

## Short Communications

# Occurrence of Southern Bean Mosaic Virus on Cowpea in Senegal

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*With one figure*

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## Abstract

For identification of cowpea viruses existing in Senegal. 1 SC samples collected from 4 different locations were examined. Initially agar gel diffusion tests were employed to identify the viruses present in these samples using antisera to 3 beetle-transmitted viruses viz. CPMV, SBMV and CMV. The results indicated the presence of SBMV in 78 samples mostly from Casamance while none of these viruses were detected in the samples collected from northern Senegal. These results were later confirmed by Enzyme-linked Immunosorbent Assay (ELISA). This is the first report of occurrence of SBMV in Senegal.

## Zusammenfassung

### Auftreten des Southern Bean Mosaic Virus an der Augenbohne im Senegal

Es wurden 180 Augenbohnenproben aus 4 verschiedenen Gebieten im Senegal gesammelt, um die Existenz der Viren zu beweisen. Zuerst wurden Agardiffusionstests mit Hilfe von Antisera auf drei kaferübertragende Viren, und zwar CPMV, SBMV und CMV, angewandt, um die in den Proben vorhandenen Viren zu identifizieren. Die Ergebnisse zeigten das Vorhandensein von SBMV in 78 Proben, die zum größten Teil aus der Provinz Casamance im Süd-Senegal stammten. Keine Probe aus Nord-Senegal weist eines der getesteten Viren auf. Diese Ergebnisse wurden zu einem späteren Termin durch ELISA bestätigt. Über ein Auftreten des SBMV im Senegal wird zum ersten mal berichtet.

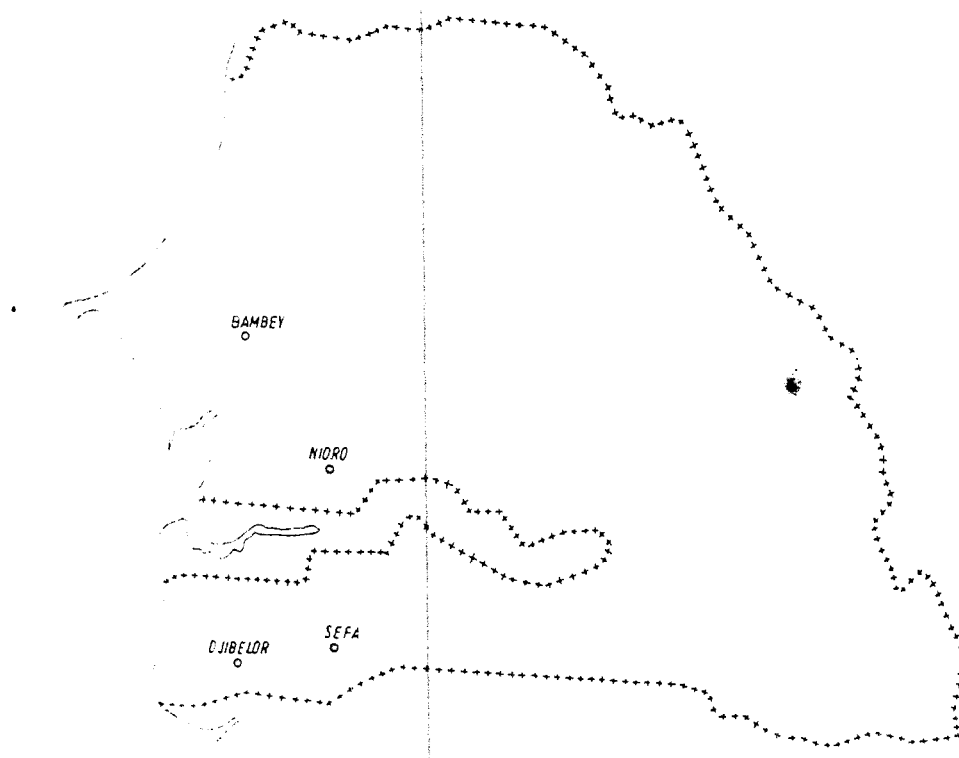
Virus diseases are considered to be a major constraint in production of cowpea (*Vigna unguiculata* [L.] Walp) and several viruses are known to infect cowpea (THOTTAPPILLY and ROSS 1985).

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Cowpeas are often affected by virus diseases in all ecological zones of Senegal, although, they are more pronounced in Casamance region in southern Senegal. The symptoms of the disease showed slight variation in the different regions. The disease in northern Senegal showed light green mottle with severe leaf distortion while that in Casamance showed mottle with more yellowing and rare leaf distortion. This difference in symptoms is probably due to different viruses existing in two geographical zones in Senegal.

The distribution of the beetle, *Ootheca mutabilis*, vector of cowpea mosaic virus (CPMV) (CHANT 1959, BOCK 1971), cowpea mottle virus (CMoV) (SHOYINKA *et al.* 1978, ALLEN *et al.* 1981) and southern bean mosaic virus (SBMV) (ALLEN *et al.* 1981) interestingly showed an abundance in the Casamance region (Dr. AZIZ MBAYE, pers. comm.).

In order to identify the viruses occurring in Senegal, virus affected leaf samples of cowpea were collected from different locations viz. Bambey (North Central), Nioro (South Central), Sefa and Djibelor (Casamance region in southern Senegal) during October 1986. Out of 180 samples collected, 42 were from Bambey, 17 from Nioro, 14 from Sefa and the rest were from Djibelor. In our initial experiments agar gel diffusion tests were employed to identify the viruses



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Fig. 1. Map of Senegal showing locations of sample collection

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present in these samples using antisera to the three beetle-transmitted viruses, viz. CPMV, SBMV and CMeV obtained from IITA, Nigeria.

All samples collected from Bambey showed negative reaction against antisera of the 3 viruses indicating that none of these viruses were prevailing in this region. Five samples collected from Nioro and 4 from Sefa showed positive reaction to antiserum of SBMV but negative reaction to antisera of CPMV and CMeV. Rest of the samples from these locations showed negative reaction to antisera of all the three viruses. Out of 107 samples collected from Djibelor, 69 showed positive reaction to antiserum of SBMV but negative reaction to antisera of CPMV and CMeV. The rest of the samples showed negative reaction to the antisera of all the 3 viruses.

The above results were again confirmed by ELISA.

Although all viruses occurring in cowpea in Senegal are not yet identified, the present results clearly indicate that SBMV was predominant in Casamance region of Senegal during 1986 crop season. This is the first report of occurrence of SBMV in Senegal and its wide spread occurrence (Nioro, Sefa and Djibelor) emphasises the possible spread to other areas and the need to identify varieties with resistance to this and other viruses in the region.

Field occurrence of southern bean mosaic virus (SBMV) on cowpea, *Vigna unguiculata* L. (Walp.) was first reported from the U.S.A. (KUHN 1963) and subsequently from India (SINGH and SINGH 1974). In Africa, SBMV on cowpea was first reported from Ghana (LAMPTHEY and HAMILTON 1974). Subsequently it was reported from Nigeria (LADIPO 1975, SHOYINKA et al. 1979) and Ivory Coast (FAUQUET and THOUVENEL 1980, GIVORD 1981).

The attempts to identify other viruses present in Senegal will be continued using antisera to other cowpea viruses.

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