was noted that 0.1 ml of 0.05 M potassium iodide along with 0.1 ml of 0.1 M CTA was sufficient to extract up to 30 μg of platinum in a single extraction. Increased concentration of the reagents, however, did not bring about any significant change in the maximum value of absorbance. Order of adding the reagents had no effect on colour development.

To test the effects of diverse ions on the extraction behaviour, platinum (IV) was extracted and determined according to the recommended procedure in presence of the desired foreign ions. Extraction was carried out from 0.5 M hydrochloric acid medium. An ion was considered to interfere if the recovery of platinum differed by more than ±3% from the actual amount taken. Platinum (IV) (30 μg) could easily be determined without interference in presence of 100–200 fold excess of the following ions: Co (II), Ni (II), Cu (II), Pd (II), Fe (III), Cd (II), Zn (II), Mo (VI), V (V), Mn (II), U (VI), Zr (IV), Rh (III), Pb (II), Al (III), Ca (II), Ba (II), Sr (II), Be (II), Bi (III), Ce (III), Cr (III), La (III) and Mg (II). The system develops no colour in presence of mercury (II) and thorium (IV). In presence of silver, formation of some yellowish precipitate hampers the procedure.

Amongst the anions tested 200-fold excess of the followings do not interfere: borate, phosphate, tartrate, citrate, fluoride, phthalate, ascorbate, oxalate and EDTA. In presence of nitrate, high results are obtained. However, thiosulphate, thiocyanate and thiourea must be absent as these inhibit the colour development.

The precision and accuracy of the proposed method were tested by analysing solutions containing a known amount of platinum following the recommended procedure. The average of six determinations of 30 μg of Pt (IV) was 29.25 μg with a relative mean deviation of 2.84%. The process is very simple and rapid requiring only 10–15 min for each run.

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AZOTOBACTER POPULATION AS INFLUENCED BY SOIL PROPERTIES IN SOME SOILS OF NORTH KARNATAKA

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AZOTOBACTER is a free living nitrogen fixing bacteria. Its population density varies from almost zero to several thousands per gram of soil depending upon soil type and its properties[1]. The organic carbon content, hydrogen ion concentration (pH), sodium salts and other elements may influence the growth and nitrogen fixation of Azotobacter. Hence a study was undertaken to investigate the relationship of some soil properties with Azotobacter population.

Surface soil samples, viz., acid soil (Sirsi), forest soil (Prabhunagar), red and black soils (Dharwad) and salt-affected soils (Hooli) were collected.

Azotobacter population in different soils was enumerated by dilution plate method using Norris nitrogen-free medium[2]. The chemical analysis of the soil samples was carried out by standard methods. Soil pH was determined by digital pH meter (model Elico, LI-122, in 1:2.5 soil water ratio), electrical conductivity was measured with the help of EC bridge (model Elico, CM 82T) and organic carbon[3], total nitrogen[4] and exchangeable cations[5], were ditermined by the methods reported earlier.

The results are presented in table 1. Azotobacter population is governed by some soil properties. The pH of these soils ranged from 5.6 to 8.1. Azotobacter requires almost neutral to slightly alkaline soil reaction for their growth[6,7].

The highest Azotobacter population (84×10^3/g) was observed in forest soil of Prabhunagar wherein it has the maximum amount of organic carbon (2.58%). The lowest population (6×10^3/g) was found in acid soil of Sirsi with 0.94% organic carbon. The trend is, with increase in organic carbon content in the soil the Azotobacter population has increased[8] ($r = 0.724^*$). Though organic carbon content is more in salt-affected soil of Hooli and acid soil of Sirsi than red soil of Dharwad, the Azotobacter population is less in those soils probably because of high exchangeable sodium in salt-affected soil of Hooli and low pH condition in acid soil of Sirsi.

Lack of organic matter in soil is a limiting factor in the proliferation of Azotobacter.

Table 1 *Azotobacter population as influenced by some soil properties*

Soil	pH	EC mmhos/cm	Azotobacter population/g ($\times 10^3$)	Organic carbon (%)	Total nitrogen (%)	Exchangebale cations (meq/100 g)			
						NA	K	Ca	Mg
Acid soil (Sirsi)	5.60	0.04	6.00	0.94	0.09	0.38	0.15	11.4	5.4
Forest soil (Prabhunagar)	6.30	0.04	84.00	2.58	0.24	0.91	0.17	29.4	8.6
Red soil (Dharwad)	7.30	0.17	29.50	0.46	0.04	0.31	0.18	14.2	4.4
Black soil (Dharwad)	7.55	0.13	65.50	1.20	0.01	0.23	0.06	25.4	9.0
Salt-affected soil (Hooli)	8.10	5.44	8.00	1.10	0.01	21.30	0.24	1.4	0.8

Table 2 *Association of Azotobacter population with some soil properties*

pH	−0.049
EC mmhos/cm	−0.492
Organic carbon (%)	0.724*
Total nitrogen (%)	0.555
Sodium (meq/100 g)	−0.477
Potassium (meq/100 g)	−0.478
Calcium (meq/100 g)	0.939**
Magnesium (meq/100 g)	0.838**

*Significant at 5%; **Significant at 1%.

Table 2 indicates significant correlation between calcium and magnesium versus Azotobacter population but the trend is not definite.

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HAEMATOLOGICAL CHANGES IN INDIAN DESERT GERBILS (*MERIONES HURRIANAE*, JERDON) FED WITH MAIZE DIETS CONTAINING ORGANIC ACIDS

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THE antimicrobial food additives such as sorbic acid and acetic acid have been generally recognized as safe (GRAS) by the Food and Drug Administration. As sorbic acid is known to possess the properties of low mammalian toxicity[1], it has been approved by the environmental protection agency for use in whole grains and other raw agricultural commodities[2]. A large number of feeding trials on albino rats have been carried out with feeds containing acetic acid, propionic acid and sorbic acid[1,3-5]. However, since these organic acids have not been evaluated for their haematotoxic potential in the Indian desert gerbils, an attempt was made to study the effect of acetic acid and sorbic acid on the blood parameters of weaning gerbils.

Indian desert gerbils (*Meriones hurrianae*, Jerdon) were bred in captivity in the animal house of CFTRI. Four-week-old, 18 male and 18 female gerbils weighing 47-60 g were selected and grouped randomly with 6 males and 6 females in a group. Freshly harvested maize was partly broken in a laboratory mill and was then treated with the organic acids, viz., sorbic and acetic at 1% level. The first group received maize diets without any acid treatment. The second group was fed with maize treated with acetic