FREQUENCY INDEX AND DISTRIBUTION OF SUNFLOWER SEED MYCOPOPULATION

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Healthy and quality seeds are a requisite in an intensive agricultural production. Sunflowers are attacked by an increasing number of microorganisms (fungi and bacteria) which are transmitted in many ways including the transmittance by seeds.

An investigation was conducted on natural seeds of sunflower hybrids NS-H-15, NS-H-17, NS-H-26-RM, NS-H-27-RM, NS-H-33-RM, NS-H-43, NS-H-44, and NS--H-45 from the 1984, 1985, and 1986 harvests, collected in 29 locations in different parts of Yugoslavia.

The sunflower seed mycopopulation was isolated by the following methods:
1. incubation of filter paper,
2. incubation on potato-dextrose agar (PDA).

According to our results the number of isolated fungi, which were classified in 18 genera, exceeds considerably the numbers mentioned in literature references.

Alternaria tenuis (Nees.) (syn. A.alternata) had a high frequency index and the presence up to 100% in most hybrids.

Members of Aspergillus genus were relatively frequent on sunflower seeds, especially Aspergillus falvus (Hink. ex Rf.). However, their presence was low, ranging from 0.01% to 1.6%. The members of this genus are potential producers of micro-toxins and alphatoxins. The strais isolated from the tested sunflower seeds did not produce positive results (A. Bočarov, 1984). Dalcero et al. (1981) report that A.flavus represents as much as 47% of the total contamination of sunflower seeds in Argentina.

Botrytis cinerea (Pers ex Fr.) is a major parasite in some parts of Yugoslavia. The highest presence of 8.31% was recorded on NS-H-26-RM from the 1985 harvest.

Lasidiodiploidia theobrome (Pat.) Griff, Moubl. (syn. Diaploidia natelensis) has not been identified before on sunflower seeds. It was recorded in the location of Kragujevac in 1984 and 1985 on the hybrids NS-H-17 and NS-H-45. Its presence was low (0.1%) but not negligible.

Phomopsis (diaporthe) helianthi Munt.-Cvet. et al., an important sunflower parasite in YUgoslavia, occurs on sunflower seeds in the form of pycnidia immersed in the episporium. The pycnidia contain stylospores whose function has not the proof that the pathogen may be transmitted by seeds. The presence of the pathogen on sunflower seeds decreased from 0.1% in 1984 to 0.06% in 1986 (on average for all hybrids).

Sclerotinia genus was represented by the species S.sclerotiorum Lib.de Bary. It was dominant in relation to the other fungi, its presence ranging from 22.4% (on NS-H-33-RM in 1984) to 0.31% (on NS-H-26-RM in 1986). The contamination was thus reduced by 21.11% from 1984.

The tables showing the frequency indices and micro-photos of certain fungi are given in a poster.