



International Conference

FROM SEED TO PASTA III

A SUSTAINABLE DURUM WHEAT CHAIN
FOR FOOD SECURITY AND HEALTHY LIVES



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THE ORGANIC TREATMENTS ON COMMODITIES AND ENVIRONMENT: THE EFFICACY OF THE NATURAL PYRETHRUM.

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The stored grain quantities worldwide are showing approximately a 10 - 25% annual losses as a consequence of the stored-product insects. It is indeed estimated that, depending on the area considered, the direct and indirect losses of grains and grain-based products fluctuate from about 10% in temperate regions to almost 25% in humid tropical areas.

Residual insecticides are widely used to protect the stored cereal grain against the insect's attack and, in particular, the contact insecticides admixture is the main solution chosen in many major countries.

The necessity of new effective choices compared to the conventional insecticides still in use, arise from the up growing organic productions.

In Italy from 2010 until now, for example, the agricultural land dedicated to the organic production is improving every year up to a 30% total, and it is still increasing.

Given the higher complexity in protecting the organic foodstuff, compared to the conventional treatments on commodities, the stockers are called to achieve an higher hygiene standards in the storage warehouses.

The most part of treatments on grains and on storage environments involve the employ of highly residual insecticides, such as the Organophosphate and Pyrethroids.

Pyrethrum is a natural insecticide derived from the dry flowers of *Chrysanthemum cinerariaefolium*, which contains 1–2% pyrethrum extract by weigh, with a major production in Kenya, Rwanda and Tanzania, Tasmania, China and Papua New Guinea.

Natural Pyrethrum is a mixture of 6 closely related different components (Pyrethrin I and II, Cinerin I and II, and Jasmolin I and II) called Natural Pyrethrins, with a neurotoxic activity, which affect the sodium channel of the insects.

The six components of pyrethrum show a knockdown and insecticidal action, with pyrethrins showing a more effective activity than Cinerins and Jasmolins. In particular, Pyrethrin I is associated with a greater killing activity and Pyrethrin II with a faster knockdown effect.

Despite the similarity in the structural formula of the components, the effects on the nerve impulses of the insects are different.

We are testing our product on the durum wheat and the response is positive.