



Genome of the Day: *Klebsiella sp.*

The image is a composite graphic. On the left, a white rectangular box contains four elements: a petri dish with yellow bacterial colonies, a DNA sequencer with a screen, a test tube with a red cap, and a chemical diagram showing the conversion of nitrogen gas (N₂) into ammonia (NH₃). The background of the entire slide is a photograph of a person's hands holding dark, rich soil, with green foliage visible in the lower-left corner.

Promising isolate that can serve as a natural source of nitrogen fertilizer.

Klebsiella sp.

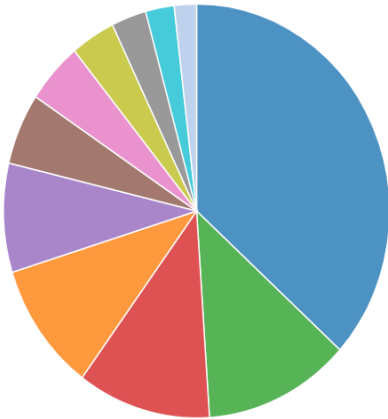
Genome Accession Number: INRP000250

Quality of Genome Assembly and Annotation:

Results from indigenously developed **BHARAT** analysis pipeline:
(**B**acterial **H**ybrid genome **A**ssembly and **R**apid **A**nnnotation **T**oolset)

Table 1: Assembly Details	
Contigs	54
GC Content	55.76
Contig L50	8
Genome length	6,134,361 bp
Contig N50	240,986

Table 2: Annotated Genome Features	
CDS	6.046
tRNA	76
rRNA	4
Repeat Regions	19



- Subsystem (Subsystems, Genes)
- METABOLISM (138, 1270)
 - PROTEIN PROCESSING (46, 267)
 - STRESS RESPONSE, DEFENSE, VIRULENCE (42, 212)
 - ENERGY (38, 421)
 - MEMBRANE TRANSPORT (32, 191)
 - DNA PROCESSING (21, 118)
 - CELLULAR PROCESSES (18, 94)
 - RNA PROCESSING (14, 77)
 - CELL ENVELOPE (11, 82)
 - MISCELLANEOUS (9, 56)
 - REGULATION AND CELL SIGNALING (7, 33)

Table 3: Antimicrobial Resistance Genes

AMR Mechanism	Genes
Antibiotic activation enzyme	KatG
Antibiotic resistance gene cluster, cassette, or operon	MarA, MarB, MarR
Antibiotic target in susceptible species	Alr, Ddl, dxr, EF-G, EF-Tu, folA, Dfr, folP, gyrA, gyrB, inhA, fabI, Iso-tRNA, kasA, MurA, rho, rpoB, rpoC, S10p, S12p
Antibiotic target replacement protein	BcrC
Efflux pump conferring antibiotic resistance	AcrAB-TolC, AcrAD-TolC, AcrEF-TolC , AcrZ, EmrAB-OMF, EmrAB-TolC, EmrD, MacA, MacB, MdfA/Cmr, MdtABC-TolC, MdtL, MdtM, SugE, TolC/OpmH
Gene conferring resistance via absence	gidB
Protein altering cell wall charge conferring antibiotic resistance	GdpD, PgsA

Genome Assembly

