



United States
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Letter in support of the International Parasitoid Genome Initiative.

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Recently the USDA, ARS held a meeting to identify critical needs of the research community working on the use of biological control agents. A major obstacle that was identified was the lack of an overall understanding of parasitoid biology. To increase the use of parasitoids as biological control agents depends heavily on an increased understanding of parasitoid biology.

Biological control efforts saves agriculture over \$20 billion annually. This is based on a 16% "totally successful" rate, and hence is an underestimate of the actual savings, since there are many "partial" successes. Due to the enormous benefits from using Biological Control agents, especially the parasitoids, there are numerous programs researching ways to increase the use of these beneficial insects. There are roughly 600 researchers worldwide working to increase the use of parasitoids to control insect pests (est. from International Entomophagous Insects Workshop 2003).

Industries that produce beneficial insects will also benefit from a genomics project on a parasitoid species, like *Nasonia*. Beneficial insectaries currently rear *Nasonia* for control of flies in livestock environments. One application to the research community is in the development of artificial diets for cost-effective mass rearing of beneficial insects. Researchers see the genome project for *Nasonia* as a huge boost for the mass rearing effort of *Nasonia* using artificial diets due to the development of 'nutrigenomic' techniques to optimize artificial diets.

In terms of phylogenetic studies, the *Nasonia* genome will be very useful for identifying sequence changes along phylogentic branches between bees, wasps and other insects. The *Nasonia* genome will aid the identification of these genetic changes along specific branches which lead to the Hymenoptera, Diptera and Coleoptera. Another benefit from this genome project will be that it will build upon the information generated from the previous insect genomes that have been, or are, currently being completed.

There are many benefits to be gained from completion of this project. Much of the needed preliminary information and resources have been produced, and supports the serious consideration for a genome project to be completed for *Nasonia vitripennis*. Therefore we wrote this letter as evidence of our support and excitement to encourage consideration for approval of



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this project.