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Note

The IRRI blue-green algae collection and computerized information on the strains available for distribution

P.A. Roger¹ & S. Ardales

Soil Microbiology Division, International Rice Research Institute, P.O. Box 933, Manila, Philippines (ORSTOM-IRRI collaborative program on nitrogen fixation); ¹present address: Laboratoire de Microbiologie ORSTOM, Université de Provence, Case 87, 3 Place Victor Hugo, F-13331 Marseille Cedex, France

The IRRI collection of N₂-fixing blue-green algae (BGA) was initiated in 1979 as part of a collaborative research program of ORSTOM (France) and IRRI to study the ecology of BGA and their possible use as biofertilizer in wetland rice culture. In 1991 the collection comprises 204 unialgal strains originating from 21 countries (Table 1). We have adopted a classification that is limited to the genus level and uses morphological criteria directly observed on material growing on petri dishes, as recommended by Rippka *et al.* in 1979. Strains are maintained by subculturing in liquid medium and on agar slants.

Strains were described using a program designed by the authors with Hypercard[®] software. Information on the strains is compiled in six interconnected Hypercard stacks:

- Cards of the main stack 'Collection' (486 kbyte) provide following information on the strains:
 - genus, IRRI's code, other code when applicable;
 - country and location of origin, and environment the strain was isolated from;
 - year of isolation, year of acquisition in IRRI's collection, and information on strain conservation;
 - information on soil properties of the environment the strain was isolated from;
 - standardized description of the visual appearance of the culture in liquid and on solid medium;
 - standardized microscopic description of the strain; and

Table 1. Number of strains and origin of the BGA collection (1991).

Genèra	Africa		Asia		Europe	Other regions	Total
	Senegal	Other	Philippines	Other			
<i>Anabaena</i>	13	5	7	15	5	5	50
<i>Calothrix</i>	23	2	11	7	1	1	45
<i>Fischerella</i>	4	2	4	3	1	0	14
<i>Gloeotrichia</i>	0	0	2	0	0	0	2
<i>Nodularia</i>	0	0	0	1	0	0	1
<i>Nostoc</i>	28	9	12	17	4	1	71
<i>Scytonema</i>	1	3	1	4	0	0	9
<i>Tolypothrix</i>	0	0	0	2	1	0	3
Non-fixing	8	0	0	0	1	0	9
Total	77	21	37	49	13	7	204

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- additional notes including bibliographic references on the strain or its environment.
- The stack 'Describe' (311 kbyte) is an on-screen tool to describe (1) cultures of strain growing on solid and liquid media (aspect and color), and (2) their morphological features under the microscope. Terminology used for the description is connected to definitions in the 'Glossary' stack for on-screen help.
- The stack 'Keys' (172 kbyte) provides on-screen taxonomic keys for genera encountered in ricefields.
- The stack 'Glossary' (65 kbyte) provides definitions of specific terms or concepts including terms used for the description of BGA in the stack 'Describe'.
- The stack 'Methods' (32 kbyte) provides general information on methods for (1) the maintenance, mailing and revival of the strains, and (2) estimating BGA abundance and activities in ricefields.

- The stack 'Sites' (25 kbyte) provides information on the environments from which the strains originate.

The descriptions of the strains and the methods for isolation, culture, and conservation are also presented in a booklet entitled 'The Blue-green Algae Culture Collection at IRRI'.

Upon request, strains of the collection are mailed together with a copy of the booklet and/or copies of the Hypercard stacks. We send cultures as dried material on paper strips because that way they remain viable for several months and are easy to mail and revive in liquid medium. A copy of the Hypercard stacks is provided free upon the receipt of two 4¹/₂ inches double-sided diskettes. The stacks are not protected and can be modified. Their utilization requires a Macintosh computer, a hard disk, and the Hypercard 2 program.

Requests should be addressed to Soil Microbiology Division, IRRI, Los Baños, Laguna, Attention: Susan Ardales/P.A. Roger.

Collection Describe Keys Glossary Methods Sites Transfer

Anabaena sp. OK Find done

C o d e	IRRI	Ab 02 Ph
	Old	A Banawe 6

Get info

O r i g i n	Country	Philippines
	Location	Banawe, Pitan
	Envt.	ricefield
	Date	i 1982 a 1982
	Person to ackn.	PA Roger, ORSTOM, France,

Conservation	Tests of viability
Paper 25/03/86	05/01/87 +, 16/06/87 -
Powder	
Soil 00/01/85	15/03/85 +, 17/11/87 +

Origin: soil sample plated on BG-110.
Soil properties: see Banawe, Pitan (?)
Visual description:

- A 47-day-old culture on solid medium shows localized spreading growth, fibrous in aspect, located on the agar surface. It has dull luster, is translucent and medium yellowish green. The medium is not colored.
- A 61-day-old culture in liquid medium has an aggregative sedimentary type of growth, growing in or at the surface of the medium. The culture is medium green. The medium is not colored.

Microscopic observation:
 (52-day-old culture on solid medium): Trichomes have no ramifications. They are uniseriate, single, contorted, and show no tapering. No sheath is observed. Motility of the trichomes is not observed. Vegetative

Fig. 1. Example of a card of the stack 'collection'.