

# Nitrogen and sulfur for all crops!

ALLROUNDER

Efficiency

- ✓ Yield
- ✓ Protein



## PIASAN<sup>®</sup>-S 25/6

The yield multiplier

**skw.**  
PIESTERITZ

*The future of fertilisation.*

# Nitrogen and sulfur for all crops.

With PIASAN®-S 25/6 it is possible to apply nitrogen and sulfur in a balanced ratio. That guarantees supply of nutrients in line with requirements with maximum yields.

## The optimal nutrient ratios

Nitrogen is present in the proven combination of urea nitrogen, ammonium nitrogen and nitrate nitrogen. An immediate and sustainable nitrogen supply results from this.

The fully water soluble sulfur consists of ammonium sulfate and ammonium thiosulfate. The sulfate sulfur from the ammonium sulfate can be utilized by the plants immediately. The sulfur from the thiosulfate is converted in the soil over several stages and taken up as sulfate sulfur in line with requirements. In this concentration it has neither a urease nor a nitrification inhibiting effect. Ammonium thiosulfate as a mixing partner in the liquid fertiliser acts as a pure source of nutrients.

## Sulfur supply in line with requirements

The sulfur requirement for agricultural crops varies. Cruciferous plants such as oilseed rape have a particularly high sulfur requirement due to their high mustard oil content. The sulfur concentration in the plant dry matter of oilseed rape should not go below 0.45 %. For cereals the concentration should not be below 0.30 %. High yields and protein contents are otherwise endangered (DLG 2012).

Sulfur deficiency can result in problems with the nitrogen uptake. Nitrogen and sulfur are always required in a narrow fixed ratio for the build-up of protein. In addition nitrate cannot be converted as there is a deficiency in the sulfur containing enzyme nitrate reductase. The nitrogen incorporation in amino acids is thus disturbed and protein formation is inhibited. One kilogram of deficiency in sulfur per hectare can block the uptake of 10 to 15 kg of nitrogen. The uptake of sulfur into the plant occurs in sulfate form. Sulfur fertilisation should occur right at the start of spring growth in the event of an acute deficiency; otherwise it is also possible for quality application.

## The nitrogen-sulfur ratios of various crops

Crop	N/S ratio	S-fertiliser quantity kg S/ha
Oilseed rape	5:1	30 – 50
Grassland	8 to 12:1	20 – 40
Cereals/Sugar beet/Potatoes/Maize	10:1	10 – 25

The nitrogen-sulfur ratio in the respective crops, the prospective yield and the soil stock determine the sulfur requirement and the amount of sulfur fertilisation (source DLG: Arranging sulfur fertilisation efficiently, DLG-memorandum 373, 2012).

# PIASAN<sup>®</sup>-S 25/6 the yield multiplier.

A high level of plant compatibility is only guaranteed with liquid fertilisers in brand quality. That in turn is the pre-requisite for high yields and good harvest quality. Liquid fertilisers of unknown origin and low surface tension can lead to leaf necrosis, thereby reducing the potential yield. PIASAN<sup>®</sup>-S 25/6 has a very high surface tension of 60 – 80 mN/m. The pH value of PIASAN<sup>®</sup>-S 25/6 is in the neutral range between 6 - 7. Storage life is guaranteed even at freezing temperatures – crystallisation only starts at -15 °C.

- ✓ High nutrient contents save work, time and money
- ✓ Secure yields thanks to nitrogen and sulfur supply in line with requirements
- ✓ Fertilisation right up to the edge with an optimal nitrogen-sulfur ratio

## **PIASAN<sup>®</sup>-S 25/6 is heavier than water**

PIASAN<sup>®</sup>-S 25/6 has a density of 1.31 g/cm<sup>3</sup>. This should be taken into consideration for the fertiliser calculation, transport and storage.

### **It is easy to calculate:**

100 kg of PIASAN<sup>®</sup>-S 25/6 contain 25 kg N and 6 kg S.

The conversion factor from kg N to kg is 4.0.

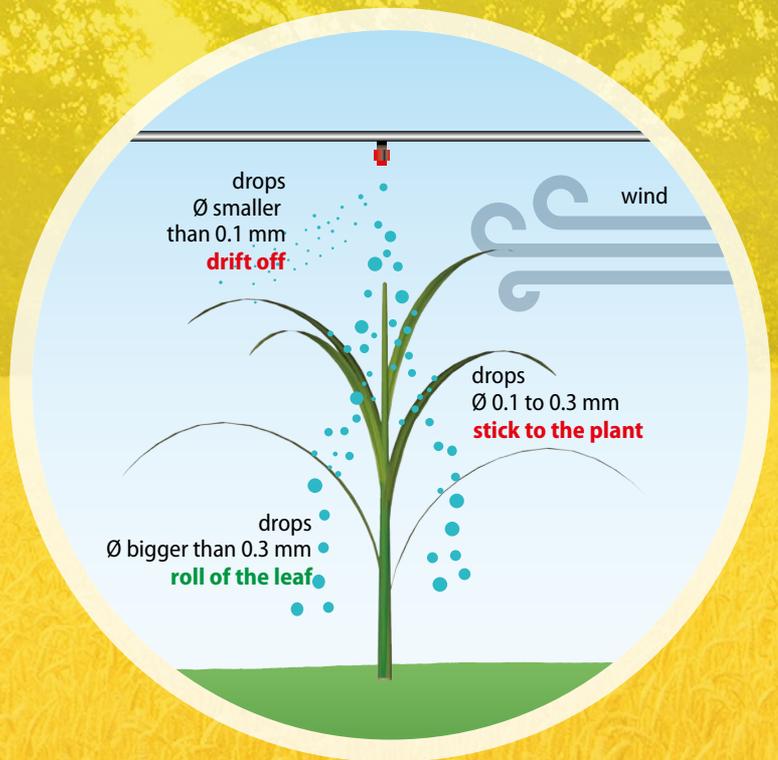
100 liters of PIASAN<sup>®</sup>-S 25/6 contain  
32.75 kg N and 7.9 kg S.

# It depends on the drop size.

## Coarse drops are the aim

The creation of coarse drops succeeds thanks to the use of anti-drift nozzles (ADN) with a low spray pressure (approx. 2 bar). A coarse drop spectrum is thus achieved.

Special liquid fertiliser- (LF) or multi-hole nozzles should preferably be used under critical conditions in order to apply the liquid fertiliser in a "rain" formation even in large quantities.



## The nozzle selection is decisive

PIASAN®-S 25/6 can be applied evenly, with precise dosage and right up to the edge with customary plant protection technology. All nozzles are well suited for the start of spring growth or at sowing. The following applies for fertilisation in crop formations: The drops should be proportionately greater for more sensitive plants and the spray pressure lower. The choice of nozzle can have a decisive effect on the plant compatibility.

You use **fan nozzles** from the start of spring growth until the bolting phase. You use anti-drift nozzles in the lower pressure range. For this purpose you should make use of the tables for liquid fertilisers (UAN) provided by the nozzle manufacturers. They are also suitable for combined application with plant protection agents, growth regulators and trace nutrients.

**Multi-hole nozzles** are recommended for sensitive plants for all fertilisation dates. The liquid fertiliser can thus be used in such a way that it is particularly gentle and low in drift while coarse drops are provided. They are not intended for application following ear emergence and not for combined application with plant protection agents.

**Drag hoses and pipes** are suitable if the customary plant compatibility is not guaranteed. They can be used at the time of ear emergence and following it. Application in winter crops at the start of spring growth should be avoided due to possible stripe formation.

If leaf necrosis should exceptionally occur following the use of PIASAN®-S 25/6, this is no cause for concern. They will grow together quickly and seldom they have any effect on yields.

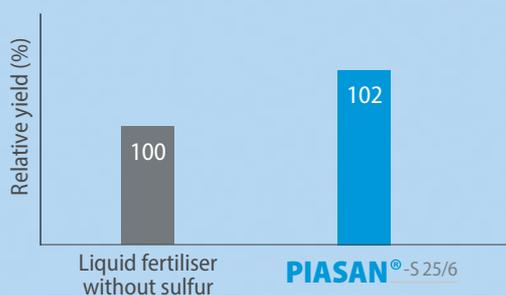
# Principles for liquid fertiliser application.

PIASAN®-S 25/6 can be used in all agricultural crops.

## A few principles must be observed for the application of liquid fertilisers on cereals and oilseed rape formations:

- Observe the crop specific recommendation for application
- No blazing sun and no temperatures above 25 °C
- Plants must be dry
- Wax layer must be formed
- PIASAN®-S 25/6 has a very high level of plant compatibility in pure form
- Thinning liquid fertiliser with water with at least a 1:4 ratio
- Should preferably be applied in the afternoon or evening
- Problem free application from shortly before sowing until three days afterwards
- Additional application possible after reaching the 3-leaf stage

## The combination of nitrogen and sulfur will enable you to achieve maximum yields



Selected tests with winter wheat, winter oilseed rape, winter barley, winter rye, grain maize, potatoes, sugar beet, oats and winter triticale at various locations from 2012 - 2016 (n = 36)

## Application during frost:

- The stock must be dry or covered with frost
- No application during freeze/thaw cycles



## Application in combination

An application of PIASAN®-S 25/6 together with plant protection agents, growth regulators or micro nutrients is in principle possible. Manufacturer instructions should be followed carefully in this case.



# PIASAN®-S 25/6 – right up to the edge – for extra yield.

PIASAN®-S 25/6 is a brand product of SKW Stickstoffwerke Piesteritz with strictly controlled quality. The high nutrient contents of 25 % nitrogen and 6 % sulfur make PIASAN®-S 25/6 into a highly-concentrated liquid fertiliser with considerable workload and efficiency advantages in terms of application, storage and transport. The following fertilisation recommendation is based on the results

of our applied research and practical experience. You should adapt these to the local conditions and the plant requirement established in line with the Fertilisation Ordinance. If you have any questions concerning the appropriate use of PIASAN®-S 25/6 you can contact our specialist advisers at any time or consult [www.duengerfuchs.de](http://www.duengerfuchs.de).

## Recommendation for application:

Crop	Application	Application date	PIASAN®-S 25/6			
			kg/ha N	kg/ha S	dt/ha	l/ha
<b>RAPESEED</b>						
1st application	ADN/LF	End of February, start of March	80 – 120	19 – 29	3.2 – 4.8	245 – 365
2nd application	LF/DH	Small bud stage (GS 39/51)	60 – 100	14 – 24	2.4 – 4.0	185 – 305
<b>WINTER CROPS</b>						
1st application	ADN/LF	Start of spring growth	60 – 80	14 – 19	2.4 – 3.2	185 – 245
2nd application	LF	GS 30 – 32	40 – 80	10 – 19	1.6 – 3.2	125 – 245
3rd application	DH	GS 39 – 49	40 – 60	10 – 14	1.6 – 2.4	125 – 185
4th application (quality wheat)	DH	GS 51 – 59	up to 60	up to 14	up to 2.4	up to 185
<b>SUMMER GRAIN</b>						
1st application	ADN/LF	at sowing	40 – 100	10 – 24	1.6 – 4.0	125 – 305
2nd application	ADN/LF	GS 30 – 32	40 – 60	10 – 14	1.6 – 2.4	125 – 185
<b>BREWING BARLEY</b>						
1st application	ADN/LF	at sowing	20 – 100	5 – 24	0.8 – 4.0	60 – 305
<b>MAIZE</b>						
1st application	ADN/LF	at sowing	100 – 180	24 – 43	4.0 – 7.2	305 – 550
2nd application	DH	GS 16 – 17	30 – 60	7 – 14	1.2 – 2.4	90 – 185
<b>POTATO</b>						
1st application	ADN/LF	at planting	60 – 120	14 – 29	2.4 – 4.8	185 – 365
2nd application	DH	before row closure	40 – 60	10 – 14	1.6 – 2.4	125 – 185
<b>SUGAR BEET</b>						
1st application	ADN/LF	at sowing	60 – 120	14 – 29	2.4 – 4.8	185 – 365
2nd application	LF/DH	up to May 20	30 – 40	7 – 10	1.2 – 2.6	90 – 120
<b>GRASSLAND</b>						
1st application	LF	Start of spring growth	80 – 100	19 – 24	3.2 – 4.0	245 – 305
Re-fertilisation	LF	after every cut	40 – 60	10 – 14	1.6 – 2.4	125 – 185
<b>VEGETABLES (HIGHLY CONSUMPTIVE)</b>						
1st application	ADN/LF	at sowing/planting	up to 200	up to 48	up to 8.0	up to 610
additional applications	DH	Re-fertilisations	up to 35	up to 8	up to 1.4	up to 110

ADN = anti-drift nozzles, LF = liquid fertiliser including multi-hole nozzle, DH = drag hose or pipe  
If the drag hose is used for application, direct plant contact must be avoided!

## PIASAN®-S 25/6 product characteristics

Urea ammonium nitrate solution with sulfur 25 (+6)

- 25 % N total nitrogen
  - 11 % N urea nitrogen
  - 5 % N nitrate nitrogen
  - 9 % N ammonium nitrogen
- 6 % S water soluble sulfur

### Characteristic values

- Density (at 20 °C): \_\_\_\_\_ 1.31 g/cm<sup>3</sup>
- pH value: \_\_\_\_\_ 6 – 7
- Start of crystallisation: \_\_\_\_\_ -15 °C
- Colour: \_\_\_\_\_ Yellow
- Biuret content: \_\_\_\_\_ max. 0.3 %
- Dynamic viscosity (at 20 °C): \_\_\_\_\_ 4.22 mPas



Further information is available on the Internet:  
[www.piasan-s25-6.de](http://www.piasan-s25-6.de)  
[www.skwp.de](http://www.skwp.de)

Do you have any questions?

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