



### **PEST CONTROL OF EMPTY BEFORE THE STORAGE SILOS AND WAREHOUSES** MIST CEREAL-SAN® Robustness, flexibility and simplicity to use are few of the main peculiarities of the most professional Ultra Low Volume (ULV) nebulizer on the market. TANK CAPACITY 24 | MAIN FEATURES: ✓ 24 I capacity stainless steel tank; ✓ 8 bar safety valve; ✓ 0-10 bar pressure gauge; ✓ Air-liquid nozzle\*; ✓ Handgun and spiral tube. **OPTIONAL:** ✓ Timer INTERNAL AGITATOR TIMER **AIR-LIQUID NOZZLE**

\*example: Air-liquid nozzle covers up to 24.000 m<sup>3</sup> using 24 l of solution in 55 minutes

# CANNON CEREAL-SAN®

The most powerful and effective Ultra Low Volume (ULV) spraying system ever created. The piston pump runs 8 micro-nozzles able to fill large volumes in a small amount of time. The pump-ventilator system is powered by a 220V single-phase electric motor.

### WORKING PRESSURE 30 bar

#### MAIN FEATURES:

- ✓ 120 I capacity tank;
- ✓ Stainless steel micro-nozzles;
- $\checkmark$  Manual system for the outflow's direction;
- ✓ Ventilator with a 6000 RPM electric motor.



# ADMIXTURE TREATMENT ON CEREAL GRAINS



### CEREAL-SAN®/DUO CEREAL-SAN®

CEREAL-SAN<sup>®</sup> is a compact and solid system developed with a magnetic drive stainless steel pump, able to run up to 3 spraying independent lines for the direct treatment of post-harvest cereals.

### FLOW RANGE CAPACITY 33 I/hr

#### MAIN FEATURES:

- ✓ 230V 50Hz IP55 single-phase electric motor;
- Self-supporting, flat-bottom, 100 I capacity polyethylene tank;
- ✓ Nr 2 spraying units with a filter and fixing supports;
- ✓ Nr 6 cone nozzles type "TX" (2xA, 2xB, 2xC);
- ✓ 20 mt rilsan tube 4-6mm;
- ✓ 0 10 bar pressure gauge;
- ✓ Float with a foot valve.

### OPTIONAL:

CEREA

✓ System for mainteining the tank at a positive temperature;

DUO CEREAL SAN®, equipped with two separated and not connected tanks, allows to manage easily and safely the pest-control of different cereals' lots, with different products and dosages.



# POWER CEREAL-SAN®



CEREAL

POWER CEREAL-SAN<sup>®</sup> represents the most performing system for the direct pestcontrol treatment on cereals and grains. The electric pump system is fixed directly to the 1000 I tank.

### FLOW RANGE CAPACITY 100 I/hr

#### MAIN FEATURES:

- ✓ 230V 50Hz IP55 single-phase electric motor placed on a polyethylene cube with 1000 I capacity;
- Nr 2 spraying units with a filter and fixing supports;
- ✓ Specific nozzles;
- ✓ 20 mt rilsan tube 4-6 mm;
- ✓ 0 10 bar pressure gauge;
- ✓ Float with a foot valve.

# CEREAL-SAN® AIR-LIQUID

Multi-purposes system for the pest-control treatment of post-harvest grain cereals during their transit on the transport line (redler and cochlea mainly). The system involves a specific nozzle able to produce an air-liquid spray finely atomized and penetrant. This nozzle is controlled by an air microcontroller placed on the tank to which is connected the compressed air and by a magnetic drive stainless steel pump. This unit can be also reproduced (on request) on a 50 I stainless steel tank.

MAIN FEATURES:

polyethylene tank;
✓ 0 – 10 bar pressure gauge;
✓ Float with a foot valve;
✓ 20 mt rilsan tube 4-6 mm;
✓ Nr. 1 spraying air-liquid unit;





CEREAL



SPECIFIC AIR-LIQUID NOZZLE

### Air microcontroller with compressed air tap inlet; Magnetic drive stainless steel pump;

✓ Fittings.

### OPTIONAL:

✓ System for mainteining the tank at a positive temperature;

FLOW RANGE CAPACITY 6.1 I/hr

✓ 230V - 50Hz - IP55 single-phase electric motor;
 ✓ Self-supporting, flat-bottom, 100 I capacity

# AIR CEREAL-SAN®

AIR CEREAL-SAN<sup>®</sup> is a compressed-air device for the pest-control treatment of post-harvest grain cereals. It includes a compressed air inlet, a pressure sensor and 2 independent spraying lines for the nebulization of the insecticide's mixture.

### FLOW RANGE CAPACITY 3 -18 l/hr

#### MAIN FEATURES:

- ✓ 24 I capacity stainless steel tank;
- ✓ 8 bar safety valve;

CEREAL

- $\checkmark$  Nr. 2 spraying units with a filter and fixing supports;
- ✓ Nr. 6 cone nozzles type "TX" (2xA, 2xB, 2xC);
- ✓ 20 mt rilsan tube 4-6mm;
- $\checkmark$  0 10 bar pressure gauge.

# DUST CEREAL-SAN®

DUST CEREAL SAN<sup>®</sup>, thanks to the Venturi Effect, creates the aspiration of the dry powder directly from the hopper and distributes it uniformly on the cereal transport systems, such as redlers and cochleas. It is also equipped with a grid to sift dust. A flexible pipe with a specific supply's unit can be also installed in order to dust surfaces, walls and to treat post-harvest cereal grains.

#### MINIMUM WORKING PRESSURE 4 bar

#### MAIN FEATURES:

- ✓ Entirely metallic equipment;
- ✓ 30 kg powders load hopper;
- ✓ Powder output rilsan tube 12 mm;
- ✓ Ball gate valve;
- Vibrating system for the mass movement;
- ✓ Air regulator;
- ✓ Window to control and unload the residual powder;
- ✓ Electro valve system for remote operations.

UNLOAD THE RESIDUAL POWDER AND VIBRATING SYSTEM

WINDOW TO CONTROL AND



AIR REGULATOR FOR THE VIBRATING SYSTEM

# ADMIXTURE OF CEREALS INSTRUCTIONS OF USE

The correct product application is essential to get the expected result in controlling cereal pests. In order to fulfil the different needs, Newpharm<sup>®</sup> suggests the best application system and the most suitable insecticide's mixture.

# WHAT SHOULD YOU KNOW?

1. Storage period in months;

2. Flowrate of transport lines as cochleas, redlers or elevator towers

Knowing those elements, the technical service of Newpharm<sup>®</sup> will suggest you:

- The most effective mixture, taking into consideration the different kind of cereal grains and the possible pests;
- The most suitable application system and the technical support for the installation.

Those two factors are essential to perform a successful application, in order to reduce waste and to achieve the highest effectiveness from the employed products.

The correct set up of the spraying units is crucial in order to achieve optimal treatments on grain cereals. Nozzles need to be placed on cereal's transport lines so that, along the application, (a shuffle of the cereal in order to the product mixture evenly reaches the whole cereal mass smooth the insecticide active substance on the whole volume could be performed).

The cereal's transport lines are: redler (pic. 1), cereal fall (pic. 2) or cochlea (pic. 3).

### Collocation spots:

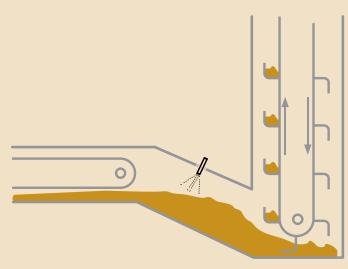
1) Place the nozzle on the redler's end limit, using the inspection window. It represents a strategic spot since it is possible to control the efficiency of the spraying system through the inspection window.

2) Place the nozzle on the ramp which transports the cereal grains from the redler to the bottom of the elevator tower.

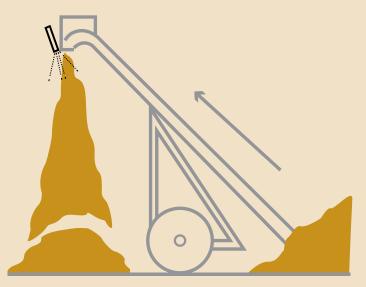
3) Place the nozzle on the cochlea's end limit, where the cereal grain starts to fall down.



Picture 1



Picture 2



Picture 3

#### Before to start each treatment, you should always check spray head's flow rate, which can be affected by:

- ✓ Viscosity of the product and temperature;
- ✓ Cleaning of suction filter, spray head, injector body and pipes.

The effectiveness of the treatment is guaranteed by the correct nebulization of the product. It is also suggested to verify the actual consumption of product depending on the stored cereal grains, in case the pump is not equipped with a **digital flow meter** (optional).

### **CEREAL-SAN®:** FAN NOZZLES KIT

Spray head

Fan nozzles to be installed on spray head



The kit provides n° 2 spray heads, n° 2 fan nozzles for each kind (A - B - C) and n° 2 fixing supports.

DOSAGE TABLE CEREAL-SAN®									
SPRAY HEAD INSTALLED AT THE SAME LEVEL OF THE PUMP (*)	PRESSURE GAUGE Bar/Atmospheres	CER	PRODUCT FLOW RATE						
		40 ml/ton	60 ml/ton	80 ml/ton	100 ml/ton	120 ml/ton	140 ml/ton	160 ml/ton	liter/hour SPRAY HEAD
	1	74	50	37,5	30	25	21,5	18,7	3,00
	2	90	60	45	36	30	25,7	22,5	3,60
А	3	120	80	60	48	40	34,2	30	4,80
(Cod. 650017)	4	130	87,5	65,6	52,5	43,7	37,5	32,8	5,25
	5	142,5	95	71,2	57	47,5	40,7	35,6	5,70
	6	157,5	105	78,7	63	52,5	45	39,3	6,30
	2	177,3	115	86,2	69	57,5	49,2	43,1	6,90
	3	202,5	135	101,2	82	67,5	57,8	50,6	8,10
B (Cod.650033)	4	240	160	120	96	80	68,5	60	9,60
	5	262,5	175	131,2	105	87,5	75	65,6	10,50
	6	285	190	142,5	118	95	81,4	71,2	11,40
	2	342,5	235	176,2	141	117,5	100,7	88,1	14,10
C (Cod. 650067)	3	435	290	217,5	174	145	124,2	108,7	17,40
	4	525	350	262,5	210	175	150	131,2	21,00
	5	575,5	385	288,7	231	192,5	165	144,3	23,10
	6	645	430	322,5	258	215	184,2	161,2	25,80

#### Recommended for low temperature treatments (<5°), with the organic range products (Pygrain<sup>®</sup> and Phytorob<sup>®</sup> Bio) (Optional: System for mainteining the tank at a positive temperature)

#### Example of suggested dosage:

Cereal capacity of the belt/redler /cochlea 40 ton/hr.

Suggested dosage of product 120 ml/ton.

The following information are obtained from the above table:

A (Cod. 650017) = nozzle to be installed on the spray head;

3 bar = manometer pressure;

4,80 = flow rate liter/hour of product or product mixture to be consumed (40 ton x 120 ml = 4,80 liter/hour).

(\*) when the spray head is placed at heights higher than 5mt from the level of the pump, it is necessary to increase the pressure of about 1,0 bar each 10mt of height of the pump; if you have two working spray heads, the pressure needs to be increased by 2,0 bar. To better control the delivery of product it is possible to install a pressure gauge.

### **CEREAL-SAN®:** CONE NOZZLES KIT



The kit provides n° 2 spray heads, n° 2 cone nozzles for each kind (A Tx1-B Tx2-C Tx3) and n° 2 fixing supports.

SPRAY HEAD INSTALLED AT THE SAME LEVEL OF THE PUMP(*)	PRESSURE GAUGE Bar/Atmospheres		PRODUCT FLOW RATE						
		40 ml/ton	60 ml/ton	80 ml/ton	100 ml/ton	120 ml/ton	140 ml/ton	160 ml/ton	liter/hour SPRAY HEAD
	1	75	50	37,5	30	25	21,4	18,7	3,00
	2	105	70	52,5	42	35	30	26,2	4,20
А	3	123	82	61,5	49,2	41	65,1	30,7	4,92
(Cod. Tx1)	4	135	90	67,5	54	45	35,8	33,7	5,40
	5	147	98	73,5	58,8	49	42	36,7	5,88
	6	163,5	109	81,7	65,4	45,4	46,7	40,9	6,54
	1	139,5	93	69,7	55,8	46,5	39,8	34,8	5,58
	2	183	122	91,5	73,2	61	52,3	45,7	7,32
В	3	213	142	106,5	85,2	71	60,8	53,2	8,52
(Cod. Tx2)	4	237	158	118,5	94,8	79	67,7	61,1	9,48
	5	259,5	173	129,7	103,8	86,5	74,1	64,9	10,38
	6	282	188	141	112,8	94	80,5	70,5	11,28
	1	196,5	131	98,2	78,6	65,5	56,1	49,1	7,86
C (Cod. Tx3)	2	265,5	177	132,7	106,2	88,5	75,8	66,3	10,62
	3	321	214	160,5	128,4	107	91,7	80,2	12,84
	4	360	240	180	144	120	102,8	90	14,40
	5	393	262	196,5	157,2	131	112,3	98,2	15,72
	6	421,5	281	210,7	168,6	140,5	120,4	105,4	16,86

### DOSAGE TABLE CEREAL-SAN®

#### Example of suggested dosage:

Cereal capacity of the belt/redler /cochlea 54 ton/hr.

Suggested dosage of product 100 ml/ton.

The following information are obtained from the above table:

A (Tx1) = nozzle to be installed on the spray head;

4 bar = manometer pressure;

5,40 = flow rate liter/hour of product or product mixture to be consumed (54 ton x 100 ml = 5,40 liter/hour).

(\*) when the spray head is placed at heights higher than 5mt from the level of the pump, it is necessary to increase the pressure of about 1,0 bar each 10mt of height of the pump; if you have two working spray heads, the pressure needs to be increased by 2,0 bar. To better control the delivery of product it is possible to install a pressure gauge.

### DOSAGE TABLE CEREAL-SAN® AIR-LIQUID

SPRAY HEAD INSTALLED AT THE SAME LEVEL OF THE PUMP(*)	PRESSURE GAUGE Bar/Atmospheres	CEF	PRODUCT FLOW RATE						
		40 ml/ton	60 ml/ton	80 ml/ton	100 ml/ton	120 ml/ton	140 ml/ton	160 ml/ton	liter/hour SPRAY HEAD
	0,7	75	50	37,5	30	25	21,4	18,8	3,00
A (Cod. SU16)	1,5	160	106,7	80	64	53,3	45,7	40	6,40
	4	195	130	97,5	78	65	55,7	48,8	7,80
	0,7	-	-	-	-	-	-	-	-
	1,5	-	-	-	-	-	-	-	-
B (Cod. SU26B)	2	292,5	195	146,3	117	97,5	83,6	73,1	11,70
	3	462,5	308,3	231,3	185	154,2	132,1	115,6	18,50
	4	650	433,3	325	260	216,7	185,7	162,5	26,00
	0,7	-	-	-	-	-	-	-	-
C (Cod. SU26)	1,5	-	-	-	-	-	-	-	-
	2	472,5	315	236,3	189	157,5	135	118,1	18,90
	3	975	650	487,5	390	325	278,6	243,8	39,00
	4	1300	866,7	650	520	433,3	371,4	325	52,00

Example of suggested dosage: Cereal capacity of the belt/redler/cochlea 80 ton/hr. Suggested dosage of product 80 ml/ton. The following information are obtained from the above table: A (SU16) = nozzle to be installed on the spray head; 1,5 bar = manometer pressure;

6,40 = flow rate liter/hour of product or product mixture to be consumed (80 ton x 80 ml = 6,40 liter/hour).

The kit provides n° 2 spray head, n° 2 cone nozzles for each kind (D Tx8 - E Tx10 - F Tx12 - G Tx14) and n° 2 fixing supports.

### DOSAGE TABLE POWER CEREAL-SAN® - READY TO USE PRODUCTS

SPRAY HEAD INSTALLED AT THE SAME LEVEL OF THE PUMP (*)	PRESSURE	CER	PRODUCT FLOW RATE						
	GAUGE Bar/Atmospheres	40 ml/ton	60 ml/ton	80 ml/ton	100 ml/ton	120 ml/q.le	140 ml/ton	160 ml/ton	liter/hour SPRAY HEAD
	1	559,5	373	279,7	223,8	186,5	159,8	139,9	22,38
	2	750	500	375	300	250	214,3	187,5	30,00
D (Cod. Tx8)	3	876	584	438	350,4	292	250,3	219	35,04
(000. 170)	4	988,5	659	494,2	395,4	329,5	282,4	247,1	39,54
	5	1105,5	737	552,7	442,2	368,5	315,8	276,4	44,22
	1	754,5	503	377,2	301,8	251,5	215,6	188,6	30,18
	2	942	628	471	376,8	314	269,1	235,5	37,68
E (Cod. Tx10)	3	1101	734	550,5	440,4	367	314,6	275,2	44,04
	4 (*)	1255,5	837	627,7	502,2	418,5	358,7	313,9	50,22
	5 (*)	1393,5	929	696,7	557,4	464,5	398,1	348,4	55,74
	1	933	622	466,5	373,2	311	266,6	233,2	37,32
	2	1222,5	815	611,2	489	407,5	349,3	305,6	48,90
F (Cod. Tx12)	3	1435,5	957	717,7	574,2	478,5	410,1	358,8	57,42
(000011112)	4 (*)	1623	1082	811,5	649,2	541	463,7	405,7	64,92
	5 (*)	1813,5	1209	906,7	725,4	604,5	518,1	453,3	72,54
	1	1110	740	555	444	370	317,1	277,5	44,40
G (Cod. Tx14)	2	1437	958	718,5	574,8	479	410,6	359,2	57,48
	3	1668	1112	838,4	667,2	556	476,6	417	66,72
	4 (*)	1836,6	1224,4	918,3	734,7	612,2	524,7	459,2	73,47
	5 (*)	2008,5	1339	1004,2	803,4	669,5	573,8	502,1	80,34

Example of suggested dosage:

Cereal capacity of the belt/redler /cochlea 300 ton/hr.

Suggested dosage of product 100 ml/ton.

The following information are obtained from the above table:

D(Tx8) = nozzle to be installed on the spray head;

2 bar = manometer pressure;

30,00 = flow rate liter/hour of product or product mixture to be consumed (300 ton x 100 ml = 30,00 liter/hour).

### DOSAGE TABLE POWER CEREAL-SAN® - EMULSIFIABLE CONCENTRATE PRODUCTS

NOZZLES HOLE	PRESSURE GAUGE Bar/Atmospheres	CEREAL FLOW RATE ON BELT / REDLER / COCHLEA ton/hour PER DOSE OF EMULSIFIABLE CONCENTRATE PRODUCT	PRODUCT FLOW RATE liter/hour SPRAY HEAD
	1	20	20,00
D (Cod. Tx8)	2	30	30,00
(0000 100)	4	40	40,00
E (Cod. Tx10)	4 (*)	50	50,00
F	3	60	60,00
(Cod. Tx12)	5 (*)	70	70,00
G (Cod. Tx14)	5 (*)	80	80,00

#### Example of suggested dosage:

Cereal capacity of the belt/redler/cochlea **30 ton/hr**.

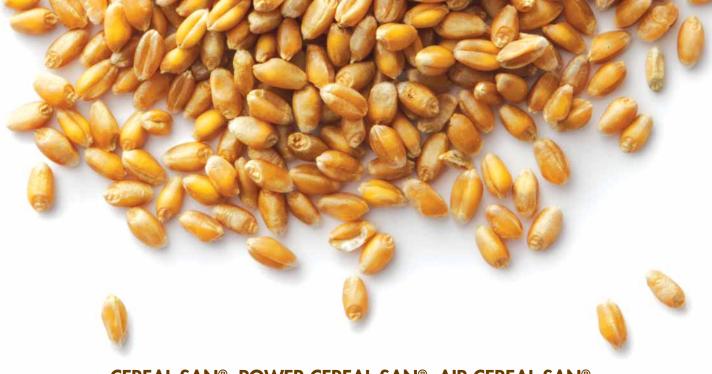
The following information are obtained from the above table:

D(Tx8) = nozzle to be installed on the spray head;

2 bar = manometer pressure;

30,00 = flow rate liter/hour of product or product mixture to be consumed.

(\*) To control pump and relate dosages.



### CEREAL-SAN®, POWER CEREAL-SAN®, AIR CEREAL-SAN®: DANFOSS NOZZLES KIT FOR MINOR DOSES





Danfoss nozzles to be installed on the spray head

Spray head

The kit provides n° 1 spray heads, n° 2 chosen Danfoss nozzles and n° 2 fixing supports.

### MICRO DOSAGE TABLE CEREAL SAN®, POWER CEREAL SAN®, AIR CEREAL SAN®

	OPERATING	CEF	PRODUCT FLOW RATE						
NOZZLES HOLE	PRESSURE 5 Bar (only)	40 ml/ton	60 ml/ton	80 ml/ton	100 ml/ton	120 ml/ton	140 ml/ton	160 ml/ton	liter/hour SPRAY HEAD
N° 1 Ø 0,20	5	10,5	7	5,2	4,2	3,5	3	2,6	0,42
N° 2 Ø 0,50		39	26	19,5	15,6	13	11,1	9,7	1,56
N° 3 Ø 0,75		60	40	30	24	20	17,1	15	2,40
N° 4 Ø 1,00		81	54	40,5	32,4	27	23,1	20,2	3,24
N° 5 Ø 1,50		120	80	60	48	56,7	34,3	30	4,80
N° 6 Ø 1,75		147	98	73,5	58,8	49	42	36,7	5,88

#### Example of suggested dosage:

Cereal capacity of the belt/redler /cochlea 24 ton/hr. Suggested dosage of product 100 ml/ton.

The following information are obtained from the above table:

 $N^{\circ}3 (\emptyset 0,75) =$  nozzle to be installed on the spray head;

5 bar = manometer pressure;

2,40 = flow rate liter/hour of product or product mixture to be consumed (24 ton x 100 ml = 2,40 liter/hour).

# **DIGITAL FLOW METER**



The new Digital Flow Meter connected to the Cereal-San<sup>®</sup>, represents an innovative step on the nebulizers' market. Professionals are now able to control the entire treatment, measuring in real-time the quantity of the supplied insecticidal product.

The Flowmeter collects the data during the transfer of the insecticide solution from the pump to the nozzle in ml/hour.

The new Flowmeter ensures to control at

any time the correct process of the dosing system, thanks to the two signals, acoustic and luminous, which warn the operator in case of over/under dosing, assuring a quick maintenance and avoiding irregular pestcontrol treatments.

Once the treatment is completed, it is possible to transfer the USB memory card from the Flowmeter to any PC or Tablet, in order to view the recorded statistics.



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