Future Rodent Control Technologies

Research progresses on the anti-fertility effects of a contraceptive bait of quinestrol and levonogestrel (EP-1)

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Rodent pest damage is still a severe problem in the world. Due to increasing rodenticides resistance, high risk to non-target animals or people, rapid population recovery and public concerns of traditional killing, fertility control as a non-lethal and sustainable approach has been proposed as an alternative of rodent management. However, fertility control often suffers disadvantages of low palatability, repeated baiting or environmental safety problems, we are still lacking of efficient approaches of fertility control. In this presentation, we will present a review about the research progresses of the anti-fertility effects of a rodent contraceptive bait with quinestrol and levonogestrel (EP-1), mostly in China. During past decades, baits containing quinestrol and levonogestrel have been shown to have effective anti-fertility effects on various wild rodent species in both laboratory and field conditions. In laboratory experiments, EP-1 showed significant anti-fertility effects in both male and females of rodents, including greater Mongolia gerbils, Brandt's voles, midday gerbils, etc. In field tests, a single baiting of EP-1 baits ranging from 10 to 50 ppm during the breeding season could significantly reduce the reproduction and population density for several months in several rodent species, including plateau pikas, Djungarian hamster, greater Mongolia gerbils, etc. Further studies indicated that the half–lives of quinestrol and levonogestrel in water and soil were short, ranging from a few hours to about 2 weeks, suggesting that these compounds were easily degraded by bacteria in natural condition. Studies also indicated that EP-1 had minor negative effects on populations and diversity in birds. In conclusion, we believe that EP-1 is very promising for practical use for rodent fertility control. More efforts are needed to test its effects on rodent species in other countries outside China.

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6th International Conference of Rodent Biology and Management and 16th Rodens et Spatium

Potsdam, Germany, 3-7 September 2018

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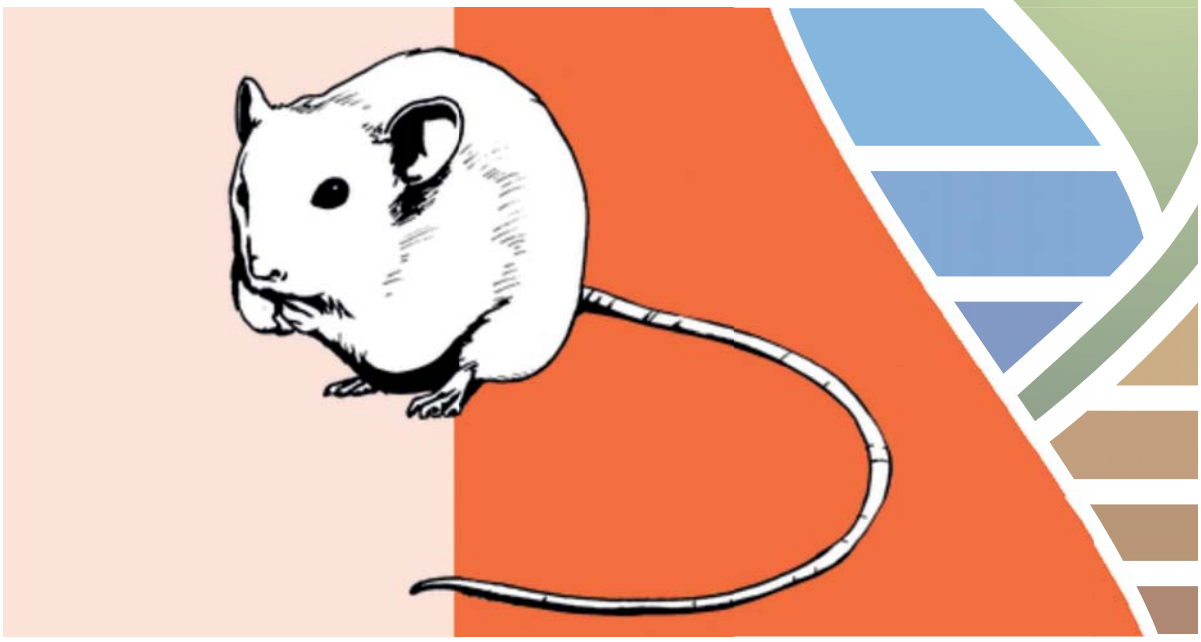

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Bibliografische Information der Deutschen Nationalbibliothek
Die Deutsche Nationalbibliothek verzeichnet diese Publikation
In der Deutschen Nationalbibliografie: detaillierte bibliografische
Daten sind im Internet über http://dnb.d-nb.de abrufbar.

ISSN 1868-9892
ISBN 978-3-95547-059-3
DOI 10.5073/jka.2018.459.000

Printed in Germany by Arno Brynda GmbH, Berlin.