CHEMICAL CONTROL OF AGENTS CAUSING EARLY WILTED PLANTS DEPENDING ON GENOTYPES AND STAGES OF SUNFLOWER

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A steady, efficient and reliable sunflower growing means a proper selection of hybrids resistent to Phomopsis helianthi, Sclerotinia spp. and Plasmopara helianthi. Phomopsis /Diaporthe sp./ is a major cause of complete plant distruction wheree others are less important at the moment. The choice of chemical treatment depends largely on genotypes and crop stage. Chemical protection involves constant watch for pathogen occurance and forecast, susceptible developing stages of sunflower growing in controlled conditions of crop rotation. Hence it seems well advised to protect the whole of sunflower vegetative and reproductive organs within the choice of unsusceptible genotypes, crop rotation and adequate diet.

Studies on tolerance of certain hybrids and fungicidal efficiency were carried out in the priod of 1980 to 1986 in the are of banat. Fungicides were tested for efficiency to control diseases of NS-H-33 RM, NS-H-26 RM, NS-H-27 RM, NS-H-15 RM, NS-H-17 RM, NS-H-41 RM, NS-H-43 RM, NS-H-45 RM and Russian variety Vnimk 8931, from planting till end of blooming. The fungicide was applied by sprayer with side nozzle for stem protection /300-400 lit/ha water/ in the period before buttoning /12-16 leaves-R3/. In the next stage, the application was done by Piper aircrafts, the quantity of water used was 70 lit/ha.

The disease intensity was expressed as a number of prematured and infected plants, by reading on a 0-4 scale. The mean of disesed was assessed using Mc kiney formula.

Lab tests were carried out to measure the oil content. The results have showen that fungicide used had no share in the increase of free fatty acids.

Primary causes of early wilted sunflower plants in Banat are Plasmopara helianthion Rusian varieties (Vnimk 8931) Phomopsis helianthi is by hybrids NS-H-33 RM and Sclerotinia spp. on roots, stems and flower heads on other genotypes. Other pathogens (Phoma macdonaldi, Alternaris helianthi, Botrytis cinerea, Septoria helianthi, are in this moment less important - secondary importance.

Phomopsis helianthi is the most destructive pathogene in the sunflower production history. In the epiphytotic years Phomopsis supresis and stops the development of other parasites on stems, heads and roots.

Chemicam protection of sunflower is dedicated to the control of Phomopsis spp. Diaporte spp. and. It is consider as a temporary and necesery measure within the routine aqrtech. measures. Chemical tretments depend on genotypes and are essential in buttoning and blooming stage of sunflower.

Two applications of fungicides during buttoning (12-14 leaves) to the beginning of blooming give safe and reliable control of Phomopsis spp. by susceptible sunflower genotypes. The best protection of suceptible hybrids is achieved at beginning of buttoning stage with fungicide treatment based on benomyl and mancoseb (Benlate+Dithane M-45) carbendazime and vinclozoline (Bavistin+Ronilan), benomyl and prosimidone (Benlate+Sumilex) carbendazine and iprodione (Rovral TS), carbendazine and prohloraze (Sportak PF) and carbendazime and vinclozoline (Konker). Adding of vinclozoline, prosimidion or iprodione (Rovral,Kidan) to sistemic fungicides-karbendazime type products during flowering time succesfully are controled rot and gray mould (Botrytis cinerea, Phoma spp., Sclerotinia spp., Phomopsis spp.). Fungicidal action of nuarimol (Trimidal), biloksazol (Baycor), tiophanate metil (Enovit-M 7) has proved efficient when applied onstead of benomyl an and carbendazime.

Susceptible hybrids Vnimk 8931 are succesfully protected against Plasmopara helianthi with metalaxil + mancozeb (Ridomil MZ) and oxydixil + folpet (Sandofan Z).
Phomopsis tolerant hybrids NS-H-45 RM and NS-H-43 RM must be sporadically protected in generative stages with complementary fungicides based ob on benomyl and carbendazime mixed with vinclozoline, prosimidone and iprodione. For this purpose, premixed combinations like Rovral TS, Sportac PF and Konker are particulary well suited.