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Surfactant resistance in natural Neurospora populations.

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Abstract
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Seven wild type strains collected in different countries were obtained from the Fungal Genetics Stock Center and screened for resistance to four surfactants (Table 1). Five of the wild type strains show resistance to dequalinium chloride (DC), cetyltrimethyl ammonium bromide (CTAB), and benzalkonium chloride (BAC). The North African strain, isolated by Dr. Bill Hansen from leaves of Oryza and Cyperus species in the Ivory Coast (personal communication with FGSC), shows higher levels of resistance than the mutant induced in the laboratory (AL-Saqur, A.M. 1976 Ph.D. Thesis, Aberdeen University, Scotland). Honduras wild type is resistant to CTAB and BAC but sensitive to DC and polymyxin, similar to the pattern of resistance shown by one of the UV-induced mutants. The Philippine Islands 4 shows a higher level of resistance to DC and BAC but is sensitive to the other surfactants. This is a new pattern of resistance not encountered among the laboratory induced mutants.

TABLE 1

Cross-resistant studies on wild type strains
(++ = very good growth; + = good growth; - = no growth)

Wild type strain	FGSC number	m.t.	Resistance to (µg/ml)* DC	CTAB	BAC	Polymyxin B Sulphate 150
N. crassa						
North Africa I	430	A	+ 20	++ 10	++ 12	
Panama CZ30.4	1130	a	++ 5	+ 10	++ 6	
Panama CZ30.6	1131	A	++ 2.5	++ 5	++ 6	
N. intermedia						
Java	431	a	++ 5	++ 5	+ 6	
Fiji	432	a	++ 5	++ 5	++ 6	
Honduras	1300	a		++ 5	++ 6	
Philippine Islands 4	433	a	++ 20	-	+ 15	

*Drugs are incorporated in 2ml slants of Vogel's medium

Exact details of the isolation of the wild types tested here are unknown, and it is impossible to say whether the resistance to surfactant developed following the application of fungicides or as a response to naturally occurring surfactants.

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