

ま と め

1966年から1981年までに各地より収集した約3,100品種系統についてダイズ矮化病に対する抵抗性品種の探索を行った結果、圃場抵抗性をもつ20余り品種がみつかった。これらの品種は交配母本等に利用し、現在耐病性品種の育成中である。しかしながら、これらの品種でも、ダイズ矮化病多発地帯ではかなりの被害を受けることからさらに強度の圃場抵抗性をもつ品種系統を探索する必要があり、またいかゆる真性抵抗性をもつ品種の探索も必要である。ダイズ矮化病の自然発生による検定は年次場所による不均一性が大きく、大豆の熟期特に極早生の品種に回避現象がみられる。また、自然界ではダイズ矮化病の系統の変異があるように思われる。ダイズ矮化病が発見された1960年代は矮化型の発生が多く、ほとんどの罹病個体が矮化したが最近では黄化型の発生が多くみられる。これらのことから今後は人工接種方法を多くとり入れ自然発生とあわせて検定することが必要であろう。

試 験 研 究 従 事 者

氏 名				年 次
諏 訪	隆 之			1969
森	義 雄			1970 ~ 1975
後 木	利 三			1976 ~ 1979
番 場	宏 治			1980 ~ 1981
谷 村	吉 光			1969 ~ 1981
千 葉	一 美			1969 ~ 1974
松 川	勲			1975 ~ 1981

The Research of Resistant Varieties to Soybean Dwarf Virus Disease (SDVD).

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Summary

The occurrence of soybean dwarf virus disease was firstly reported on soybeans in Yakumo-cho and Imagane-cho located southern area in Hokkaido in 1952. At first the disease was limited in variety "Tsurunoko". Later, however, it was found in other varieties as well, and at 1971 it had spread around Hokkaido and Aomori prefecture.

Intensive research to identify the causes of the disease was undertaken by Hokkaido Central Agricultural Experiment Station and other institutes after 1958. As a result of the research, the causes were found to be a virus disease, formally designated "soybean Dwarf Virus Disease (SDVD)" in 1968, transmitted by foxglobe aphids (*Aulacorthum solani* (Kaltenbach)). Soybean plants infected with SDVD in the fields showed a rugosity of leaflets and dwarfing of plant. Isolated SDVD obtained from naturally infected soybean plants were divided into two strains in the basis of their symptoms. One of them was designated as a dwarf type strain, which caused a dwarf of plant with shortened petioles and internodes. Another strain was designated as a yellow type strain, which caused as severe chlorosis of leaflets.

Research on resistant varieties with many soybean varieties provided by Tokachi Agricultural Experiment Station and others has been started in 1966. It had been found, at 1970, that the "Ouhoyju," "Adams," and other soybean varieties were capable as field resistant. However, those have not true resistant variety to SDVD. The methods of breeding resistant variety to SDVD are based on utilizing either a true resistant variety, an introduced field resistant variety, or combination of the two. Breeding of resistant variety to SDVD by crossing these field resistant variety has been carried out as project since 1971.

This report is the results of research on screening soybean resistant variety to SDVD from 1966 to 1981.

We have hoped that this may provide a springboard from which next research could be continued.

Methods of Test

1. The ontogenesis of naturally contracted disease was observed at SDVD in nonprevented fields. The observation was mainly carried in the middle of August.

2. Details are available in "Annual Report on Soybean Breeding in Hokkaido Central Agricultural Experiment Station".

3. The artificial inoculations were conducted in isolated fields with aphids carrying dwarf or yellow strain of SDVD. The contracted disease were investigated after 30 days.

Methods of Recording

1. The tested varieties were arranged in alphabetical order of their names.

2. Japanese and Chinese varieties were recorded both in Roman letters of Japanese and Japanese itself as possible.

3. The disease was recorded as fractional numbers, with the ontogenesis of the contracted disease as the numerator, and the total observed number of ontogenesis the denominator.

4. The data were obtained from the field of Hokkaido Central Agricultural Experiment Station and an asterisk mark denotes the results obtained from a severely infected soybean fields with SDVD in Date city of southern Hokkaido.

5. A parenthesis indicates a contract index as 0-5 (none to severe).

6. The abbreviations of the locations from where the sample seeds were obtained are as follows:

- 1). Tokachi : Hokkaido Tokachi Agricultural Experiment Station.
- 2). Chuuo : Hokkaido Central Agricultural Experiment Station.
- 3). Touhoku : Touhoku National Agricultural Experiment Station (Kariwano Soybean Breeding Branch)
- 4). Iwate : Iwate Prefectural Agricultural Experiment Station.
- 5). Noken : National Institute of Agricultural Sciences
- 6). Nagano : Nagano Prefectural Agricultural Experiment Station.
- 7). Kumamoto : Kumamoto Prefectural Agricultural Experiment Station
- 8). U. S. A. : U. S. Regional Soybean Laboratory Urbana, Illinois
- 9). Thailand : Mea Jo Agricultural Experiment Station, Thailand
- 10). Poland : Plant Breeding and Acclimatization Institute Soybean Laboratory, Poland

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