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PP-211 [Beekeeping Technology and Quality]

Environment, Social and Governance(ESG) realization considering safe bee venom production and animal welfare through a Korean bee venom collector.

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ABSTRACT

The bee venom extraction process is directly related to the welfare of bees, and by using the Korean bee venom extractor you can safely obtain bee venom while minimizing stress and risks to bees. The Korean bee venom extractor is an innovative technology that simultaneously considers the welfare of bees and safe bee venom production with the following advantages: It consistently extracts high quality bee venom without killing bees (bee safety). Also it does not significantly affect the physiological ecology of bees (improved animal welfare). High-quality bee venom is produced through high-quality bee venom extraction and purification technology (high-quality bee venom production). This animal-friendly bee venom production environment contributes to the future-oriented development direction and realization that is in line with global ESG (Environment, Social and Governance) management.

INTRODUCTION

Chungjin Biotech Co. Ltd. is a comprehensive Korean and worldwide renown bee venom research company capable of bee venom collection, bee venom raw material production and product development.
There has been a worldwide trend regarding bee venom research and bee venom therapy. Korea has been actively involved in bee venom research and has published the most bee venom-related papers over the past 20 years.(*A Bibliometric Analysis of Bee Venom Research over the Past 20 Years, Korean journal of Acupuncture, 2020)

Table 1. Top 25 countries publishing the highest number of articles about bee venom

Countries/Regions	Records (n)	% (of 1,547)
SOUTH KOREA	340	22.50
USA	271	17.52
PEOPLES R CHINA	184	11.89
GERMANY	104	6.72
SWITZERLAND	100	6.46
ENGLAND	72	4.65
BRAZIL	62	4.01
AUSTRALIA	61	3.94
FRANCE	58	3.75
ITALY	58	3.75
JAPAN	49	3.17
DENMARK	41	2.65
POLAND	40	2.59
AUSTRIA	39	2.52
IRAN	38	2.46
TURKEY	38	2.46
EGYPT	35	2.26
INDIA	35	2.26
NETHERLANDS	31	2.00
SPAIN	31	2.00
BELGIUM	20	1.29
CANADA	19	1.23
CROATIA	19	1.23
CZECH REPUBLIC	18	1.16
ISRAEL	17	1.10

MATERIALS AND METHODS

Proposing measures for realizing ESG

(Environmental)

To ensure a sustainable beekeeping industry, we harvest bee venom in a way that protects the ecosystem and maintains the health of bees.

(Social)

We respect animal rights by improving the welfare of bees and secure consumer trust through safe and ethical bee venom production.

(Governance)

Chung Jin bee venom production and quality control processes are transparent and fully traceable.

Animal Welfare Livestock Farm Certification System

Our bee venom collection system follows the Korean "Animal Welfare Livestock Farm Certification System" in principle. This system certifies cattle, pig, chicken, and duck farms that raise animals humanely maintaining their natural way of living according to high standards of animal welfare. Although honeybee beekeeping farms are not currently included in the certification target, the basic principles of this system can be applied to our bee venom production.

[Other methods of bee venom production] 1.Chemical stimulation by administering alcohol : There is a chemical stimulation method that administers alcohol to live bees. This method has been shown to cause excessive stress to the bees and a reduction of secretion efficiency. 2.Bee venom collection by artificially pressing the chest and abdomen of a bee to secrete bee venom. This method is very slow labor intensive and inefficient and sacrifices the bee. 3. Electric/Mechanical bee venom collection.

The bee venom collection plate is located under the electric stimulating device, so only the liquid bee venom remains and dries, the unrefined bee venom powder is collected by scraping. It is the most effective method of extracting bee venom by performing electric stimulation using a bee venom collection device. it is a method widely used in countries with advanced beekeeping technology because it protects bees and allows economical bee venom extraction.
Honeybees have the characteristic that when one worker bee secretes venom, the other worker bees also secrete venom. Bee venom extraction using the electric stimulation method can obtain bee venom without sacrificing bees,

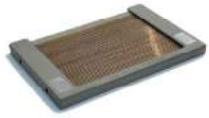
RESULTS

Unethical bee venom collection methods and their problems

-Direct bee killing: It is extremely unethical to kill bees and extract venom from their venom sacs.
- Excessive electric stimulation: Using too strong an electric stimulation can cause serious stress and harm to bees.
- Frequent collection: Collecting venom too frequently can harm the health of bees and colonies.
Problems
- Decrease in bee population: Unethical methods can drastically reduce bee populations.
- Ecosystem imbalance: Bees are important pollinators, and their decline affects the entire ecosystem.
- Decrease in bee venom quality: Bee venom collected from stressed bees may be of poor quality.
- Unsustainability: These methods can threaten the bee venom industry itself in the long term.

Advantages of Chungjin Biotech's bee venom extractor

1. Effectively produces bee venom while protecting the lives and health of bees
2. Ethically extracting bee venom without killing bees, and it ensures the sustainability of the bee venom in dustry in the long term



This world class technology extracts bee venom by giving electric stimulation to live bees. It has patents, utility models, and new technology certifications (NEP-2005-069), and guarantees world-class quality.

1. Safety: Prevents injury to workers that occur during the bee venom extraction process.
2. Compatibility & Animal Welfare: Animal welfare is realized because bee venom is extracted while giving minimal stress to bees and considering their physiology and ecology. Therefore, high-purity bee venom can be obtained.
3. Efficiency: Increases productivity by extracting bee venom faster and more efficiently than conventional methods. Controls the extraction frequency and amount to prevent excessive stress on bees.
4. Quality: High-quality bee venom is produced because the purification process is performed using only pure water and fermented alcohol to improve the quality of the collected bee venom.
5. Sustainability: Bee venom is collected while maintaining the health of the bee colony. Controls the extraction frequency and amount to prevent excessive stress on bees. Bee venom can be produced in a sustainable way without harming the environment.

Excellence of Chungjin Biotech

Production history system

"BEE VENOM" dosage and injection method

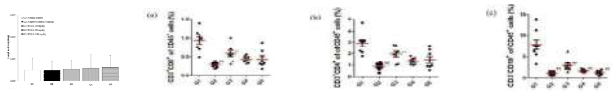
-The outstanding effects of bee venom therapy on breeding pigs
-The remarkable effects of bee venom therapy in piglets/growing pigs

Existing bee venom collection methods either stimulate bees to kill each other or kill the bees during the collection process. This can cause injury to the workers and cause stress to the bees.

Granules of bee venom and lactose mixture, coated prototype (BVLS) - enteric bee venom complex Optimized weight ratio of bee venom and excipient lactose with various concentration combinations.

Patent : Enteric-coated granular composition comprising ingredients derived from bee venom and lactic acid bacteria, 10-2413030, KR

The immune-enhancing effect of bee venom was evaluated and confirmed by orally administering enteric granules (BVLS) containing bee venom-derived components and lactose to male immunosuppressed mic.



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The bee venom extraction process is directly related to the welfare of bees, and using a Korean bee venom extractor, you can safely obtain bee venom while minimizing stress and risks to bees. The Korean bee venom extractor is an innovative technology that simultaneously considers the welfare of bees and safe bee venom production, and this technology offers the following advantages: It can extract only bee venom with uniform ingredients without killing bees (bee safety). The death rate of bees during bee venom extraction is significantly low, and it does not significantly affect the physiological ecology of bees (improved animal welfare). High-quality bee venom is produced through high-quality bee venom extraction and purification technology (high-quality bee venom production). The production and use of bee venom using a Korean bee venom extractor is a technology that can create an animal-friendly bee venom production environment and contribute to the future-oriented development direction and realization that is in line with global ESG (Environment, Social and Governance) management. This technology can strengthen the competitiveness of the Korean bee venom industry and produce high-quality bee venom to provide to consumers.