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## RESPONSE OF RICE VARIETY TRIVENI TO GRADED DOSES OF MAGNESIUM SILICATE

Recognition of silicon as an essential nutrient for rice plant is comparatively recent and many trials are being carried out in the major rice growing countries particularly in Japan. Azuma *et al.* (1961) reported an increase in the dry matter production, height of plants and length of earheads and roots by the addition of silicon to rice.

Liming is an approved practice in rice cultivation in Kerala either as pure lime or as dolomite. However there is a constant demand for cheaper liming material since the cost of the lime and dolomite are becoming prohibitive. Very recently large reserves of magnesium silicate have been observed in the Malabar area and potential use of this material as a substitute for lime is gaining importance. Hence a field study was conducted during kharif season of 1975 at Agricultural College, Vellayani to find out the response of rice variety Triveni to different levels of magnesium silicate. The experiment was laid out in randomised block design with four replications. The levels of magnesium silicate tried were 0, 500, 1000, 1500 and 2000 kg per hectare and was applied at the time of planting. A uniform application of 80 kg N, 40 kg P O<sub>5</sub> and 40 kg K<sub>2</sub> O per hectare was given to all the plots.

The data on the yield of grain and straw presented in Table 1 showed that no statistically significant difference in the yield of grain and straw could be obtained even upto 2000 kg magnesium silicate per hectare. However the maximum average yield was at the rate of 1500kg magnesium silicate application per hectare. Divergent views have been expressed in literature regarding the role of silicon in increasing the crop yield. Silicon was found to have a beneficial effect on rice yield by Takijima *et al.* (1959). But Gansman (1962) could not observe any response in the yield of rice by silicon application.

The present study indicates a positive beneficial effect of magnesium silicate on the yield of grain and straw. Further it was particularly note worthy that a practically disease free stand of the crop was obtained during the whole period of the experiment and no fungicidal application was necessary during the crop period. Yoshida *et al.* (1959) have also reported a decreased susceptibility to disease as one of the beneficial effects of silicon application. A detailed study has to be initiated to evaluate the individual role of magnesium and silicon on rice in acid soils.

**Table 1**  
**Average yield of grain and straw per hectare**

Treatments	Grain yield kg/ha	Straw yield kg/ha.
Magnesium silicate 0 kg/ha.	3083.33	5937.50
Magnesium silicate 500 kg/ha.	3125.00	4687.50
Magnesium silicate 1000 kg/ha.	2812.00	5416.60
Magnesium silicate 1500 kg/ha.	3541.70	7083.33
Magnesium silicate 2000 kg/ha.	3125.00	5520.80
F test	Sig	N. S
	CD: 676.00	SEm: 592.00

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#### സംഗ്രഹം

വിവിധ *rarogilas* മഗ്നീഷ്യം സിലിക്കേറ്റ് നൽകുന്നതുകൊണ്ട് ത്രിവേണിയെന്ന ഇനം നെല്ലിന്റെ വിളവിലുണ്ടാകുന്ന വ്യത്യാസം മനസ്സിലാക്കുന്നതിനുവേണ്ടി ഒരു പരീക്ഷണം 1975 ലെ ഓരീഫ് വിള (ഒന്നാം വിള) കാലത്ത് വെള്ളായണി കാർഷികകോളേജിൽ നടത്തുകയുണ്ടായി.

പരീക്ഷണത്തിൽ ഹെക്ടറോന്നിന് 500, 1000, 1500, 2000 കിലോ എന്ന *rarag* വിൽ മഗ്നീഷ്യം സിലിക്കേറ്റ് അടിസ്ഥാനവളമായി നൽകുന്നതുകൊണ്ട് നെല്ലിന്റെ വിളവു വർദ്ധിപ്പിക്കാമെന്നും, കൂടാതെ ചെടിയുടെ രോഗപ്രതിരോധ ശക്തി കൂട്ടാമെന്നും മനസ്സിലാക്കുകയുണ്ടായി.

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College of Agriculture  
Vellayani, Kerala

ABRAHAM THOMAS  
M. M. KOSHY

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