



# Wheat

## Soil

Best development and results it gives are on medium, loamy and loam-clayey soils, with high water retention capacity, permeable, with neutral or slightly acid reaction.

The optimum pH for winter wheat is 6.5. When the pH is below 5.5, yields may be lower due to probability the appearance of P, Mo and Ca deficiencies. Deficiencies of B, Cu, Fe, Mn, P and Zn may occur on soils with pH > 7.5.

## Temperature

Winter wheat prefers average temperatures of 15–25 °C during germination, but can also tolerate temperatures between 2–30 °C. Temperature optimum for twinning and spike differentiation is 6–9 °C.

## Macronutrients

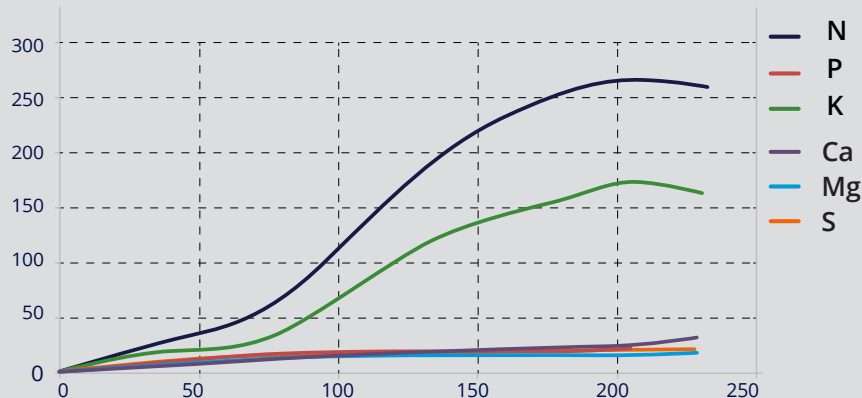
If we talk about the main production (grains) that is collected during the harvest, nitrogen is by far the most important element to be applied to compensate for nutrients extracted from the soil. But, if we talk about production (e.g., straw), potassium is as important as nitrogen, while phosphorus accounts for no more than 25% of required by N&K.

## Micronutrients

For optimal crop development and best results Mn, Zn and Cu must be applied in the next report 1:0.5:0.25. If we take into consideration including straw harvest, the Mn application rate must be at least doubled, and the ratio between Mn, Zn and Cu must be 2:0.5:0.5

## Wheat

## Dynamic of nutrient uptake



Nutrient	Grain	Stover	Total
Nitrogen	114	72	186
Phosphorus	48	16,2	64,2
Potassium	28,8	120	148,8
Sulphur	10,2	13,8	24
Magnezium	15,9	13,78	29,68
Calcium	2,65	7,95	10,6
Copper	0,07	0,03	0,1
Manganese	0,19	0,53	0,72
Zinc	0,28	0,28	0,55
Boron	0,08	0,74	0,82

## Base fertilizing

To satisfy the nutrition demands, we recommend using **Agromaster** partially coated fertilizers with controlled release of nutrients, which are able to supply the plants with the necessary macronutrients even up to 2-3 months after application. **Agromaster** can be applied either in a row at a distance of 10-15 cm from the plants or incorporated in a bed.



Timing	Product	Fertilizer Type	Longevity	Dose rate kg/ha	
				Spreading	On Row
Basic fertilization	<b>Agromaster<sup>®</sup> Start Mini</b> 21-21-5+2MgO+15 SO <sub>3</sub>	40%N CRF	2-3	-	25-50kg/ha
	<b>Agromaster<sup>®</sup> Start Mini</b> 8-32-0+5MgO+9SO <sub>3</sub> +TE	72%NP CRF	1-2		
	<b>PKplus</b> 29-5+2MgO+7S+21 CaO 20-20+2MgO+6S+15CaO 15-30+6MgO+6S+15CaO	straight	-	250-350 kg/ha	-
	<b>BIO Polysulphate</b> 0-0-14+17CaO+6MgO+48SO <sub>3</sub>	BIO	-	150-250 kg/ha	-
In vegetation	<b>Agromaster<sup>®</sup></b> 40-0-5	30% N CRF	1-2	Early spring, when the vegetation resumes. (the first internode and / flag leaf ) 150-200 kg/ha	

\* The nutrient release time (longevity) is calculated at a temperature of 21 °C.

\*\* The recommendations presented in this factsheet are based on specific conditions. Choose application rates depending on soil analysis and fertilization management. For more information about our products, please visit <https://icl-sf.com/...> or contact the ICL SF representative in your area!



**Polysulphate** is a completely natural, multi-component fertilizer that contains sulfur, potassium, magnesium and calcium.

### Method of application:

- in a row, incorporated into the soil before planting / sowing
- spreading and incorporation into the soil 2 weeks before planting or sowing.



# Foliar fertilization

Foliar fertilization applied in the right phase of vegetation is the fastest and most effective way to provide nutrients that are easily assimilated by the plant. The use of **Agroleaf Power** foliar fertilizer in the appropriate development phases eliminates the negative effects of the lack of macro- and microelements.



	Timing	Product	Dose rate	No. of treatments
liquid fertilizer	Winter hardiness	<b>Agroleaf<sup>®</sup> Liquid Booster</b> , 25-0-0+2MgO+TE --- or --- <b>Agroleaf<sup>®</sup> Liquid NitroS</b> , 17-0-0+17,5 SO <sub>3</sub> +0,4 Mn+0,4 Zn	5-10 l/ha	1
	Second visible internod	<b>Agroleaf<sup>®</sup> Liquid Balance</b> , 10-10-10+TE --- or --- <b>Agroleaf<sup>®</sup> Liquid Manganese</b> , 6 % Mn	3-5 l/ha 1-2 l/ha	
		<b>Agroleaf<sup>®</sup> Liquid High K</b> , 8-8-16+TE --- or --- <b>Agroleaf<sup>®</sup> Liquid High N</b> , 15-5-5+TE	3-5 l/ha 5-10 l/ha	
	Before flowering or stage of "milk" of the grains			
water soluble fertilizers	Autumn	<b>Agroleaf<sup>®</sup> Power High P</b> , 12-52-5+TE	3-5 kg/ha	2-3
	Winter hardiness	<b>Agroleaf<sup>®</sup> Power High N</b> , 31-11-11+TE	3-5 kg/ha	
		<b>Agroleaf<sup>®</sup> Special Mn</b> 12% Mn EDTA --- or --- <b>Agroleaf<sup>®</sup> Special Zn</b> 14% Zn EDTA	0,3-0,5 kg/ha	
	Second visible internod	<b>Agroleaf<sup>®</sup> Power Total</b> , 20-20-20+TE	3-5 kg/ha	
	Before flowering or stage of "milk" of the grains	<b>Agroleaf<sup>®</sup> Power High K</b> , 15-10-31+TE --- or --- <b>Agroleaf<sup>®</sup> Power High N</b> , 31-11-11+TE	3-5 kg/ha	

\* The nutrient release time (longevity) is calculated at a temperature of 21 °C.

\*\* The recommendations presented in this factsheet are based on specific conditions. Choose application rates depending on soil analysis and fertilization management. For more information about our products, please visit <https://icl-sf.com/>... or contact the ICL SF representative in your area!

## Specialities

### How to increase nutritional efficiency?

To solve problems caused by too hard water, **Nova PeKacid 0-60-20**, which lowers the pH of the solution, can be used for additional acidification. It is a 100% water-soluble powder that can be safely used in any irrigation system. PeKacid can be mixed with calcium and magnesium. Dosing is based on water analysis. Used in a spraying tank, it can control to the water pH to create an ideal solution for the plant protection products and thus improves their efficiency.



Lowers soil pH



Promotes nutrient uptake

Application	Dose rate
additional acidification	500 g/1 m <sup>3</sup> of water
fertigation	100-500 g/1 m <sup>3</sup> of water
irrigation system cleaning	3,5-5 kg/1 m <sup>3</sup> of water