

## SUNFLOWER DISEASES IN IRAN

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### SUMMARY

During 1965 - 1966 the cultivation of sunflower as an oil seed crop was initiated in Gorgan and Mazandran and then promptly was extended in other provinces of the country. The acreage of sunflower was varied all these years and in spite of 98,000 hectares in 1970 - 1971, it was decreased to 60,000 hectares in 1987. In another hand, by increasing the acreage of cultivation of this crop, reports of incidence and development of different diseases were also increased. The diseases caused by these pathogens in fields and stores were estimated to be 10%. Some experimental work was carried out in laboratory and in green house trails by applying different media and methods and also through pathogenicity test for each pathogen for the isolation and identification of about twenty pathogens of which some were economically important from various parts of the plant i.e. root, stem and foliar parts. Besides, certain non-parasitic diseases due to nutrient deficiency were often occurred in most regions with variable intensity.

### INTRODUCTION

To provide sufficient food oil in the country it was thought for cultivation and high production of sunflower. To approach this, it was required more attention in studying the absorption system of this crop from fertile soil, the need for obtaining the resistant and tolerant varieties against different pests and diseases with high yield production and finally a work on different control measures for the reduction of the damages caused by diseases. The initial work done in this regard during these years particularly in last two years was pronounced in different parts of the country. Existence of most favourable conditions for the cultivation of this crop, our ability in production of sunflower is subject to a constant research work in this field.

### MATERIALS AND METHODS

To control the diseases of sunflower many efforts have been done, containing field tests and greenhouse and laboratory researches, in laboratory. The methods used for isolation of fungi are:

- Culture method, the media used were, (CMA), (PDA), (MA), (CP), (WA), and so on.
- Isolation method, in this method the materials were sterilized with 0,1% mercuric chloride for 0,5-1 min., rinsed with distilled water, cut open and placed on media, for isolating of seed-borne fungi the method of Blutter was used.
- Inoculation method, in suitable conditions for fungi each isolated fungus was inoculated on healthy plants in greenhouse, in three different ways (injection-direct contact and sporulation).

The isolated fungi by the mentioned methods were distinguished include the following:

Plasmopara helianthi Form I and Form II, Sclerotinia sclerotiorum, Puccinia helianthi, Phomopsis helianthi, Phytophthora drechsleri, Pythium aphanidermatum, Rhizopus solani, Alternaria tenuis, Leveillula compositarum, Fusarium spp., Verticillium sp., Sclerotium rolfsii, Phoma oleracea, Macrophomina phaseoli, Botrytis cinerea, Rhizopus, Aspergillus, Penicillium.

Nutrient deficiencies with variable severity were observed in cultivating areas.

## RESULTS AND DISCUSSION

According to the results obtained from our recent research work, particularly in recent two years, the incidence and distribution of fungal diseases was progressive. It has been also shown that the cultivation of sunflower on different unsuitable fields and in hills along with our farmers poor knowledge and poor crop management strategies with low price of the seeds lead decreasing in the cultivation and less production of sunflower. It can be concluded that through obtaining and cultivation of resistant varieties we will be able to reach to an ideal control measure in reduction of damages caused by different diseases in this country.

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