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Cultural studies of Streptomyces griseus (Krainsky em. Waksm. et al.) Waksman et al. Agra strain.

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Recent reviews indicate growing interest in the field of controlling plant diseases with the help of antibiotics and search is being continued to isolate newer antibiotic producing organisms. *Streptomyces griseus* which produces some of the well known antibiotics, has a large number of strains. These strains differ in their cultural characters. A new strain of *Streptomyces griseus* isolated from Agra soil has been found antagonistic to *Alternaria solani* and a few other fungi and bacteria (Basu Chaudhary 1959). This paper deals with the cultural characters of the new strain of *Streptomyces griseus*.

Cultural Characters.

Streptomyces griseus Agra strain was grown on 15 different media that are commonly used in the study of the members of the genus *Streptomyces*. The type of growth, pigment production and other characteristics were noted. Observations were recorded after incubation for 12 days at 25° C; the cultures, however, were kept much longer in order to observe changes in culture characteristics, if any. The colour names begining with capitals are those given by Ridgway (1912).

1. Asparagine agar: Growth abundant. Colony granular, completely covered with yellowish white powdery, chalky aerial mycelium. Reverse Buff-Yellow. Soluble pigment faint, yellowish. Odour earthy.

2. Czapek agar: Growth abundant. Colony spreading, flat, powdery, Olive-Buff. Reverse Colonial Buff. Soluble pigment Yellowish Ocre. Odour earthy.

3. Tyrosine agar: Growth scanty. Colonies moist, flat, with or without concentric rings. Marguerite Yellow. Reverse same colour. No aerial mycelium. No soluble pigment.

4. Gelatine: Growth fairly good. Colony folded, covered with white to yellowish white powdery, aerial mycelium. Liquefaction rapid. Soluble pigment absent.

5. Peptone 10% solution: Some fluffy colonies on glasswall beneath the surface. Soluble pigment absent.

6. Maltagar: Growth abundant. Colony rugose, covered with yellowish white aerial mycelium. Reverse Mars Yellow. Odour earthy.

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7. Starch agar: Growth moderate. Colony flat, powdery, Olive-Buff with minute craters left by guttation droplets and with 1 mm. broad white margin. Reverse-Reed Yellow, except 1 mm. margin which is hyaline. No soluble pigment. Hydrolysis good.

8. Potato Glucose agar: Almost same appearance as on Czapek agar but lacking concentric ring formation. Reverse generally darker varying from Deep Colonial Buff to Isabella Color and Light Brownish Olive in the darker parts. Soluble pigment dirty light olive brown. Earthy smell faint.

9. Potato plug: Growth good. Colony cerebriform, raised, Olive Buff, white at margin. Reverse Isabella Color to Brownish Olive. Potato slightly darkening to Buffy Olive just beneath the colony. Odour disagreeable, earthy, putrefactive.

10. Glucose Nitrate agar: Same appearance as on Czapek agar.

11. Nutrient agar: Growth abundant. Colony cerebriform, Light Brownish Olive, Olive-Buff at the margin. Patches of Olive-Buff, powdery aerial mycelium at margin and upper part of colony. This aerial mycelium becomes white to grayish white after two months.

12. Sabouraud Glucose agar: Growth abundant, same characteristics as on Potato Glucose agar. Reverse Ochraceous-Tawny, with darker (Prout's Brown) spots. Soluble pigment faint yellowish brown. Odour putrefactive.

13. Milk (with and without litmus): Coagulation with subsequent peptonization. Ring formation at the surface. Grayish vegetative mycelium with white, powdery aerial mycelium. pH changing towards alkalinity.

14. Ottmeal agar: Characteristics of growth and colony identical to those on Czapek agar. Reverse darker (Olive Lake). Soluble pigment faint greenish.

15. Peptone (3%) agar: Growth abundant, Olive Buff, lacking aerial mycelium. No soluble pigment.

The cultural studies of this strain best agree with *Streptomyces griseus* W 3475. However, there are a few marked differences between the two. In Starch agar, the hydrolytic power of *S. griseus* W 3475 was not so strong as that of the strain under investigation nor the latter produced aerial mycelium on 3% Peptone agar whereas *S. griseus* W 3475 does. On Maltagar the new strain was sporulating heavily while *S. griseus* W 3475 showed only traces of sporulating hyphae.

The newly isolated antagonist may be, therefore, regarded as a new strain of *Streptomyces griseus* and has been named as *Streptomyces griseus* (Krainsky em. Waksm. et al.) Waksman et al. Agra strain. The validity of the nomenclature has been confirmed by reference to the Centraalbureau voor Schimmelcultures, Baarn, Holland.

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