

# Nitrogen and potassium fertilizer sources in wheat crop

Hudson Carvalho Bianchini<sup>1</sup>, Douglas José Marques<sup>1</sup>

<sup>1</sup> Professor - Universidade José do Rosário Vellano (UNIFENAS), Alfenas, Brazil

Soluble K fertilizers are the most widely used, however, their natural reserves tend to be depleted, so the rock utilization tends to be sustainable alternative to supply potential K deficiency. The aim of this study was to evaluate different sources of nitrogen and potassium fertilizers with high and low levels of solubilization, during the wheat crop development.

## Introduction

Alternative fertilization sources

K and N are involved in several nutritional processes responsible for the production and quality of the wheat crop.



The volcanic phonolithic rock, found in the region of Poços de Caldas, Minas Gerais, Brazil, with 8.5% of soluble K<sub>2</sub>O

## Results

Combinations of doses of N and K fertilization influence nutrition, growth and development of plants.

|                         | Wheat panicle dry weight (g) |                     |                |
|-------------------------|------------------------------|---------------------|----------------|
|                         | Urea                         | Low solubility urea | Average weight |
| <b>Phonolithic rock</b> | 2,63 Aa                      | 2,79 Aa             | 2,71           |
| <b>KCl</b>              | 2,93 Aa                      | 2,27 Bb             | 2,60           |
| <b>Statistical CV</b>   | 15%                          |                     |                |

These results are probably due to the solubility of the nutrients used

## Materials and Methods

The experiment was conducted in Unifenas Experimental Area (Alfenas, MG, Brazil) randomized block design, factorial 2 x 2, 5 blocks, totaling 20 plots. Each plot represents 120 plants.

| Treatments | Urea ha <sup>-1</sup> | Low solubility urea ha <sup>-1</sup> | KCl ha <sup>-1</sup> | Phonolithic rock ha <sup>-1</sup> |
|------------|-----------------------|--------------------------------------|----------------------|-----------------------------------|
| T1         | 45 kg                 |                                      | 66 kg                |                                   |
| T2         | 45 kg                 |                                      |                      | 470 kg                            |
| T3         | -                     | 45 kg                                | 66 kg                |                                   |
| T4         | -                     | 45 kg                                |                      | 470 kg                            |

## Conclusions

The results showed that the association of nitrogen and potassium fertilizers sources of similar solubility was the most indicated to the wheat crop development.

## Acknowledgements