

# SUNFLOWER DISEASES IN ITALY

## A. Zizzerini

Istituto di Patologia vegetale  
dell'Università degli Studi  
06100 — Perugia, Italia

During the recent years (1974—1980), sunflower diseases have become increasingly important in Italy (Table 1) due to the expansion of sunflower crops in central and southern regions of the country. Downy mildew (*Plasmopara helianthi* Novot.) is by far the most serious parasite for sunflower crops. It was first reported in Italy at Friuli (Northern Italy) (Castellani and Candussio, 1949). Later on this parasite spread over the central regions (Monotti and Zizzerini, 1974; Zizzerini et al., 1978).

The incidence of the disease frequently reaches values of 90%, especially in fields where two successive sunflower crops had been grown. These values are estimated by taking into account groups of 100 random-chosen plants from different parts of the plot. The most susceptible varieties are Peredovik and Uniflor 70 (Monotti and Zizzerini, 1974).

The use of systemic fungicides and resistant varieties are the main control methods.

In laboratory and field screenings, Romanian (Romsun 301, Romsun 90, American (Stromboli) and French (Remil) cultivated hybrids proved to be resistant to downy mildew.

Seed dressing by Ridomil at rates of 800 g/quintal gave good results (Zizzerini, 1980 a).

As regards the presence of other sunflower parasites in Umbria (Central Italy), it was found that *Sclerotinia sclerotiorum* (Lib.) de By. attacked 6—10% of the flower heads near the harvest time.

*Botrytis cinerea* Pers. has been found in Central Italy (Toscana, Umbria, Marche), during the years characterized by frequent rainfalls (Marte and Zizzerini, 1977). The flower heads attacked (20%) appeared to be completely destroyed.

Attacks of *Alternaria alternata* (Fr.) Keissler (Zizzerini and Cappelli, 1978) and *Puccinia helianthi* Schw. (Cappelli and Zizzerini, 1978) have been recently reported, beginning from the end of August. The most susceptible varieties to *Alternaria* (20—30% infected plants) were: Argentario, Uniflor 70 and Romsun HS 52 whereas the varie-

ties attacked by rust — always moderately — were Argentario, Uniflor 70 and Cernianka.

*Phoma* sp., *Oidio* sp. (Zizzerini, 1980) and *Fusarium* sp. (Zizzerini, unpublished) were reported in very limited areas, whereas *Macrophomina phaseolina* (Tassi) Goid was found in a small area in Sardinia a few years ago (Marras, 1963). The last pathogen is now spread over very large areas of Central-North Italy and its incidence appears very high (Zizzerini, unpublished).

Serious attacks by *Erwinia carotovora* var. *carotovora* Dye (15—20% plants attacked) have recently been reported in Emilia-Romagna (North Italy) (Mazzucchi and Bazzi, 1979).

The rapid diffusion of sunflower crops in different regions of the country requires urgent and adequate phytosanitary methods to prevent the spread or the introduction of some of the most serious diseases. One of the most effective control methods, even if difficult to apply, is to test either the imported seeds and the seeds produced in Italy.

Breeding programmes to obtain improved varieties resistant to the most dangerous parasites, and especially to downy mildew, are being developed.

Table 1  
Sunflower diseases in Italy

Disease	Pathogen	Comment
Downy mildew	<i>Plasmopara helianthi</i>	Major disease
Charcoal rot	<i>Macrophomina phaseolina</i>	Major disease
White rot (stalk and head rot)	<i>Sclerotinia sclerotiorum</i>	Minor disease
Gray rot	<i>Botrytis cinerea</i>	Minor disease
Rust	<i>Puccinia helianthi</i>	Minor disease
Leaf spot	<i>Alternaria alternata</i>	Minor disease
Wilt	<i>Fusarium</i> sp.	Minor disease
Black stem	<i>Phoma</i> sp.	Minor disease
Head rot	<i>Erwinia carotovora</i>	Minor disease
Powdery mildew	<i>Oidio</i> sp.	Minor disease

## REFERENCES

- Cappelli C., Zazzerini A., 1978, *La ruggine del girasole (Puccinia helianthi (Schw.) in Italia*, Convegno sugli aspetti genetici, agronomici e patologici del girasole, Pisa, 14—15 Dicembre, 1978.
- Castellani E., Candussio R., 1949, *La peronospora del girasole*, Olearia, 11, 811—816.
- Marras F., 1963, *Arachide, girasole e vigna nuovi ospiti di Macrophomina phaseolina (Tassi) Goid. in Sardegna*, Note Fitopat. per la Sardegna, nr. 3, pp. 10.
- Marte M., Zazzerini A., 1977, *Principali malattie diagnostiche in Umbria nel 1976*, Informatore Fitopat., 27, 11, 19—24.
- Mazzuchi U., Bazzi C., 1979, *Un marciume molle del girasole causato da Erwinia carotovora var. carotovora Dye*, Informatore Fitopat., 29, 11, 3—5.
- Monotti M., Zazzerini A., 1974, *La peronospora del girasole. I° contributo: Risultati di osservazioni eseguite in Umbria nel 1973 e valutazione della resistenza delle varietà di girasole attualmente coltivate in Italia*, Informatore Fitopat., 24, 3, 5—14.
- Zazzerini A., 1980 a, *Impiego di fungicidi sistemici nella lotta contro la peronospora del girasole (Plasmopara helianthi Novot.)*, Atti Giornate Fitopatologiche 1980, 255—261.
- Zazzerini A., 1980 b, *Problemi fitopatologici connessi alla coltura del girasole*, L'Informatore Agrario, 36 (17), 10375—10389.
- Zazzerini A., Cappelli C., 1978, *Alternaria alternata nuovo parassita del girasole in Italia*, Convegno sugli aspetti genetici, agronomici e patologici del girasole, 234—242.
- Zazzerini A., Vannozzi G., Tuberosa R., Paradisi U., 1978, *Diffusione della peronospora del girasole (Plasmopara helianthi Novot. f. helianthi) e controllo della resistenza varietale nell'Italia centrale*, Atti Giornate Fitopatologiche, 341—348.

LES MALADIES DU TOURNESOL  
EN ITALIE

## Résumé

L'extension de la culture du tournesol en Italie, spécialement au centre et au sud du pays, a été accompagnée de l'intensification de l'attaque de quelques pathogènes spécifiques à cette culture. La maladie la plus sérieuse est le mildiou produit par le champignon *Plasmopara helianthi* qui parfois, en particulier dans la monoculture, attaque presque 90% de plantes. L'attaque du champignon *Macrophomina phaseolina* c'est répandu dernièrement très vite, spécialement au centre et au nord de l'Italie. Parmi les maladies mineures sont signalées la pourriture blanche de la tige et du capitule, la pourriture grise, la rouille, les maladies des taches foliaires et des taches noires de la tige.

ENFERMEDADES DEL GIRASOL  
EN ITALIA

## Resúmen

Al mismo tiempo con la extensión de la cultura del girasol en Italia, sobre todo al centro y sur del país, se ha intensificado el ataque de unos patógenos específicos a esta cultura.

La más seria enfermedad es el mildiu producido por el hongo *Plasmopara helianthi* que algunas veces, especialmente en la monocultura, ataca hasta al 90 por ciento de las plantas. Muy rápidamente se ha extendido en el último tiempo el ataque del hongo *Macrophomina phaseolina*, en especial al centro y norte de Italia.

Entre las enfermedades menores están mencionadas la podredumbre blanca del tallo y del capítulo, la podredumbre gris, la roya, el manchado de las hojas, el manchado negro del tallo.