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Effects of hygienised human urine on the productivity of sorghum (*sorghum bicolore*), in the agro-ecologic conditions of Sabtenga, Burkina Faso

The regional centre for low cost water supply and sanitation (Crepa), addressing the problems attached to sanitary questions, have taken a great interest in the concept of ecological sanitation in seven of its member countries, among them Burkina Faso. This concept is based on the management and upgrading of human excreta as a fertiliser resource in agriculture. To that effect, with the aim to contribute to the amelioration of soil fertility and crop yield, agronomic research following the principles of ecological sanitation, is being conducted by Crepa headquarters at an experimental site in the village of Sabtenga about 20 km north-west of Ouagadougou (Burkina Faso).

This study, which directs the utilisation of hygienised human urine as a fertiliser resource on an ameliorated variant of sorghum named "SARIASO 14", has for specific objectives to (1) determine the effects of human urine on the chemical properties of the soil, the growth, the development and the yield of sorghum; (2) identify the optimal usage dose; and (3) to study the relation between applied dose of urine and the crop's sensibility to diseases. The method used for this test is the Fischer block in four repetitions.

The fertilisers used in the different treatments are: Super Phosphate Triple, serving as source of phosphorous (46% P₂O₅); Potassium Chloride (KCl), serving as the potassium source (60% K₂O); cereal complex: vulgarised mineral fertiliser; urea (46% N); hygienised human urine serving as nitrogen source.

The soil samples were taken at the site before, during and after the experiment and then analysed. The samples of urine, collected from the Ecosan latrines in the village Sabtenga were analysed before application on plants to determine the possible existence of germs and its content of nitrogen, phosphorous and potassium.

Six different treatments (T0 – T5) were used in the test.

Number	Sorghum: studied element: nitrogen
T0	Reference , no fertiliser
T1	PK
T2	PK + urine Q/2
T3	PK + urine Q
T4	PK + urine Q + Q/2
T5	Vulgarised mineral fertiliser (FMV)

Q = urine dose Q ; Q/2 = half dose of urine ;
Q+Q/2 = urine of dose Q + half dose

The different observations were made on the four central seed holes on the two central lines. The measured parameters were: shoot rate, height of plant, stem diameter, mean length of panicle, weight of one thousand grains, estimation of yield and dry matter content of stems.

The results show that hygienised human urine applied on plants in different doses as fertiliser remains competitive with vulgarised mineral fertiliser in terms of crop yield among other things. The method used for calculation and statistical interpretation of the results was the variance analysis.