenhouse area is calculated from a spray suspension of 100-300 litres of water. If the chemical label indicates only the spraying concentration (e.g. 0,1%), the initial dosage per 1,000 m<sup>2</sup> can be determined from the table on the next page. Initially, use only the minimum dosage for crops in bloom in order to acquaint yourself with the method. In the case of unsatisfactory results the dosage may be gradually increased up to the maximum. The application of rates between medium and maximum is restricted to plants with a high tolerance and showing no blooms. High temperature climatic conditions allow only low pesticide rates. The water volume for liquid formulations is 1,5 -2 litres/1,000 m<sup>2</sup>. With wettable powder use the higher water rate of 2-3 liters. Add in the end either 250-500 ml VK-2 special or nutriFOG® dependent to the plant compatibility.



Fog residue, 10 times enlarged

500 µm	
250 µm	
100 µm	
50 µm	

Droplets in natural size



**Proof of More Environmental Protection**

The pulsFOG® time study shows the result of 5-minute-interval sampling from the fogged greenhouse. The residue already reaches its peak density after 35 minutes. In conjunction with the laser beam test, this proves that far more than 95 % of the fogged product settles within half an hour. The rest of 5 % remains airborne. Therefore the greenhouse must be vented before entering.

Droplet Ø (µm)	During fogging	0	2	10	20	30 minutes
2	3250	6202	1833	1744	1278	374
4	3624	3548	93.1	56	5.6	0.9
6	1136	595	29.5	30	3.2	0.3
8	254	164.2	4.8	2.7	0.3	0.1
10	86	66.6	1.8	-0-	-0-	-0-
12	15	19	0.6	0.3	-0-	-0-
14	7.2	11.8	-0-	-0-	-0-	-0-
16	2.4	1.2	-0-	-0-	-0-	-0-
18	-0-	0.6	-0-	-0-	-0-	-0-
20	-0-	0.6	-0-	-0-	-0-	-0-
22	-0-	-0-	-0-	-0-	-0-	-0-
VMD (µm)	4.5	3.9	2.5	2.4	2.1	2.0

Number of droplets found in the air of a greenhouse by means of a thin laser beam during and up to 30 minutes after fogging, with simultaneous classification of droplet sizes (2-µm-intervals).



**Pesticide Distribution and working time**

Utilizing the throwing range of an applicator the fog is evenly dispersed while walking backwards through the greenhouse. With a little skill the operator is able to avoid any exposure to the pesticide due to the fact that the fog is propelled well away from the operator by the throwing power of the applicator. A full hectare of greenhouse area can be treated with a rapid fogging system by one person within an hour at a working rate of 3-5 min./1,000 m<sup>2</sup>, using a K-30 thermal fogger or a TracFOG



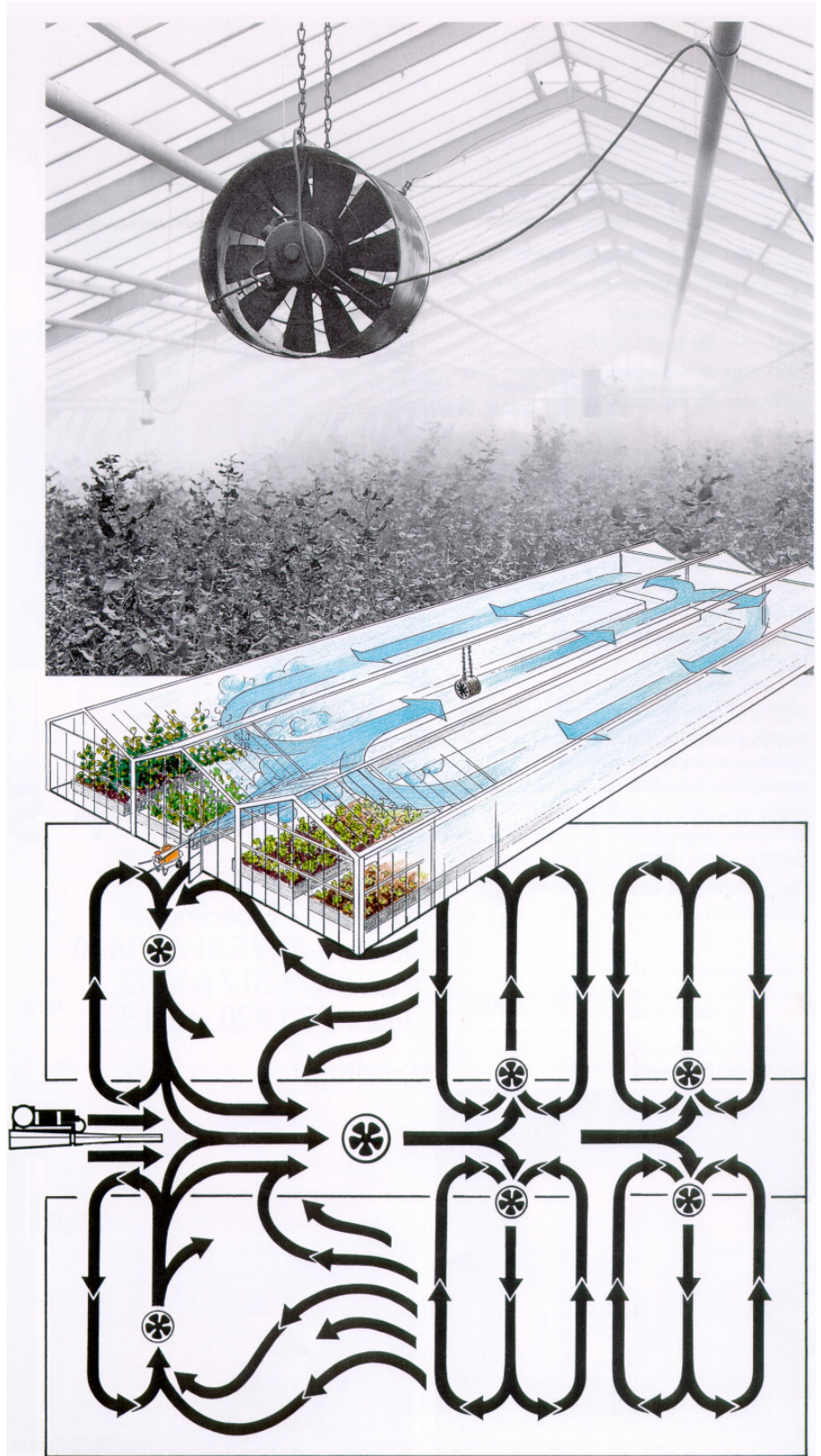
**Stationary Fogging**

The ability of aerosols (< 20 µm) to stay airborne for longer periods can also be utilized for dispersion by air circulation facilities. The fans required for this purpose should be arranged horizontally and should blow the air directly into the free air space. Fan speed should not exceed 900 r.p.m. in order to prevent the droplet from agglomerating and falling. The size of a fan may be determined according to the following guidelines:

1. Recirculation of the greenhouse air volume within 30 - 60 minutes.
2. A maximum greenhouse area of 1,500 m<sup>2</sup> per fan, in the case of low greenhouses a maximum area of 1,000 m<sup>2</sup>. The thermal foggers should be fitted with dosing nozzles for finer droplets (such as those used for water fogging).

Stationary fogging facilities are suitable for automatic operation. Larger surface areas can be treated when installing additional fans. It must, however, be mentioned that stationary fogging in general can only be carried out successfully using liquid agents and those with gas and "flushing" effects. Stationary fogging is therefore primarily suitable for room treatment against flying pests. It is not recommended for pesticides formulated as wettable powders.

# FOG and go...



## Thermal Fogger or Cold Fogger ?

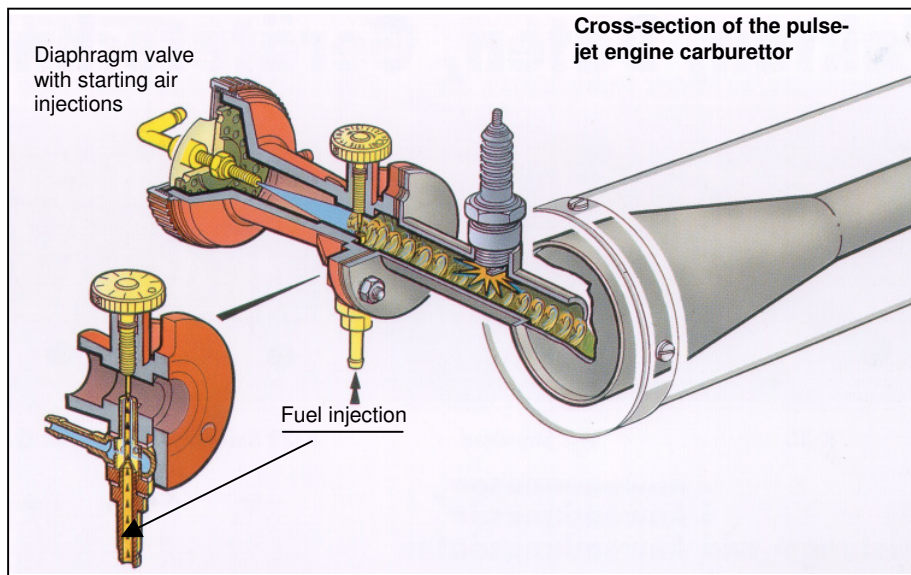
The question of the advantages of thermal or cold foggers can be reduced to the following factors: purchasing costs, application time and noise emission. Thermal foggers are relatively inexpensive and work at the high application speed of 3-5 minutes per 1,000 m<sup>2</sup> greenhouse area which means that it is possible to treat several greenhouses in one evening. The larger types are especially suitable for the application of wettable powder, for fungicide treatment as well as for any other liquid agent. Most of the successful applications with foggers which were reported in particular during the past 40 years in controlling thrips, whitefly, leaf miner, powdery mildew and botrytis were achieved with thermal fogger.

**Thermal fogger** work according to the pulse-jet principle. These engines do not contain any moving parts (except carburetor diaphragm). The bottle-shaped combustion chamber is empty and opens directly into the exhaust pipe. A resonating diaphragm on the carburetor ensures the controlled pulsating combustion of the fuel in the combustion chamber. The agent of pesticide is injected into the exhaust jet at the end of the exhaust pipe and thermopneumatically atomized, taking advantage of its kinetic and thermal energy. The nozzle system provides a larger drill hole than other fog equipment retarding undesired choking by the pesticide.



Thermal FOG

Cold FOG



**Electrical cold fogger** (fan fogger) discharge the produced fog very slowly (fogging speed: 1-2000m<sup>2</sup>/h). They are especially suitable for automatic applications in the night in absence of the operator. The fan builds up an air circulation distributing the aerosols evenly across the indoor surface. WP-formulations increase the risk of blocking the nozzle. An automatic fan fogger operating during the night should not be used with any WP formulations.

The pulsFOG<sup>®</sup> TracFOG and COLFOGGER overcomes these problems with its new nozzle design using more pneumatic power combined with a bigger drill hole. These power foggers allow fast fogging in presence of the operator (fogging speed: 1-2 ha/h)

## Fogging Application Requirements

- Respect the manual of fogging equipment
- Airtight greenhouses with sufficient air space above or between the crops.
- Fog in the evening and when there is less wind outside.
- Avoid the formation of condensing water on the plants, i.e. keep the temperature constant during the night.
- Never fog the crop directly.
- Use stationary fogging only in combination with circulation fans.
- During application within the greenhouse, wear protection suit and gas mask with filter system A<sub>2</sub>B<sub>2</sub>-P<sub>3</sub>.
- Clean the fogging machine after application



Coldfogging with pulsFOG TracFOG or pulsFOG Colfogger

# Facts and Data about Fogging



K-30-STD    K-22-STD    K-10-STD    K-10-SP



K-30-20-BIO

## Performance table

Type		K-10-SP	K-10-STD	K-22-BIO	K-22-STD	K-30-STD	K-30-20-STD	K-30-20-BIO	Trac FOG	Col fogger	Turbo ULV	Observations
Weight, empty	kg	7,1	8,5	11,6	10,4	13,3	15	16	230	150	6,6	K-10 to K-30 portable
Capacity of solution tank(L)		5	9	5	9	9	55	55	100	100	5	Tanks detachable for refilling and cleaning
Capacity of water tank (bio)				5				55	400			
Max. fuel (power) consumption (Amps)	L/h	1,9	1,9	3,8	3,8	7,6	7,6	7,6	NA	16 / 25 A	4,6 A	Fuel consumption varies due to adjustable speed
Combustion chamber volume	300 cm <sup>3</sup>	300 cm <sup>3</sup>	1 l	1 l	2 l	2 l	2 l					Power is calculated from the fuel consumption TracFOG: minimum power of engine
Max.gross engine power HP	24,1	24,1	50,8	50,8	101,6	101,6	101,6	min.15				
kW	17,5	17,5	37,4	37,4	75	75	75		6 / 8	1,0		
kcal/h	15 300	15 300	32 200	32 200	64 400	64 400	64 400					
Dosing nozzle (water+VK2)	1x0,8	1x0,8	2x1,1	2x1,1	2x1,3	2x1,3	2x1,2		1,3	2		These nozzles ensure a droplet spectrum of 1-30 µm
Dosing nozzle for flowers	1x0,7	1x0,7	2x1,0	2x1,0	2x1,2	2x1,1	2x1,1			0,7		
Dosing nozzle for water fog	1x0,7	1x0,7	2x0,9	2x1,0	2x1,1	2x1,0	2x1,0			0,8		
Dosing nozzle for water tank			2x0,8			2x1,0	2x1,0					
VMD (with water + VK-2) µm		20	20	20	20	20	20	25	25	25	variable	With water + VK-2 Spezial
Average flow rate* (L/h)		12	12	25	30	60	60	90	100	20	5	With medium sized dosing nozzles
Effective throwing range with nutriFOG® or VK-2 Spezial (m)		25	25	40	40	60	60	60	50	30	20	At a minimum of 3 m air space above the crop
Effective throwing range mit pure water (m)		15	15	25	25	40	40	40	40	30	15	At a minimum of 3 m air space above the crop
Surface area performance with VK-2 or nutriFOG® (m <sup>2</sup> /h)		6 000	6 000	12 000	15 000	30 000	30 000	30 000	1-2 ha/h	4 000	2 000	Basis: 2 l/ 1 000 m <sup>2</sup> TracFOG: 5 -10l/ 1 000m <sup>2</sup>
Suitable for a greenhouse area up to (m <sup>2</sup> )		2 000	2 500	5 000	5 000	7 500	10 000	10 000	> 10 000	500 – 10 000	2 000	
If individual greenhouses are not smaller than (m <sup>2</sup> )		100	100	300	300	500	500	600	1 000	200	50	

\* flow rate depends on the formulation viscosity (WP or EC), the level in the tank and the nozzle size used. Data show an average flow rate



Turbo ULV with adjustable nozzle



... with folded spraying arms

TracFOG 100



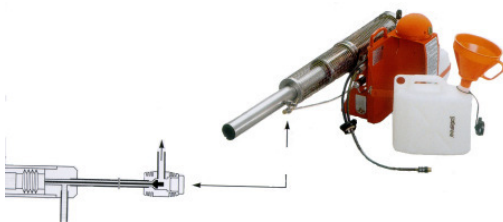
Colfogger



**Useful Accessories**

- (1) pulsFOG® light protection suit
- (2) Horticulture mixing set, including:  
1 x 2 l graduated measure  
1 x 250 ml-graduate measure  
1 pair of chemical resistant rubber gloves  
1 x wooden stirrer
- (3) 5 l cleaning kit
- (4) Fuel measure
- (6) Solution funnel, small
- (7) pulsFOG® tool bag
- (8) Cleaning drill for nozzle
- (9) Gas mask with filter A<sub>2</sub>B<sub>2</sub>-P<sub>3</sub>
- (10) Cleaning brush
- (11) Ear protection
- (12) Spare parts set, small
- (13) Spare parts set, large

**Optional automatic cut off device**  
for the fogging solution to prevent wrong operation during application



**Success with the pulsFOG® fogging method:**

- **Full-scale interior treatment** leaves concealed pests without a chance.
- **No spraying stains** which might deteriorate valuable crops.
- **Working time savings** up to 90 % means improved conditions for preserving health and increased competitiveness.
- **Improved environment protection!** Aerosols do not run off into soil as cohesive liquids do. They neither trickle from the foliage nor penetrate the soil. Soil fauna and ground water are protected. The fogging technique leaves no residuals in fogging tank, which are often disposed of carelessly.
- **Quick degradability** on vegetable crops due to more even dispersion of the droplets ensures consumer protection.

**International experts reports about the pulsFOG® fogging method:**

**IDEA CAME FROM V-ROCKET**

**FARM Equipment NEWS**

**DRAMATIC SAVINGS IN SPRAY**

**DRUG SURVIVAL**

**ALL THE YOU**

**HOWARD BIGBALER Mk2**

**2000e PULSFOG-GASNEVELAPPARAAT GEÏNSTALLEERD**

Dat de Pulsfog-Gasnevelapparaten bijzonder nuttige en kwalitatief hoogstaande apparaten zijn gebleken, die zich een vaste plaats op de moderne tuinbouwbedrijven hebben weten te veroveren, werd deze week nog eens duidelijk, toen de firma Brinkman uit 's-Gravenzande de 2000ste PULSFOG afleverde op het bedrijf van de gebroeders Spruit aan de Anjerweg 10 te Bleiswijk. Deze 2000ste aflevering ging gepaard met overhandiging van een oorkonde en de aanbieding van een seizoen gratis VK-draagstoffen.

Ongeveer 10 jaar geleden heeft BRINKMAN BV te 's-Gravenzande de eerste contacten gezet met dr K. H. Stahl GmbH in Duitsland. Door de levens grote problemen met de witte vlieg, was de noodzaak aanwezig om dit euvel aan te pakken met alle mogelijke middelen. Na enkele proeven bleek al snel dat met de Pulsfog K10 een goede bestrijding mogelijk was. De beschikbare middelen op dat moment waren: Dedevap, Phosdrin, Brifog en Undeen s.p.p. Deze middelen waren met VK-1 draagstof uitstekend te verwerken. Ander...

**FOGGING UNDER GLASS—SPECIAL REVIEW**

**This cheap and flexible method of fumigation may have strong future**

A SPECIAL CORRESPONDENT reports

LIKE MANY other so-called 'new' horticultural techniques fogging machines have been around for some time. The pulse jet principle on which three makes of machines operate has its origins in the second world war V1 rocket unit. It was in the mid '50s that 'bugger' first appeared on the UK glasshouse market. They require specially formulated chemicals and the range of these was limited.

The pulse jet principle is a simple one. In a combustion or explosion chamber a sparking plug fires a fuel/air mixture. The resulting drop in pressure brings in a fresh mixture through a non-return valve. The fuel/air mixture fires again and again the hot exhaust gases move down the tube. So a series of pulses is set up and the machine will continue to operate in this way until turned off. The chemical is fed into the high speed gas flow at the front of the exhaust tube and is broken into small particles which are propelled into the atmosphere as a dense fog.

More powerful machines

Since their early days there has been considerable development in the machines themselves. This has taken the form of more powerful machines suitable for dispersing wettable powders through large glasshouses and in some...

ing down through the crop. There is no increase in humidity. Fogging is best carried out in the evenings and the advantages of leaving the plants dry are obvious. Carrier solutions make it possible to fog a wide range of insecticides.

SN 11 is nearly 4ft. in length, has an output of 2.2 to 6kgal. per hour and costs £269. Standard accessories include flow control jets, carrying strap, filling funnels and spares.

Guernsey enthusiasts



# ULV Application Chart for Greenhouse Pests

## pulsFOG® Dosing Adviser

Trade Product	Active Ingredient	Rate/1000 m <sup>2</sup> or 3000 m <sup>3</sup>					Remarks	
		Minimum** (Starter rate)	Medium (normal rate)	Maximum (pre-tested)	Water (l) +VK-2 special*)	nutriFOG® (alternatively)		
<b>WHITE FLY • ALEURODES • ALEUROIDI • WEISSE FLIEGE</b>								
Ambush	Permethrin 25%	50 ml	60 ml	70 ml	1,5-2,5	250-500 ml	250 ml	
Decis	Deltamethrin 2,5	80 ml	100 ml	120 ml	1,5-2,5	250-500 ml	250 ml	test blossom first!
Ripcord	Cypermethrin 10%	90 ml	120 ml	150 ml	1,5-2,5	250-500 ml	250 ml	
Sumicidin	Fenvalerat 30%	80 ml	100 ml	120 ml	1,5-2,5	250-500 ml	250 ml	
Aktellic 50	Pirimiphos 50%	120 ml	150 ml	180 ml	1,5-2,5	250-500 ml	250 ml	*not on blooming
Tamaron	Methamidophos 60	250 ml	300 ml	350 ml	1,5-2,5	250-500 ml	250 ml	African Violets, Begonium and Pelargonium
Lannate-20 L	Methomyl 20%	300 ml	350 ml	400 ml	1,5-2,5	250-500 ml	250 ml	
Dedevap	Dichlorvos 50%	200 ml	250 ml	300 ml	1,5-2,5	250-500 ml	250 ml	
Orthen	Acephat 50%	150 g	200 g	250 g	2,5	250-500 ml	250 ml	
Spruzit	Pyrethrum 4%	150 ml	200 ml	250 ml	1,5-2,5	250-500 ml	250 ml	** the dosages mentioned here can be reduced for an- other 20% for plants below a size of 25 cm
Parexan	Pyrethrum 4%	150 ml	200 ml	250 ml	1,5-2,5	250-500 ml	250 ml	
Uden-flüssig	Propoxur 20%	300 ml	350 ml	400 ml	1,5-2,5	250 ml	250 ml	
Cymbush	Cypermethrin	90 ml	120 ml	150 ml	1,5-2,5	250-500 ml	250 ml	
Danitol, Rody	Fenpropathrin 2,4 ec	75 ml	100 ml	125 ml	1,5-2,5	250-500 ml	250 ml	
Nexion 40 EC	Bromophos 36%	150 ml	200 ml	250 ml	1,5-2,5	250-500 ml	250 ml	
Talstar EC	Bifenthrin 10%	30 ml	40ml	50 ml	1,5-2,5	250-500 ml	250 ml	
Sumitox	Malathion 50%	200 ml	250 ml	300 ml	1,5-2,5	250-500 ml	250 ml	
Isathrine	Bioresmethrin 10%	150 ml	175 ml	200 ml	1,5-2,5	250-500 ml	250 ml	
Ortho-Dibrom	Naled 50%	200 ml	200 ml	200 ml	1,5-2,5	250-500 ml	250 ml	
Confidor, Gaucho	Imidacloprid 70%	30 g	40 g	50 g	1,5-2,5	0,25-0,5	250 ml	
<b>LEAFMINER • MINEUSE • MINATRICE • MINIERFLIEGE</b>								
Ambush	Permethrin 25%	50 ml	60 ml	70 ml	1,5-2,5	0,25-0,5	250 ml	
Decis <sup>1)</sup>	Deltamethrin 2,5%	80 ml	100 ml	120 ml	1,5-2,5	0,25-0,5	250 ml	test blossom first!
Ripcord 10	Cypermethrin 10%	90 ml	120 ml	150 ml	1,5-2,5	0,25-0,5	250 ml	
Afugan <sup>1)</sup>	Pyrazophos 30%	120 ml	150 ml	180 ml	1,5-2,5	0,25-0,5	250 ml	effective against larvas
Hostathion <sup>2)</sup>	Triazophos 42%	40 ml	50 ml	60 ml	1,5-2,5	0,25-0,5	250 ml	
Aktellic 50	Pirimiphos 50%	120 ml	150 ml	180 ml	1,5-2,5	0,25-0,5	250 ml	<sup>1)</sup> not on blossoms
Tamaron	Methamidophos 60	250 ml	300 ml	350ml	1,5-2,5	0,25	250 ml	
PD-5/Phosdrin	Mevinphos 50%	60 ml	80 ml	100 ml	1,5-2,5	0,25-0,5	250 ml	<sup>2)</sup> test of tolerance
Thiodan-35 EC	Endosulfan 35%	150 ml	200 ml	250 ml	1,5-2,5	0,25-0,5	250 ml	necessary
Diazinon-35 EC	Basudin 35%	150 ml	200 ml	250 ml	1,5-2,5	0,25-0,5	250 ml	
Dedevap	Dichlorphos 50%	150 ml	200 ml	250 ml	1,5-2,5	0,25-0,5	250 ml	
E-605-forte	Parathion 50%	120 ml	150 ml	180 ml	1,5-2,5	0,25-0,5	250 ml	
Hansa-Nikotin	Nikotin 95%	90 ml	120 ml	150 ml	1,5-2,5	0,25-0,5	250 ml	
Vydate L	Oxamyl 25%	225 ml	300 ml	375 ml	1,5-2,5	0,25-0,5	250 ml	
Dipterex-SL	Trichlorfon 50%	200 g	250 g	300 g	2,5	0,25-0,5	250 ml	
Cymbush	Cypermethrin	90 ml	120 ml	150 ml	1,5-2,5	0,25-0,5	250 ml	
Vertimec	Avermectin 18g/l	50 ml	80 ml	120 ml	1,5-2,5	0,1	250 ml	
Danitol, Rody	Fenpropathrin 2,4	75 ml	100 ml	125 ml	1,5-2,5	0,25-0,5	250 ml	
Lindafor	Lindane 75%	80 ml	100 ml	120 ml	1,5-2,5	0,25-0,5	250 ml	
Trigard	Cyromazine	40 g	50 g	60 g	1,5-2,5	0,25-0,5	250 ml	Repeat weekly if necessary

The present international table of dosing information has been established due to experiences gathered over many years with the pulsFOG®-fogging method in international horticulture. The mentioned plant products proved in the various countries, provided correct application. We kindly request, however, to absolutely observe the national registrations. Since application is out of our influence, no claims are made for ineffectiveness, damages and termination of registration. Respect the requirements of biocide manufacturer or registration holder, the hints in the pulsFOG® leaflets and in the machine manual



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		Minimum** (Starter rate)	Medium (normal rate)	Maximum (pre-tested)	Water (l) +VK-2 special*)	nutriFOG® (alternatively)		
<b>APHIDS • PUCERONS • BLATTLÄUSE • AFIDI</b>								
Hostaquick	Heptenophos 50%	75 ml	100 ml	125 ml	1,5-2,5	0,25-0,5	250 ml	*not on blooming African Violets, Begonium and Pelargonium
Pirimor-G	Pirimicarb 50%	60 g	80 g	100 g	1,5-2,5	0,25-0,5	250 ml	** the dosages mentioned here can be reduced for an- other 20% for plants below a size of test blossom first!
Diazinon-25 EC	Basudin 25%	150 ml	200 ml	250 ml	1,5-2,5	0,25-0,5	250 ml	
Croneton-500	Ethiofencarb 50%	120 ml	150 ml	180 ml	1,5-2,5	0,25-0,5	250 ml	
Malathion	Malathion 50%	100 ml	150 ml	200 ml	1,5-2,5	0,25-0,5	250 ml	
PD-5/Phosdrin	Mevinphos 50%	50 ml	60 ml	70 ml	1,5-2,5	0,25-0,5	250 ml	
Unden flüssig	Propoxur 20%	250 ml	300 ml	350 ml	1,5-2,5	0,25-0,5	250 ml	
Hansa-Nikotin	Nikotin 95%	90 ml	120 ml	150 ml	1,5-2,5	0,25-0,5	250 ml	
Lannate-20 L	Methomyl 20%	250 ml	300 ml	350 ml	1,5-2,5	250-500 ml	250 ml	
Tamaron	Methamidophos 60	200 ml	250 ml	300 ml	1,5-2,5	0,25	250 ml	
Decis	Deltamethrin 2,5%	80 ml	100 ml	120 ml	1,5-2,5	0,25-0,5	250 ml	
Diazinon-35 EC	Basudin 35%	150 ml	200 ml	250 ml	1,5-2,5	0,25-0,5	250 ml	
Ortho-Dibrom	Naled 50%	200 ml	200 ml	200 ml	1,5-2,5	250-500 ml	250 ml	
Confidor, Gaucho	Imidacloprid 70%	15 g	25 g	35 g	1,5-2,5	250-500 ml	250 ml	
Rogor	Dimethoat 40%	150 ml	200 ml	250 ml	1,5-2,5	0,25-0,5	250 ml	
<b>THRIPS • THRIPI • THRIPISE (BLASENFUSS) • TRIPS</b>								
Ambush	Permethrin 25%	50 ml	60 ml	70 ml	1,5-2,5	0,25-0,5	250 ml	test blossom first!
Unden-flüssig	Propoxur 20%	250 ml	300 ml	350 ml	1,5-2,5	0,25-0,5	250 ml	
Dimecron-20	Phosphamidon 20%	120 ml	150 ml	180 ml	1,5-2,5	0,25-0,5	250 ml	
PD-5/Phosdrin	Mevinphos 50%	50 ml	60 ml	70 ml	1,5-2,5	0,25-0,5	250 ml	
Thiodan-35 EC	Endosulfan 35%	150 ml	200 ml	250 ml	1,5-2,5	0,25-0,5	250 ml	
Diazinon-25 EC	Basudin 25%	150 ml	200 ml	250 ml	1,5-2,5	0,25-0,5	250 ml	
Tamaron	Methamidophos 60	250 ml	300 ml	350 ml	1,5-2,5	0,25	250 ml	
Orthen	Acephat 50%	150 g	200 g	250 g	2,5	0,25-0,5	250 ml	
Ekamet	Etrimfos 50%	100 ml	125 ml	150 ml	1,5-2,5	0,25-0,5	250 ml	
Devedap	Dichlorvos 50%	150 ml	200 ml	250 ml	1,5-2,5	0,25-0,5	250 ml	
Rogor	Dimethoat 40%	150 ml	200 ml	250 ml	1,5-2,5	0,25-0,5	250 ml	
Decis	Deltamethrin 2,5%	80 ml	100 ml	120 ml	1,5-2,5	0,25-0,5	250 ml	
Anthio forte	Formothion 33,8%	200 ml	250 ml	300 ml	1,5-2,5	0,25-0,5	250 ml	
Kilval	Vamidothion 40%		250 ml		1,5-2,5	0,25-0,5	250 ml	
Confidor, Gaucho	Imidacloprid 70%	30 g	40 g	50 g	1,5-2,5	0,25-0,5	250 ml	
<b>SNAILS • ESCARGOTS • SCHNECKEN • CHIOCCIOLA</b>								
Antilimace	Metaldehyd 80%	200 g	200 g	200 g	2,5			
<b>MUSHROOM FLY • CHAMPIGNONFLIEGEN • MOUCHE DE CHAMPIGNON</b>								
Dedevap	Dichlorvos 50%	150 ml			2,5	0,25-0,5		per 3000 m <sup>3</sup>
Diazinon-25 EX	Basudin 25%	150 ml			2,5	0,25-0,5		per 3000 m <sup>3</sup>
Malathion	Malathion 50%	150 ml			2,5	0,25-0,5		per 3000 m <sup>3</sup>
Trigard 75	Cyromazine 75%	To be used as a soil drench with 70g/100 m <sup>2</sup>						

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# ULV Application Chart for Greenhouse Pests

## pulsFOG® Dosing Adviser

Trade Product	Active Ingredient	Rate/1000 m <sup>2</sup> or 3000 m <sup>3</sup>						Remarks
		Minimum**) (Starter rate)	Medium (normal rate)	Maximum (pre-tested)	Water (l) +VK-2 special*)	nutriFOG® (alternatively)		
<b>SPIDER MITES</b>		<b>ACARIENS</b>		<b>SPINN MILBEN</b>		<b>RAGNETTO ROSSO</b>		
Vertimec****	Avermectin 18g/l	40 ml	80 ml	120 ml	1,5-2,5	0,15	250 ml	
Vydate L	Oxamyl 25%	225 ml	300 ml	375 ml	1,5-2,5	0,25-0,5	250 ml	
Tamaron****	Methamidoph. 60%	300 ml	350 ml	400 ml	1,5-2,5	0,25	250 ml	*not on blooming
Plictran-flüssig****	Cyhexatin 60%	60 ml	70 ml	80 ml	1,5-2,5	0,25-0,5	250 ml	African Violets, Begonium and Pelargonium
Mitac	Amitraz 20%	800 ml	1000 ml	1200 ml	1,5-2,5	0,25	250 ml	
Kelthane-MF****	Dicofol 50%	200 ml	250 ml	300 ml	1,5-2,5	0,25-0,5	250 ml	** the dosages mentioned here can be reduced for another 20% for plants below a size of 25 cm
Acres****	Dinobuton 50%	90 g	120 g	150 g	1,5-2,5	0,25-0,5	250 ml	
Drawinol-S	Dinobuton 25%	150 ml	175 ml	200 ml	1,5-2,5	0,25-0,5	250 ml	
Kilacar	Proclonol 30 %	150 ml	200 ml	250 ml	1,5-2,5	0,25-0,5	250 ml	
Morestan	Chinomethion. 25	60 g	70 g	80 g	1,5-2,5	0,25-0,5	250 ml	
Pentac	Dienochlor 50%	150 g	200 g	250 g	2,5	0,25-0,5	250 ml	effective only preventively
Pentac-flüssig	Dienochlor				1,5-2,5	0,25-0,5	250 ml	
Shell-Torque-flüs.	Fenbutatinox. 50	75 ml	100 ml	125 ml	1,5-2,5	0,25-0,5	250 ml	****several crops especially roses do not tolerate the max. dosis
Folimat	Omethoat 60%	400 ml	500 ml	600 ml	1,5-2,5	0,25	250 ml	
Ortho-Dibrom	Naled 50%	150 ml	200 ml	250 ml	1,5-2,5	0,25	250 ml	
Danitol, Rody	Fenprothrin 2,4 ec	75 ml	100 ml	125 ml	1,5-2,5	0,25-0,5	250 ml	
<b>SCALE INSECTS</b>		<b>COCHENILLES</b>		<b>SCHILDLÄUSE</b>		<b>COCCINIGLE</b>		
Ultracid 20 flüssig	Methidathion 20%	250 ml	300 ml	350 ml	1,5-2,5	0,25-0,5	250 ml	
Uden-flüssig	Propoxur 20%	300 ml	350 ml	400 ml	1,5-2,5	0,25-0,5	250 ml	
Rogor	Dimethoat 40%	150 ml	200 ml	250 ml	1,5-2,5	0,25-0,5	250 ml	
Tamaron	Methamidophos 60	250 ml	300 ml	350 ml	1,5-2,5	0,25	250 ml	
E-605-forte	Parathion 50%	120 ml	150 ml	180 ml	1,5-2,5	0,25-0,5	250 ml	
Diazinon-35 EC	Basudin 35%	150 ml	200 ml	250 ml	1,5-2,5	0,25-0,5	250 ml	
Elefant-Sommeröl + Dede vap	Mineralöl + Dichlorvos	400 ml 150 ml	400 ml 150 ml		2 2			
Spruzit	Pyrethrum 4%	250 ml	300 ml		1,5-2,5	0,25-0,5	250 ml	
Parexan	Pyrethrum 4%	250 ml	300 ml		1,5-2,5	0,25-0,5	250 ml	
Uden-flüssig	Propoxur 20%	300 ml	350 ml	400 ml	1,5-2,5	0,25-0,5	250 ml	
<b>SOIL FLY</b>		<b>TRAUERMÜCKEN</b>						
Dede vap	Dichlorphos 50%	200 ml	200 ml	200 ml	2,5	0,25		
Birlane-fluid	Chlorfenvinphos	150 ml	150 ml	150 ml	2,5	0,25		
<b>LEAF-NEMATODE</b>		<b>EELWORM</b>		<b>BLATTÄLCHEN</b>		<b>ANGUILLULOSE</b>		
Nemafos	Thionazin 50%	120 ml	150 ml	180 ml	1,5-2,5	0,25-0,5	250 ml	
Vydate L	Oxamyl 25%	225 ml	300 ml	375 ml	1,5-2,5	0,25-0,5	250 ml	
E-605-forte	Parathion 50%	120 ml	150 ml	180 ml	1,5-2,5	0,25-0,5	250 ml	
Hostathion	Triazophos 42%	40 ml	50 ml	60 ml	1,5-2,5	0,25-0,5	250 ml	not on blossoms
Afugan	Pyrazophos 30%	120 ml	150 ml	180 ml	1,5-2,5	0,25-0,5	250 ml	not on blossoms

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Trade Product	Active Ingredient	Rate/1000 m <sup>2</sup> or 3000 m <sup>3</sup>					Remarks	
		Minimum** (Starter rate)	Medium (normal rate)	Maximum (pre-tested)	Water (l) +VK-2 special*)	nutriFOG® (alternatively)		
<b>STERNRUSSTAU</b>								
Saprol/Fungine x	Triforin 20%	200 ml	250 ml	300 ml	1,5-2,5		*not on blooming African Violets, Begonium and Pelargonium	
Ortho-Phalthan	Folpet 75%	250 g	300 g	350 g	2,5	0,25-0,5		
Fungaflor	Imazalil 20%	150 ml	200 ml	250 ml	1,5-2,5	0,25-0,5		
Tecto-FL	Thiabendazol 45%	150 ml	200 ml	250 ml	1,5-2,5	0,25-0,5		
Manzicarb	Vondozeb 79%	300 g	350 g	400 g	3,5	0,25-0,5		
Polyram Combi	Metiram 80%	250 g	300 g	350 g	3	0,25-0,5		
Antracol	Propineb 70%	250 g	300 g	350 g	3	0,25-0,5		
Dithane ultra	Mancozeb	250 g	300 g	350 g	3	0,25-0,5		
<b>ASCOCHYTA</b>								
Dithane-Ultra	Mancozeb 80%	250 g	300 g	350 g	3	0,25-0,5	** the dosages mentioned here can be reduced for an- other 20% for plants below a size of 25 cm	
Delan-flüssig	Dithianon 23%	250 ml	300 ml	350 ml	1,5-2,5	0,25-0,5		
Daconil-W 75	Chlorothalonil 75%	150 g	200 g	250 g	2,5	0,25-0,5		
<b>DOWNY MILDEW      MILDIOU      FALSCHER MEHLTAU      PERONOSPORA</b>								
Ridomil-50	Metalaxyl 50%	75 g	100 g	125 g	1,5	0,25-0,5	Risk of choking the nozzle	
Daconil-W 75	Chlorothalonil	150 g	200 g	250 g	2,5	0,25-0,5		
Aliette	Aluminiumfosetyl	300 g	350 g	400 g	3,5	0,25-0,5		
Manzicarb	Vondozeb 79%	300 g	350 g	400 g	3,5	0,25-0,5		
Vinicoll	Folpet 37,5%	250 g	300 g	350 g	2,5	0,25-0,5		
Dithane-Ultra	Mancozeb 80%	250 g	300 g	350 g	3	0,25-0,5		
BASF-Maneb	Maneb 80%	250 g	300 g	350 g	3	0,25-0,5		
Polyram-Combi	Metiram 80%	250 g	300 g	350 g	3	0,25-0,5		
Antracol	Dichlofluanid 50%	300 g	350 g	400 g	3	0,25-0,5		
Previcur N	Propamocarb 72%	250 ml	350 ml	450 ml	1,5	0,25		
<b>POWDERY MILDEW      OIDIUM      ECHTER MEHLTAU      OIDIO/MAL BIANCO</b>								
Fungaflor	Imazalil 20%	150 ml	200 ml	250 ml	2,5			
Nimrod	Bupirimat 25%	200 ml	250 ml	300 ml	1,5-2,5	0,25-0,5		
Afugan	Pyrazophos 30%	100 ml	125 ml	150 ml	1,5-2,5	0,25-0,5	not during blooming	
Rubigan	Fenarimol 12%	100 ml	125 ml	150 ml	1,5-2,5	0,25-0,5	not on blossoms	
Plondrel-Flüssig.	Ditalimos 20%	150 ml	200 ml	250 ml	1,5-2,5	0,25-0,5	not on blossoms	
Meltatox	Dodemorph 40%	300 ml	400 ml	500 ml	1,5-2,5	0,25-0,5	not during blooming	
Morestan	Chinomethionat 25%	40 g	60 g	80 g	1,5-2,5	0,25-0,5		
Frutogard	Ditalimos 50%	75 g	100 g	125 g	1,5-2,5	0,25-0,5		
Bayleton- spezial	Triadimefon 5%	40 g	60 g	80 g	1,5-2,5	0,25-0,5		
Tecto-FL	Thiabendazol 45%	150 ml	200 ml	250 ml	1,5-2,5	0,25-0,5		
Acrex	Dinobuton 48,5%	90 g	120 g	150 g	1,5-2,5	0,25-0,5		
Saprol	Triforin 20%	225 ml	300 ml	375 ml	2		No additive used	

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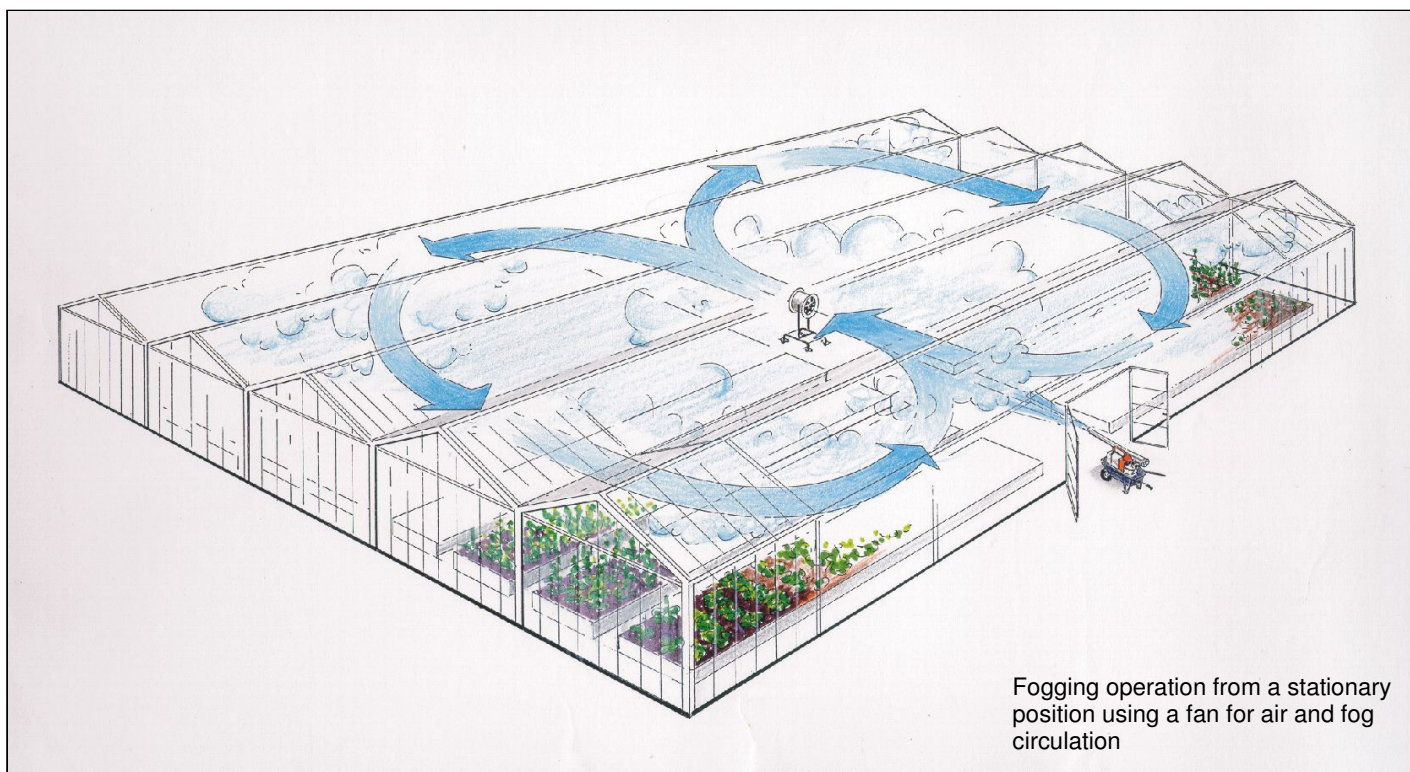


# ULV Application Chart for Greenhouse Pests

## pulsFOG® Dosing Adviser

Trade Product	Active Ingredient	Rate/1000 m <sup>2</sup> or 3000 m <sup>3</sup>					Remarks	
		Minimum** (Starter rate)	Medium (normal rate)	Maximum (pre-tested)	Water (l) +VK-2 special*)	nutriFOG® (alternatively)		
		ALTERNARIA LEAF SPOT		BLATTFLECKENKRANKHEIT				
Delan flüssig	Dithianon 23%	250 ml	300 ml	350 ml	1,5-2,5	0,25-0,5	** the dosages mentioned here can be reduced for another 20% for plants below a size of 25 cm	
Saprol/Fungin.	Triforin 20%	225 ml	300 ml	375 ml	2			
Manzicarb	Vondozeb 79%	300 g	350 g	400 g	3,5	0,25-0,5		
Orthocid 83	Captan 83%	300 g	350 g	400 g	3,5	0,25-0,5		
Benlate	Benomyl 50%	60 g	80 g	100 g	2	0,25-0,5		
Polyram Combi	Metiram 80%	250 g	300 g	350 g	3	0,25-0,5		
Euparen	Dichlofluanid 50%	300 g	350 g	400 g	3	0,25-0,5		
Antracol	Dichlofluanid 50%	300 g	350 g	400 g	3	0,25-0,5		
DESINFECTION								
Formalin	Formaldehyd 40%	5 Liter/1000 m <sup>3</sup> Raum				0,25-0,5		in empty greenhouses

### Fogging from the door if plant rows are max 15 m long



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# pulsFOG<sup>®</sup> VK-2 Spezial

## Additive for Aqueous Fogging Solutions

(Polyglycol dispersion containing Diethylene glycol 915.12 g/l) German Registr. No: **5393-00**

### Properties

**VK-2 Spezial** is a water-soluble additive inhibiting the evaporation of aqueous pesticide and disinfectant solutions applied in the form of aerosols.

VK-2 enhances the homogeneity, visibility and spraying radius of the droplet fog generated. The evaporation-inhibiting properties ensure that the water droplets carrying the active ingredient retain their original size for a longer time. The evaporation loss is reduced. The improved visibility and spraying radius of the fog produced facilitate uniform distribution in the space and across the surface. VK-2 narrows the droplet spectrum and prevents precipitation of larger droplets in the vicinity of the fogger. The distribution in the treated room is enhanced. The neutral emulsifying agent contained stabilises the admixed biocide in water with a higher hardness degree.

### Application

Greenhouse plant protection, outdoor plant protection, pest control, animal housing disinfection, cinema effects, fire brigade exercises

### Dosage

100-500 ml of VK-2 Spezial + 1.5-3 l of water/1000 m<sup>2</sup> greenhouse area. The lower the temperature in the greenhouse, the less VK-2 should be used: At 16 °C, only 100 ml. The maximum dosage is used with 3 l of water and a room temperature of >21 °C.

Formulation steps: The water portion per volume unit is increased as smaller the greenhouse size.

All sizes below 500 m<sup>2</sup> shall be rated with the max of 2,5 L/1000m<sup>2</sup>

First mix the biocide with water then add VK-2 special.

Rule for the dosage of the biocide added:

Minimum: The quantity used for spraying in 100 l water should be fogged per 1000 m<sup>2</sup>.

Maximum: The quantity used for spraying in 300 l water should be fogged per 1000 m<sup>2</sup>.

For the first application, begin with the minimum dosage; then increase as necessary.

**Warning:** The flowers of saintpaulia, impatiens, gesneria, begonia, pelargonium and some gerbera species may respond with a certain susceptibility. In such cases, do not apply more than 100 ml/1000m<sup>2</sup>. Do not mix with Saprol (Triforine), Confidor (Imidacloprid), Uden liquid (Propoxur liquid) or Metasystox (Oxydemeton-methyl).

### Preparing the fogging liquid

Begin by stirring the biocide or disinfection agent into the required volume of water. Wettable powder should first be stirred to a lump-free paste with a little water. Finally add VK-2 to the fogging liquid and stir.

**Warning:** Do not prepare more fogging liquid than you actually need for immediate application.

### Application conditions

In a closed greenhouse, in the evening or at night at temperatures below 25 °C. Take the necessary precautions to avoid condensation on the leaves due to a significant temperature drop.



Stationary fogging is only admissible using blowers; otherwise distribute the fog evenly over the crop. (Start at the far end of the greenhouse and walk backwards, spraying uniformly from the chemical tank so that it is empty by the time you reach the exit. When you arrive at the centre of the greenhouse, check that 50% of the tank content has been used up). Do not fog on plants directly.

Preferably at a high relative humidity (80% min.). During the day, only with the sky clouded. In the evening, at night.

### **Precautions**

Do not inhale the fog produced. Keep empty containers away from waters. When finished, wash hands and other exposed skin areas using soap. In case of eye contact, rinse with ample water. If you feel sick, or in case of an accident, get medical assistance.

#### When fogging admixed biocides:

Observe the manufacturers' safety instructions. Wear full-scale protective clothing including respiratory filter of class A<sub>2</sub>B<sub>2</sub>-P<sub>3</sub>. Tag-out all treated rooms. Ventilate the treated room for at least 1 h before accessing it without protective clothing.

### **Warning:**

Misuse can cause damage to health. Ingestion causes damage to health. Strictly adhere to the instructions for use.

### **Storage**

Store in original container and protected from frost. Keep out of reach of children and away from fodder and food. Max. recommended storage period: 6 years.

Mixtures of water and VK-2 Spezial can be kept in a separate closed container until the next application. Mixtures with biocides must not be kept for later use!

### **Warranty**

We warrant the proper quality and composition of the product in the original unopened container.

### **Disclaimer**

Since the actual application is beyond our control, we shall not be liable for lack of success or any damage caused.

**nutriFOG®**

## **Special Fertilizer for the Fogging Method in the Greenhouse**

**nutriFOG®** is a proprietary and registered special formulation, offered for **pulsFOG®** thermal and cold fogger with stainless steel nozzles. It retards premature evaporation of the water and prevents the fertilizer substance from crystallizing\*) out prematurely. **nutriFOG®** contains all the essential nutrients for improving the plants' vitality, thus ensuring a particularly attractive appearance of the treated cultures. The nutrients can develop their full physiological effect due to the added chelating agents. **nutriFOG®** is suitable for admixing to common plant protection applications, too.

### **Dosage:**

250 ml of **nutriFOG®** plus 1.5 –2.5 l of water per 1.000 m<sup>2</sup> of greenhouse area at an interval of no less than 5 days. Increasing the dosage to 500 ml/1.000 m<sup>2</sup> is possible in individual cases. The total application volume of **nutriFOG®** should not exceed 1.5 l/1.000 m<sup>2</sup> per month. If wettable powders are admixed, the concentration should not exceed 80 g WP/l of water. If necessary, add more water. Please observe the dosage on the label of the plant protective product and the instructions of the fogger manufacturer.

### **Preparing the fogging liquid:**

Start by mixing the treatment agent with water, then add **nutriFOG®** while stirring. If an inexperienced biocide is intended to use, it is advised to prepare first a small trial solution to check the compatibility. In some rare cases the mixture is not compatible (it will develop a paste). Do not mix **nutriFOG®** with biocides, which prohibit adding any other chemicals.

### **Application instructions:**

For combined application with plant protectives, wear gas mask with filter A<sub>2</sub>B<sub>2</sub>-P<sub>3</sub>  
Distribute the fog evenly on the crop while walking backwards. Stationary fogging is only admissible with fan-type foggers or additional fans using a fan with low revolution (less than 1000/min). Machines, equipped with a nozzle system made from brass are not suitable (brass is not resistant to **nutriFOG®**). Operate and fog only in the evening, avoiding strong temperature drop during the night.

### **Prevention of accidents:**

Do not enter the treated greenhouse during the period of action of the fog and vent it for one hour before entering.

**Precautions:**

Keep the treatment substance and its residues as well as the emptied Containers and packages away from waters. Fully use up any residual quantities. Dispose of empty packages via the household garbage collection, or rinse thoroughly. After work, wash the hands and all affected skin areas thoroughly with water and soap. In case of eye contact, rinse immediately with ample water. In case of sickness or accident, call a physician immediately ( if possible, present this label to him).

**Danger:** Misuse may be detrimental to health. Swallowing is detrimental to health.

**Storage:**

Store in original Container. Keep out of the reach of children and away from human and animal food. Protect this product from drying out, contamination and sunlight. Keep the Container hermetically closed. Do not store at temperatures below 4°C and higher than 40°C.

**Liability:**

This Information corresponds to the current state of our knowledge and is intended to inform you about the possibilities of application. The product is suitable for the recommended purposes if these instructions for use are observed. Since storage and application of the fertilizer are beyond our control, we shall only warrant perfect quality at the time of delivery.

\*) Fertilizers are originally dry crystals, which have to be dissolved in water for a proper absorption in the plant. A foliar fertilizer formulated for the traditional foliar spray (high volume) is not suited for any ULV application (thermal or coldfogger), since the small droplets containing the diluted crystals would evaporate within few minutes. The water content of small droplets evaporates before settling on the foliage and the remaining fertilizer crystals will arrive the leaves without being absorbed.

**nutriFOG<sup>®</sup>** (EEC fertilizer)

NPK fertilizer solution with B; Cu; Fe; Mn; Mo; Zn

10%	N	total nitrogen
3%	P <sub>2</sub> O <sub>5</sub>	water-soluble phosphate
3%	K <sub>2</sub> O	water-soluble potassium oxide
0.01%	B	water-soluble boron
0.002%	Cu	water-soluble copper*
0.02%	Fe	water-soluble iron*
0.01%	Mn	water-soluble manganese*
0.001%	Mo	water-soluble molybdenum
0.002%	Zn	water-soluble zinc

\* as a chelate of EDTA (low Chloride content) Do not store at temperatures below 4°C and higher than 40°C. Avoid strong temperature Variation.

**pulsFOG patents are issued, applied for or pending worldwide under the following numbers:**

**Europe**

**EU** 0060938 // 94112785.4 //  
0092057 // 92 115 438.1

**GER** P2835338 // P3214932.8 //  
P3100414.8 // P3521941.6 //  
P2938958.0 // P3230184.7 //  
P3306546.2

**GB** 2028170 // 2066 367 // 2125317

**F** 7920407 // 8020747

**I** 982677 // 967324

**CH** 660668

**NL** 8004432 // 149990

**USA+** 4.298.167 // 4.504.214 //  
08/274.267 // 992 039

**Canada:** 4.556.383 // 1.144.227 //  
1.195.229 // 5.224.651

**Japan:** 1 223491 // 133094/80 //  
195755/81 // 5-245 415

**Brazil:** PI7508223 // PI7904982 //  
PI8006095 // PI8200067

**Under the registered pulsFOG trade mark the following trade names of pulsFOG products are used:**

**pulsFOG BIO**

(water cooled thermal fogger with 2 tanks for water and pesticide)

**DECOFOG**

(Portable thermal fogger with special design for decontamination)

**COLFOGGER**

(Heavy duty coldfogger mounted on wheels with a flow rate more than 30 l/h)

**Turbo ULV**

(portable electric coldfogger with 5 l tank)

**TracFOG**

(Coldfogger with PTO drive)

**TURBOMATIC**

(Autostationnary electric coldfogger on turntable, computer controlled)

**MINIMATIC**

(Autostationnary electric coldfogger, computer controlled)

**nutriFOG**

(Fogging additive with foliar fertilizing properties, bio-active, for the conversion of plant protective chemicals into a fogging formulation in glasshouses)

**VK-2 special**

(Fog enhancer for water based fogging formulations)



**pulsFOG**

**DR. STAHL & SOHN GMBH**

Abigstrasse 8  
D-88662 Überlingen  
Germany

Tel: +49 7551 92610  
Fax: +49 7551 926161  
E-mail: info@pulsfog.com

// [www.pulsfog.com](http://www.pulsfog.com)