EFFICACY OF NUTSEDGE AND PHYTOPHTORA CONTROLLING CAN-SHIELD® FUMIGATION AND MULCH FILMS

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Based on published survey results growers have used alternative fumigants successfully, but experiencing production losses due to increasing weed and pest problems. Imaflex is developing pesticide releasing tarps since 2010 and has filed co-owned national patent applications with its cooperation partner Bayer Innovation GmbH in 2012.

Imaflex USA and its subsidiary Canslit Inc. offers a variety of mulch and fumigant retention tarps, including physical repelling insect tarps for virus control in vegetable production. The advanced multilayered Can-Shield tarps are adding single or multiple pesticide active ingredient release to this portfolio for complementing e.g. the herbicidal and fungicidal activity spectra of alternative fumigants. The release is completed within a couple of days for compliance with pre-harvest intervals of selected active ingredients and for safe disposal of tarps after use.

The active ingredients are encapsulated in the Can-Shield tarp matrix allowing for safe handling, convenient and precise application of pesticides in combination with alternative fumigants. Can-Shield tarps only release the active ingredients when placed on moist soil or after the first irrigation when placed on dry soil. Can-Shield may supersede additional pesticide spray treatments before tarping in common pre-plant soil sanitation procedures.

So far several efficacy studies with halosulfuron-methyl encapsulated in Can-Shield (HSM) for nutsedge control in watermelon production systems have been conducted in different climate and soil conditions, with and without alternative fumigants. Results of these studies are reviewed regarding nutsedge efficacy, crop safety, yields and fumigant containment. Preliminary field investigation data for a dual fungicide releasing Can-Shield (DFR) aiming for Phytophthora capsici control in cucurbits are discussed.

Overall, Can-Shield HSM demonstrated efficacy in delivering the herbicide onto target soil surfaces and in nutsedge control also in combination with alternative fumigants like Pic, 1,3-D and combinations at reduced rates. Can-Shield DFR proved simultaneous delivery of two fungicides and its potential in P. capsici control.