Zbornik predavanj in referatov s 3. Slovenskega posvetovanja o varstvu rastlin, str. 475-477
Portorož, 4. - 5. marec 1997

BASAMID GRANULAR, A SOIL DESINFECTANT WITH NEW POSSIBILITIES OF USE

E. Gassauer[1], H. Jennrich[1]

ABSTRACT

Soil desinfection with Basamid Granular (98% Dazomet) has been used succesfully for several years against soil borne pathogens, nematodes and seed borne weeds in a number of different crops.

The BASF Research and Development department has re-evaluated in the recent past the biological potential of this product and new application possibilities were found.

These are:
1. The so called "Planting through technique" for strawberries:
   It consists of the combined Basamid application followed by mulching with a plastic sheeting. The strawberry seedlings were planted directly through the plastic mulch after a certain waiting period avoiding soil aeration previous to planting.
2. Soil desinfection for control of *Plasmodiophora brassicae* to brassicas:
   Good and long lasting control was obtained with a combined soil treatment before planting, applying lower rates per m^2 of Basamid Granular + calcium cyanamide.
3. Basamid Granular combined with solarization:
   Increased soil desinfection can be achieved against soil borne pathogens by plastic sheeting on top of sufficiently irrigated soil which was treated with Basamid. The higher degree of control occurs due to a better downward penetration of Basamid assisted by the irrigation water, and the additional heating up effect below the plastic sheeting by solarization.

With support of posters we would like to show and discuss the results of the trials.

Since methyl bromide was banned in Slovenia, Basamid Granular has become a very effective alternative for soil desinfection.

IZVLEČEK

BASAMID GRANULAR, RAZKUŽILO TAL Z NOVIMI MOŽNOSTMI UPORABE

Razkuževanje tal z Basamid Granularjem (98% dazomet) smo uspešno opravljali več let proti talnim parazitskim mikroorganizmom, ogorčicam in semenskim plevelom pri vrsti različnih poljščin in vrtnin.

Oddelek za raziskavo in razvoj družbe BASF je nedavno prevrednotil biotični potencial tega pripravka in je ugotovil nove možnosti za njegovo uporabo.

Te so:
1. "Planting through technique" pri jagodah. Sestavlja jo kombinirana uporaba basamida, ki ji sledi pokrivanje s plastično folijo. Sadike jagod posadimo neposredno skozi folijo po neki dobi čakanja, da se izognemo zračenju pred sajenjem.
2. Razkuževanje tal za zatiranje golšavosti kapusnic (*Plasmodiophora brassicae*) pri kapusnicah. Dober in dolgotrajen učinek so dosegli s kombiniranim razkuževanjem tal pred

[1] LRV/AT, Techn. Coordination and Extension, BASF AG, 67056 Ludwigshafen, Germany

saditvijo, ob uporabi manjših odmerkov/m^2 basamid granularja in apnenega dušika (kalcijevega cianamida).
3. Kombinacija basamid granularja s solarizacijo. Čedalje boljše razkuževanje tal lahko proti talnim parazitskim mikroorganizmom dosežemo s pokrivanjem s plastičnimi folijami na dobro razmočeno zemljišče, ki je bilo tretirano s basamidom. Večja učinkovitost zatiranja temelji na boljšem prodiranju v nižje plasti tal, ki so bila tretirana, k čemur pripomore zalivalna voda in dodatno ogrevanje pod plastičnimi folijami s solarizacijo.

S posterji želimo prikazati in diskutirati rezultate poskusov.

Ker je metil bromid v Sloveniji prepovedan je postal Basamid Granular zelo učinkovita alternativa za razkuževanje tal.

Although Basamid Granular (98 % Dazomet) is worldwide already a well established product for soildesinfection, new areas of use were found. These are

1. Planting through technique

2. Combination of Basamid Granular + Calcium Cyanamid for the control of *Plasmodiophora brassicae*

3. Basamid Granular combined with solarization.

1. Planting through technique
The advantages offered by polyethylen mulching films are utilized by many farmers in their vegetable and strawberry crops, by covering the rows of plants. In connection with a soilfumigation for these crops, the question arose, wether it is possible to make an application of Basamid followed by covering the polyethylen mulch when planting directly into the polyethylene film, after a certain waiting period.

Results from various trials show, that the Basamid/polyethylen mulch method could be used wherever vegetables or strawberries are grown on plastic film.

In greenhouse trials it was found, that without aeration, planting seems possible after 19 - 24 days with the standard polyethylen mulches.

Fieldtrials with 38 g/m^2 of Basamid resulted in the most favourable case, that strawberries could be planted after 25 days, without aeration of the soil.

All these treatments gave significant yield increases.

2. Combination of Basamid Granular + Calcium Cyanamid for the control of *Plasmodiophora brassicae*

For many vegetable grower Clubroot *(Plasmodiophora brassicae)* is the disease which is of greatest economic importance when cabbages and other brassicas are grown.

It is known, that both Basamid Granular and Calcium cyanamid on their own clearly reduce the attack by *P. brassicea*, whereby Basamid is the more effective one.

The advantages of both products will be combined when treatments are carried out in late spring or summer, taking into consideration the respective waiting period for Calcium cyanamid and Basamid before sowing or planting the crops concerned.

Calcium cyanamid should be applied first, then, in a second operation, Basamid Granular should be applied and worked in immideately.

The best results were obtained with the combination of Basamid ($20g/m^2$) + Calcium Cyanamid ($80\ g/m^2$). Compared to the control yields and quality were much higher.

3. Basamid Granular combined with solarization

Solarizaiton is a physical method for soildesinfection, where soil, after sufficient watering is covered with plastic sheets. The effect rlies on high temperatures that will develop under the plastic when high sun radiation occurrs.

Nevertheless, in most cases the control of soil born organism by means of solarization is not sufficient enough for good and long lasting effects.

Therefore trials were carried out, where, after application of Basamid ($40 - 60\ g/m^2$) which was slightly worked into the ground, the beds were watered thoroughly, up to 75 % of field capacity and covered with plastic sheets.

Under high temperature regimes Dazomet immediately was transformed into Methyl-iso- thio- cyanate (MITC) and, with the help of the water, drained into subsoil layers.

MITC provided to the effect of solarization additionally a better overall control of soil born pathogenes and weeds, that derived from seeds.

As a result of this, better yields and quality of the harvested products were achieved.