UNIVERSITÀ DEGLI STUDI DI PALERMO
DIPARTIMENTO DI INGEGNERIA CIVILE, AMBIENTALE E AEROSPAZIALE
IRSA CNR
Scuola Umbra di Amministrazione Pubblica
IWA International Water Association Italian National Committee
Berkeley University of California

22th INTERNATIONAL SPECIALIZED COURSE
OPERATION AND CONTROL OF ACTIVATED SLUDGE PROCESSES USING MICROBIOLOGICAL ANALYSIS
Perugia -Italy

FILAMENTOUS MICROORGANISMS IN ACTIVATED SLUDGE

MYCOLATA (*Nocardioforms*) (several genera)

UNDER PHASE CONTRAST OBSERVATION		
Sulfur Granules	*In situ*	-
	S Test	-
Other Cell Inclusions		PHA
Filament Diameter		1.0 µm
Filament Length		5 - 30 µm
Filament Shape		Irregulary shaped
Filament Location		Mostly within the floc or dispersed
Cell Septa clearly observed		+
Indentations at Cell Septa		-
Sheath		-
Attached Growth		-
Cell Shape and Size		Variable 1.0 x 1.0 - 2.0 µm
Notes:		True branching, Foam former
UNDER DIRECT ILLUMINATION		
Gram Stain		+ (strongly)
Neisser Stain	*Filament*	-
	Granules	+

Phylogenetic affiliation:

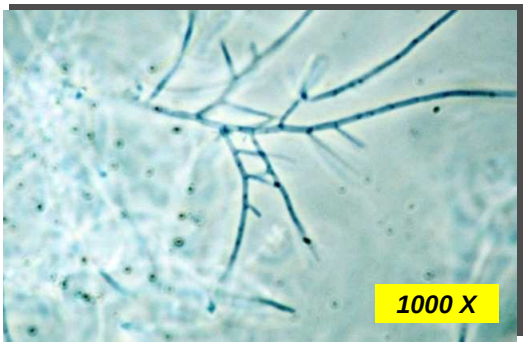
Actinobacteria

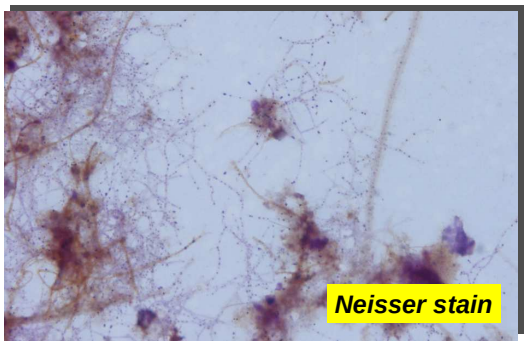
Causes:

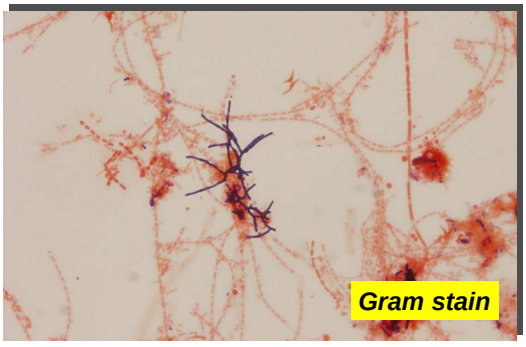
- Foam trapping and recycle
- Low F/M

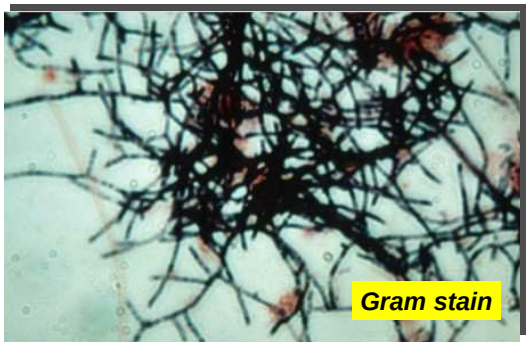
Remedies:

- Eliminate foam trapping and recycle
- Surface foam wasting
- Add cationic polymer
- Anoxic, aerobic or anaerobic selectors
- Decrease sludge age
- Cl_2









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