สถานการณ์เห็ดปัจจุบัน
Based on the Egyptian’s hieroglyphics 4,600 years ago,

The Egyptians believed that mushroom are the plant of IMMORTALITY?
World Mushroom Market Share (Value), by Region, 2013

World Mushroom Market Size, by Type, 2014 vs. 2019 ($Million)

$50,000 million
China Edible Mushroom Cultivation
become the products of the **fifth-largest agricultural sector in China**
25 million farmers
149 billion RMB Yuan (24 billion USD) in 2011
growth rate over 10% over the past 30 years
Mushrooms potentially be very important in future food supplies

China’s production of edible mushrooms.

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ตารางแสดงข้อมูลราคาสินค้าที่สำคัญที่เกษตรกรขายได้ (บาทกิโลกรัม)

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ที่มา: สภาพิษลักษณ์ศิริราช ผู้แทนรัฐบาล รวบรวมโดยศูนย์วิจัยอุตสาหกรรมอาหาร กรมการเจรจา ปี 2555 ตัวเลขเฉลี่ย 6 เดือนแรก (ม.ค.-ก.ค.)
ผู้ผลิตเห็ดเมืองไทย 2557

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ประมาณการเห็ดเข็มทองไทย

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Million dollar mushroom:
Bidders to battle over world’s largest white truffle

NEW YORK (CNNMoney) —
Attention all foodies: The largest white truffle in the world hits the auction block this weekend. The truffle, which was discovered last week DECEMBER 2014 in Italy by Sabatino Truffles, weighs in at a record 4.16 pounds, will go on sale at Sotheby’s in New York on Saturday. This white truffle is twice the size of the existing record holder that sold for $417,200 in 2010, according to the auction house.
Poison Mushroom Medicine? How They Make Powerful Drugs

Poisonous has been used for health purposes, the cornerstone for toxicity in poison mushrooms can also make a host of zero side effect drugs.

"Mushrooms are prolific chemical factories, yet only a few of their peptides are poisonous, "These toxins survive the high temperatures of cooking and the acids of digestion, and yet they're readily absorbed by the bloodstream and go directly to their intended target. These are the exact qualities needed for an effective medicine."

It is a sole enzyme called POPB that is key to the lethal potency of some mushrooms. remove the warhead from a missile designed to ride the bloodstream directly to their intended destination.
Fatal toxins found in ‘edible’ wild mushrooms

A wild mushroom eaten across Europe has been found to contain dangerous and potentially lethal toxins. Chinese scientists believe they have identified the mushroom toxins that cause rhabdomyolysis – a sometimes fatal disease that can irreparably damages the kidneys.

Both *T. equestre* and *T. terreum* are part of a family of wild mushrooms that were thought to be edible from France.

15 new **triterpenoid terreolides and saponaceolides** demonstrated acute toxicity, killing mice at 88.3 and 63.7mg/kg of body weight. Both compounds increased serum creatine kinase levels in mice.

**Li Taihui**. ‘One toxic mushroom can contain different types of toxins and the same toxin’s toxicity can change in accordance with the environment.

Liu’s suggesting a **combination of three types of mushroom toxins** may have been responsible for more than 200 deaths in China.
The death cap mushroom likely kills and poisons more people every year than any other mushroom.

Now there finally appears to be an effective treatment—but few doctors know about it.

When someone eats *Amanita phalloides*, she typically won’t experience symptoms for at least six and sometimes as many as 24 hours.

Eventually she’ll suffer from abdominal cramps, vomiting, and severely dehydrating diarrhea.

This delay means her symptoms might not be associated with mushrooms, and she may be diagnosed with a more benign illness like stomach flu.

To make matters worse, if the patient is somewhat hydrated, her symptoms may lessen and she will enter the so-called honeymoon phase.

Meanwhile, the poison stealthily destroys her liver. It binds to and disables an enzyme responsible for making new proteins.

Without this enzyme, **cells can’t function, and liver failure** results. Without proper, prompt treatment, the victim can experience rapid organ failure, coma, and death.

A few mouthfuls of death cap mushroom can kill.
Psilocybin, the active hallucinogenic agent in so-called "magic mushrooms", can help people quit smoking, a federally funded study from Johns Hopkins has found. Magic mushrooms are known for their mind-altering effects. The new study shows that the active ingredient in these mushrooms- Psilocybin- can be used in people who have been unable to quit smoking despite several efforts.
Rains fuel California mushroom boom

By Associated Press
Published: December 30, 2014, 4:30 pm | Updated: December 30, 2014, 4:44 pm

SONOMA, Calif. (AP) — Recent heavy rains have brought a mushroom boom to parts of California.

The Santa Rosa Press-Democrat (http://bit.ly/14awdeP) reports that lands parched by a three-year drought just a few months ago are now seeing an explosion of both poisonous and edible mushrooms after about 2 feet of rain saturated grassy hillsides and swelled streams in Sonoma County.

It has been especially fruitful that the rains have been mixed with mushroom-friendly warm weather.

Darvin DeShazer of the Sonoma County Mycological Association says the fungi are “popping out of the ground everywhere right now.”

The boom has brought a mushroom boom to restaurant menus, farmers markets and foraging classes around the region.

9 ways mushrooms could drastically improve the world

Product designer Eben Bayer is just one speaker who has shared an idea for how mushrooms can save the world on the TED stage.
ใช้ปุ๋ย P มากเกิน

เห็ดและ mycorizha ช่วยพืชดูด P ไปใช้ดีขึ้น
Symbioticกับราก
ใส่แค่ 25% แต่ดีกว่า

พืชใช้ได้แค่ 15%
(จาก)
“When a tree’s done using it leaves ... it’s doesn’t pack them up, take them to the leaf reprocessing center and have them melted down to form new leaves. It just drops them, the shortest distance possible to the forest floor, where they’re actually upcycled into next year’s topsoil,” he says. “In nature, mushrooms are the recycling system.”

Product designer Eben Bayer reveals his recipe for a new, fungus-based packaging material that protects fragile stuff like furniture, plasma screens — and the environment.
Tallest mushroom tower in the world rises at NYC museum
Paul Stamets has filed 22 patents for mushroom-related technologies and,

**Six ways that mycelium fungus could save the World!!!**

1. They can **clean polluted soil**. He put storm-blown mycelium in burlap sacks, and placed them downstream from a factory producing E-Coli. In 48 hours, the mushrooms reduced the amount of coliform bacteria in the soil 10,000 times.

2. They **treat smallpox**. Three different strains of Agarikon mushrooms which are highly active against poxviruses.

3. Also **cure the flu**. Based on the results of Agarikon mushrooms against pox, against flu A viruses and flu B viruses. They were found to work very well.

4. Used to **kill insects**. A non-sporulating form of mushroom can attracts bugs like carpenter ants, and then kill them. But even better, after sporulation, these substances can repel bugs, even termites, making a home unsuitable for infestation. Extracts can even steer bug movement.

5. They can **turn cardboard boxes into forests**. “Life Box,” cardboard which is made with mycorrhizal and endophytic fungi as well as spores. Add soil, tree seeds and water ... and you can grow a forest.

6. Finally, they could be used to **make fuel**. Help address the energy crisis, since mycelium can convert cellulose into **fungal sugars**. A fascinating idea: mycelium-based ethanol.
How Mushrooms Can Save the World
Crusading mycologist Paul Stamets says fungi can clean up everything from oil spills to nuclear meltdowns.

Pioppino mushrooms (*Agrocybe aegerita*) induced tumor regression, reversing cancer in lab mice. The species also controlled blood sugar in diabetic mice.

Oyster mushrooms. “could clean up oil spills all over the planet,”

Agarikon dangles. “could provide a defense against weaponized smallpox.”

*Mycena alcalina* it can break down toxic chlorine-based polychlorinated biphenyls, or PCBs.
LAST FOSSIL FUEL FOR 500 MILLION YEARS
FOSSIL FUEL SHORTAGE: DO MUSHROOMS HOLD THE KEY?

The world today is heavily reliant on fossil fuels and chemicals. Yet oil reserves and other natural resources are finite, and their use leaves behind an unsustainable, ecological footprint. Mindful of this problem, Professor Adrian Tsang is looking for a sustainable solution by studying mushroom DNA from every angle. His genomics research could well pave the way to a new, cleaner source of energy.

Fossil Fuel Shortage: Solutions Powered by Mushrooms?
Our fossil fuel reserves are steadily being depleted and scientists all over the world are looking for effective, ecological alternatives. Among them is Adrian Tsang, a professor of Biology at Concordia University and Director of the Centre for Structural and Functional Genomics. He may well have found the answer and he uses genomics to do it.

Are mushrooms the answer?
Professor Tsang studies genes and he believes that the answer to our dwindling reserves of fossil fuel might just be hiding in the lovely mushroom! That’s why he has been hard at work, sequencing and analyzing the DNA of fungi. His goal is to understand their structure and functioning so that innovative technology can be developed. So far, his research has helped him design processes that reduce the use of chemicals in industry. More importantly, it has also allowed him to convert wood residue into bioethanol, a clean source of energy.

DID YOU KNOW?
Because of their unique features, fungi are classed neither as plants or animals. Most are harmless or beneficial, some can cause diseases. They represent an interesting and promising research avenue in environmental genomics. For example, they could be used to decontaminate the soil of the entire planet.

"Fungi play a natural role in decomposition. They break down woody biomass, which includes limbs, tops, needles, leaves, bushes and shrubs, into sugars. That makes fungi an ideal natural laboratory where we can search for the proteins involved in this process, which we aim to harness and duplicate," Professor Tsang explains.

This revolutionary technology would considerably reduce our fossil fuel use and greenhouse gas emissions. Professor Tsang believes it holds major economic potential and could help the planet as a whole be less reliant on oil and chemicals.

BIOETHANOL: AN ECO-FRIENDLY ALTERNATIVE TO OIL

Bioethanol is produced from plant-based materials and can be used in certain gasoline engines. Plants that contain sugars (e.g. sugar cane, beets) or starch (e.g. wheat, corn) can be converted into bioethanol. The way it is currently being produced is controversial, however, since it generally uses corn, which is exacerbating the food crises that exist in many parts of the world. That is why Professor Tsang’s research on fungi is so crucial. It will allow us to transition to the next generation of biofuels, a form that does not rely on food sources.

"The advantage of using fuels made from forest and agricultural residues is that we are not increasing greenhouse gas emissions. The combustion of fossil fuels releases, in the form of CO₂, carbon trapped underground for millions of years. Trees and crops trap carbon from the atmosphere when they grow. The carbon trapped in plant biomass is released back in the atmosphere when they decompose to complete the natural cycle. By diverting plant biomass for fuel production we could help the planet as a whole be less reliant on oil and chemicals, without upsetting the natural cycle."

Professor of Biology at Concordia University

ADRIAN TSANG

Genome Québec believes that genomics will improve the way we care for the environment, which is why it has contributed to the

555 ล้านบาท
Here's a powerful provocation from artist Jae Rhim Lee. Can we commit our bodies to a cleaner, greener Earth, even after death? Naturally — using a special burial suit seeded with pollution-gobbling mushrooms. Yes, this just might be the strangest TEDTalk you'll ever see ...
The Mushroom Man
Collecting fungi is more than a hobby for Rodham Tulloss

One of the world's largest and most diverse collections of amanitas—the group of fungi that includes death caps, destroying angels and the polka-dotted mushrooms of Super Mario renown—is kept in a converted garage in Roosevelt, N.J. The stockpile is maintained by Rodham E. Tulloss, aged 70, who has documented species so rare they have been seen only once or twice in the past 50 years. His climate-controlled Herbarium Rooseveltensis Amanitarum may contain more distinct species than any university or museum. “I’ve never counted,” he says. “I can tell you I have well over 6,000 collections of Amanita alone.”

Tulloss, a retired electronics engineer and Bell Labs Fellow, is a passionate amateur who has collaborated with professionals. He has worked with evolutionary biologists at Harvard University and co-authored a paper with them in *PLOS ONE* that showed how amanitas lost genes associated with breaking down cellulose as they evolved—in effect, moving from free-living organisms into a long-term, symbiotic relationship with trees. He is also an honorary research associate at the New York Botanical Garden in the Bronx and has worked with mycologists at the Chinese Academy of Sciences's Kunming Institute of Botany and many others to reliably identify and describe new species.

Of the estimated 1.5 million fungi species worldwide, only a small percentage have been categorized. One hurdle is the biodiversity magnitude; another problem is that the fruiting bodies, the things we call mushrooms, can be inconspicuous and fleeting. Thomas Bruns, a microbiologist at the University of California, Berkeley, says, “If you had to identify all of the plants on earth by their fruit alone, it'd be a pretty tough job, and you'd probably make a lot of mistakes at it. That's kind of what we've got here.” Two years ago, when Bruns convened a meeting of the North American Mycoflora Project, an ambitious attempt to catalogue and map the distribution of species, he looked to Tulloss's garage. “He has a supervaluable collection,” Bruns says.

Genetic sequencing has revealed many misclassifications in the fungi world in recent years. Tulloss's late mentor, Dutch mycologist Cornelis Bas, called him a bear because of his persistence in sorting out the conflicting labels. He took the description to heart and calls himself the Amanita Bear. Motto: “Only you can prevent taxonomic and nomenclatural confusion!”

Tulloss's obsession does not extend to all mushrooms. In August he was walking in a cemetery near Steuben, Maine, when he ducked into the woods and spotted an edible fungus, *Hypomyces lactifluorum*, which resembles a cooked crustacean. “Lobsters!” He shouted. While his companions bent to collect them for dinner, Tulloss walked on in search of tall, white fungi with a ring around the stem: amanitas. “I don't know how much time I have left,” he says, “so I want to give it my all.”

This article was originally published with the title "Mushroom Man."
World Record Smashed in the National Fried Mushroom Eating Championship — 9 pounds in 8 minutes!
Boletus photoshopus
Dr. Humio Eguchi
Check It Out

ENOKI Mushroom Power

By Nan H. Kauffman
Chief Editor

Courtesy Information: http://www.san.or.girashi/2010/03/post_1274.php

Enoki mushrooms (called Enokitake or Enoki-dake in Japanese) are one of the most popular cultivated mushrooms in Japan. The domesticated version of this mushroom comes in bunches of thin white stalks joined at the base with small white caps. The Chinese call them Golden Needle Mushrooms. The Japanese people consume enoki mushrooms in miso soup, marinated with other vegetables, deep-fried like tempura, stir fried, or cooked like sweet rice. Rich in antioxidants, consuming enoki mushrooms is very effective to relieve constipation and also lowering cholesterol.

Recently, making enoki mushroom paste and freezing them into cubes has become a big hit in Japan. Simply, it is called ENOKI GOURI (Enoki Ice). You make the paste with a blender, cook it in a pot and freeze the paste in an ice tray. This innovative product is convenient for a variety of cooking options and allows consumers to stock up this nutritious food as a frozen soup broth for long-term keeping.

Enoki Gouri was created by Mr. Minoru Ato, a spokesperson of the board of directors of Japan Agricultural Cooperative (JA) in Nakano city, Nagano Prefecture. He took over his father's business at 18 and spent over 40 years in developing enoki mushroom cultivation; in a sense, he is a master of enoki mushrooms. He advises consumers to take enoki extract daily for their good health. Dr. Fumio Eguchi, a professor at Takasaki University of Health and Welfare in Gunma Prefecture confirms the nutritional benefits of enoki mushrooms. You can easily make Enoki Gouri, but can be very time consuming. Therefore, it is convenient for people to purchase the manufactured product online.

How to Make Enoki Gouri Ingredients:

Enoki mushrooms 300 grams (two packages) Water 400 ml
*Exposing Enoki mushrooms to sunshine before blending can increase Vitamin D2.

1. Cut off and discard the roots of the bunch of Enoki mushrooms and chop the stems into one-third lengths. Add them in the blender with water and blend for about 30 seconds.

2. Put the paste into a big pot and bring to a boil, then cook on low heat for an hour, stirring occasionally. Take care not to burn the mixture.

3. After cooking an hour, set to cool, and then put the cooled paste into an ice cube tray or Ziploc bag to freeze. *You can store the paste frozen for about two months.

How to Use Enoki Gouri

Consuming these cubes a daily is best for health benefits. You can use it as soup stock and cook a variety of soups or stews. You can cook it with vegetables and it goes with just about anything. For example, you can even add it in a green tea or in any kind of drinks. Some people enjoy it with alcohol on the rocks! Surprisingly, the frozen paste does not have any taste at all so it doesn't affect the flavor of dishes or drinks, and you would doubt that you are even eating or drinking the mushrooms. You can check the cooking video from the link above. While you live in Japan, I recommend you try unique and exotic foods as much as possible.
คุยกันป้ายปี 2560

1. การผลิตเห็ด และมาตรฐานสินค้าเรื่องเห็ด คุณปราโมทย์ ไทยทัตกุล อุปนายกสมาคมฯ
   - การผลิตเห็ด โดย คุณธนพลศิริ ปรี่ชุนบุรุษ โฆษิต
   - การผลิตเห็ดในถุงพลาสติก โดย คุณนิชิต รุดกิจ มิตรภาพฟาร์มเห็ด ดร.ฟιน
   - การผลิตเห็ดพาง โดย คุณบัณฑิต จาบุ ประธานกลุ่มกิจการชุมชนเห็ดและมักกิจการฟาร์มบ้านหนองหัว พนสมศิริ ณ ชัยกิจ
   - การผลิตเห็ดในแบบปิด (เห็ดเมืองหนาว) โดย คุณสำราญ ภัทรภัทร ที่ปรึกษาฟาร์มเห็ด ปิยะพร อินเตอร์แอคทีฟ ดร.ฟιน
   - การผลิตเห็ดสมุนไพร-เห็ดเป็นยา โดย คุณปรีชา โชคสินธุ์ ศูนย์เรียนรู้ฟาร์มเห็ดเป็นยา บริษัทบ้านเห็ดปทุมจัดตั้ง ปทุมธานี

2. การวิจัยและการพัฒนาเห็ด รห. ฐ. ชนะ ศิริ สำนักงานเกษตรฯ
   - ความหลากหลายของเห็ดป่าและการใช้ประโยชน์ โดย ดร. อุทัยวรรณ แสงวณิช คณะวนศาสตร์ มหาวิทยาลัยเกษตรศาสตร์
   - เทคโนโลยีการเก็บรักษาสายพันธุ์เห็ด และการผลิตเห็ด โดย นางสุวลักษณ์ ชัยชูชัย กรมวิชาการเกษตร
   - การวิจัยและพัฒนาเห็ดเพื่อเศรษฐกิจและอุตสาหกรรมของโครงการหลวง โดย ดร.ชนะ พรหมทอง วว.
   - การวิจัยและพัฒนาเห็ดเพื่อเศรษฐกิจของกลุ่มเกษตรกรโดย นายนวัชร์ วงศ์itizen สวนเห็ดดอกลึก ศรีสะเกษ

3. การตลาด คุณพานิชย์พงษ์ อาศัยเวช สมาคมฯ
   - การตลาดเห็ดต้องถึง (ภาคใต้) โดย คุณสมบัติ จุลินดา สงขลา
   - การส่งเสริมพัฒนาธุรกิจด้านเห็ด โดย คุณกฤษฎา ชัยทรัพย์ กรมส่งเสริมสหกรณ์
   - การตลาดเห็ดในมูลค่าของภาคเกษตรกร โดย คุณธนนเดช ภูษร เล่นงานสหภาพเกษตรกรแห่งชาติ
   - ตลาดเห็ดในห้างสรรพสินค้า (Super Market) โดย คุณไพรณัฐ คล้ายแก้ว Central food retail company Ltd.