SOUTH KOREA

PESTICIDE POLICY: PAST AND PRESENT

South Korea's use of pesticides began with its forced conversion to the Japanese agricultural regime during Japanese occupation in the early 20th Century. Behind rapid industrialisation in the post-1960s, were problems of environmental pollution and pesticide poisoning due to the world's highest pesticide use. With authorities leaving control to agrochemical companies, and the companies only interested in selling pesticides, a pesticide policy for nature and people is a long way off.

A few years ago, reports surfaced in the media about South Korea's pesticide use being 10 times higher than other developed countries. Is South Korea's pesticide use really so serious as to reach 10 times that of developed countries?

Korea's use of pesticides in agriculture began in 1906, during the Japanese occupation, when the country's agricultural structure was forcibly converted to the Japanese agricultural regime through the establishment of the Kwonupmobumjang (勸業模範場, Agricultural Exemplary Testing Station). The serious use of pesticides began in 1930, when a pesticide producer called Chosun Samgong opened its doors in Yeongdeungpo-eup, which was a part Gyeonggi-do at the time and now called Yeongdeungpo-gu after incorporated into Seoul. Since there was no regulatory system for pesticides until the 1950s, anyone could establish a pesticide company. The Pesticide Management Act was enacted in 1957, when there were already 13 pesticide companies in operation. The law was introduced in response to the need to manage the proliferation of pesticide producers and regulate the use of pesticides, but in the end, it had little effect.

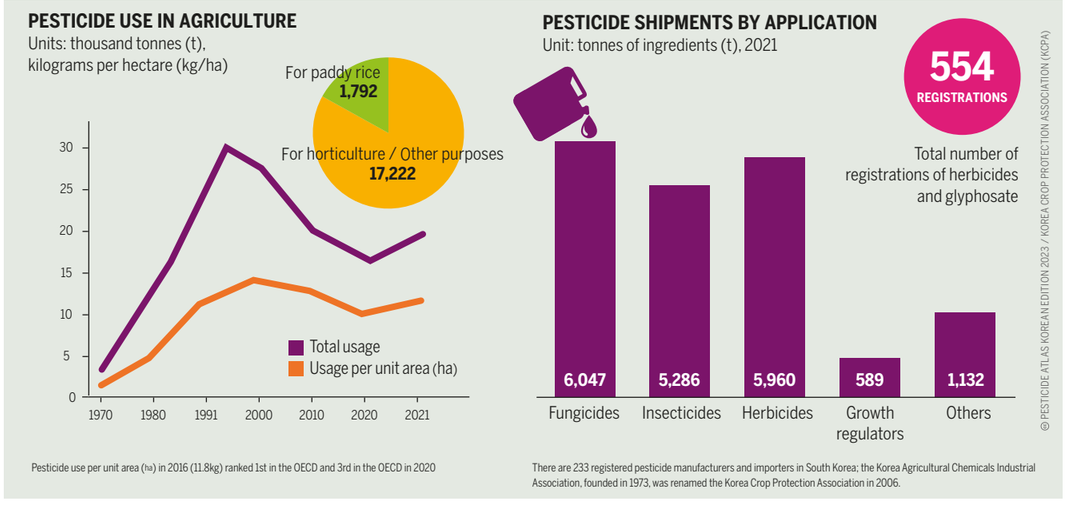
At the time, pesticide management was not about restricting excessive pesticide use, but about preventing "bad pesticides", i.e. unlicensed pesticides. As a result, pesticides became a commodity that could only be manufactured by companies with government-issued licenses. Products that have been distributed or used by individuals became illegal and the corporate monopolies took over the sector. Therefore, the enactment of the Pesticide Management Act of 1957 can be seen as an impetus to reorganising the pesticide market around the corporates, rather than a way to prevent the harmful effects of pesticides in the first place.

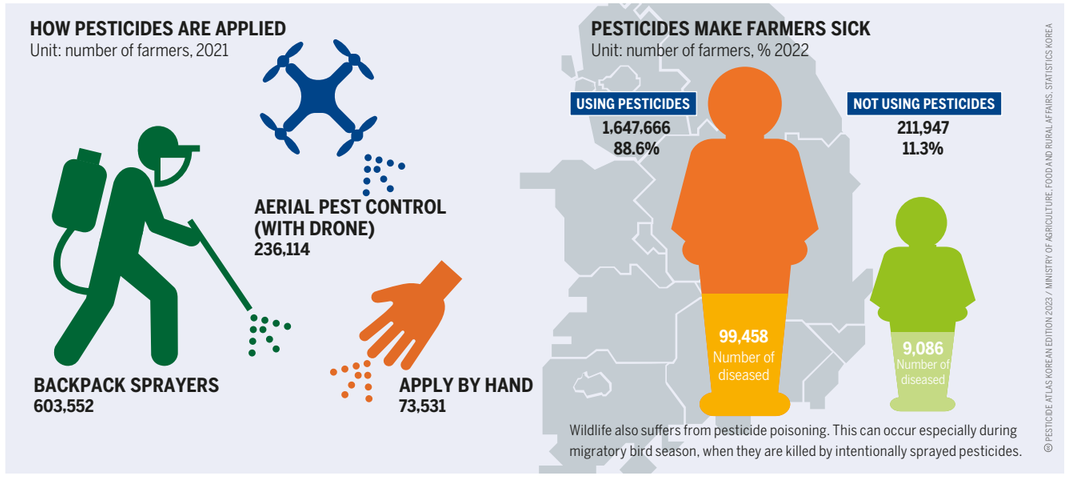
After the legislation of the Pesticide Management Act, domestic production of pesticides began to replace imported ones, and pesticide use began to increase in line with that trend. In addition, as regulations on pesticide production tightened, small pesticide manufacturers closed their doors, leaving only 15 in the 1970s and 10 by the mid-1970s.

Pesticide use in South Korea began to increase significantly in the mid-1960s, when the country began pursuing a full-scale economic growth policy, starting with the First Five-Year Economic Development Plan in 1962. To this end, industrialisation was expanded and large numbers of industrial workers were created through policies that facilitated a rural exodus. Starting in the 1970s, when the Saemaul movement began, the actual amount of pesticides used increased steeply. As farmers left the countryside, the use of agricultural machinery, pesticides, and chemical fertilisers were expanded to compensate for the shortage of labour.

The issue of pesticide use has been raised since the late 1980s. Of course, even before that, there were often cases of pesticide poisoning, highlighting the necessity for a system to regulate pesticide use. However, problems related to pesticide use only came to the attention of the Korean public in 1987, when the country, pressured by the United States to open up the agricultural market, began importing agricultural products.

South Korea's pesticide use is among the highest in the world. Laws and systems are adapted to benefit pesticide companies and regulate only farmers; policies to address the root causes of pesticide use are lacking.





tural products.

As a result, in 1988, 30 years after the enactment of the Pesticide Management Act, pesticide residue standards to manage the amount of pesticide used were created for the first time. It is worth noting that in 1981, the entire Pesticide Management Act was revised to deregulate pesticide inspection by the government and to allow for self-inspection by the companies. Relaxing regulations by leaving it to the producers, while the need for pesticide management grew as the amount used increased significantly, was the opposite of regulating pesticide use.

With the influx of foreign agricultural products, came a change in consumer attitudes. Previously, imports were meant to temporarily fill production shortfalls; however, following the pressure to open up to U.S. agricultural imports in 1987, it became a matter of importing what the U.S. wanted to export as an exporter, and not what South Korea needed. It was also at this time that attention began to be paid to the issue of pesticide residues, which eventually led to the establishment of a pesticide residue standard in 1988 and to the interest in eco-friendly agriculture that we see today.

But not everything went as expected. While the Rio Declaration of 1992 (United Nations Conference on Environment and Development) raised environmental and ecological concerns, the creation of the World Trade Organization (WTO) in 1995 opened up a whole new world. The Uruguay Round discussed full market liberalisation to resolve the crisis under the General Agreement on Tariffs and Trade (GATT), but failed to achieve it. Instead, the Uruguay Round resulted in the Agreement on Trade-Related Aspects of Intellectual Property Rights, which greatly expanded the scope of monopolies on living things, including seeds.

Accordingly, in 1995, the Pesticide Management Act was completely revised to protect the intellectual property rights of pesticide companies, and the pesticide companies became the authority for almost everything related to pesticide manufacturing. The process of changing the Pesticide Management Act was akin to making the use of pesticides a matter of course for the sake of increasing production and increasing food self-sufficiency.

DDT was banned globally in the 1970s and prohibited in Korea in 1979. But there was an incident where the DDT was detected in eggs from eco-friendly farms in 2017, raising awareness about pesticide residue in the soil.

Agrotoxin is another word for pesticide. Pesticide contamination affects farmers who use pesticides as well as those who don't, and it travels from agricultural fields to rivers and oceans.

In 2019, the government introduced the Positive List System (PLS) for pesticides. This system manages pesticides below the uniform standard (0.01 mg/kg), except for pesticides that have set residue limits. However,, it only prevents the use of unregistered pesticides and does not solve the fundamental problem of using pesticide.

In the end, it regulates farmers rather than pesticide manufacturers. The government has been revising pesticide management laws for decades to benefit pesticide companies, but there is still no system in place to manage pesticide use to protect the environment, ecosystems, and people's health.

Despite this fact, pesticide use has been gradually decreasing since the Environmental Agriculture Fosterage Act of 1997 (now known as the Environment-Friendly Agriculture and Fisheries Act) was implemented in December 1998. This means, not only among farmers but also among the public, that awareness has risen. In particular, pesticide residues in agricultural products have come into the spotlight as a number of chemicals have been identified as the main cause of children suffering from various diseases, including atopic diseases.

What surprising is the fact that one of the first products to appear in response to this trend was genetically modified seeds, which were created by pesticide manufacturers through the acquisition of seed companies. Although these products were advertised as reducing pesticide use, they only served to reinforce the monopolisation of seeds and pesticides. Agricultural corporations are thriving from the collaboration between seeds and pesticides, with little regard for public safety.

Are there no alternatives? There are. There remains a tradition of farming with indigenous seeds passed down from generation to generation and using natural products and minerals instead of chemical pesticides. There are also a growing number of farmers who succeeds the tradition. What's unfortunate is that the value of this tradition is still not adequately recognised.

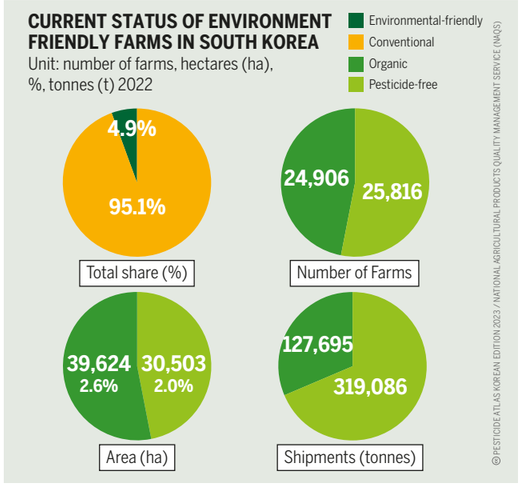
SOUTH KOREA

THE EVOLUTION OF ECO-FRIENDLY AGRICULTURAL CERTIFICATION SYSTEM

Environmentally friendly agriculture in South Korea began as a bio-agriculture movement in which farmers followed the natural cycle of life. The government implemented an eco-friendly agricultural policy centred on pesticide detection in the face of pesticide residue issues in imported agricultural products. However, there is a growing trend to shift the focus from pesticide testing to the original value of farming processes and environmental conservation.

Environment-friendly agriculture in South Korea began in the mid-1960s as a bio-agriculture (or life-agriculture) movement by farmers who recognised the order of the cycle of life and the value of coexistence in the face of ecological destruction and environmental pollution. At the time, the government promoted the "Green Revolution", which called for massively injecting new varieties, chemical fertilisers and pesticides into agricultural fields to increase food production. Agriculture became dependent on chemical fertilisers and pesticides. Farmlands were polluted, and the health of farmers and the safety of agricultural products deteriorated significantly.

With the Uruguay Round (UR) negotiations in 1986, Korean agriculture was placed under a regime of opened agricultural imports. In 1989, carcinogenic pesticides were detected in imported grapefruit from the United States, raising concerns over the safety of imported agricultural products. This prompted the government to become increasingly interested in eco-friendly agriculture. The Ministry of Agriculture formed the Organic Agriculture Development Planning Team in 1991. It defined organic agriculture as farming that does not use chemical fertilisers, synthetic pesticides (pesticides, growth regulators, herbicides), or livestock feed additives, but only organic matter, natural minerals and microorganisms. The government simply promoted "no chemicals", while failing to consider the true value of organic agriculture in maintaining ecosystems and emphasising the material cycle. This pesticide-centred concept has been an important basis for the government to establish laws and policies related to eco-friendly agriculture.

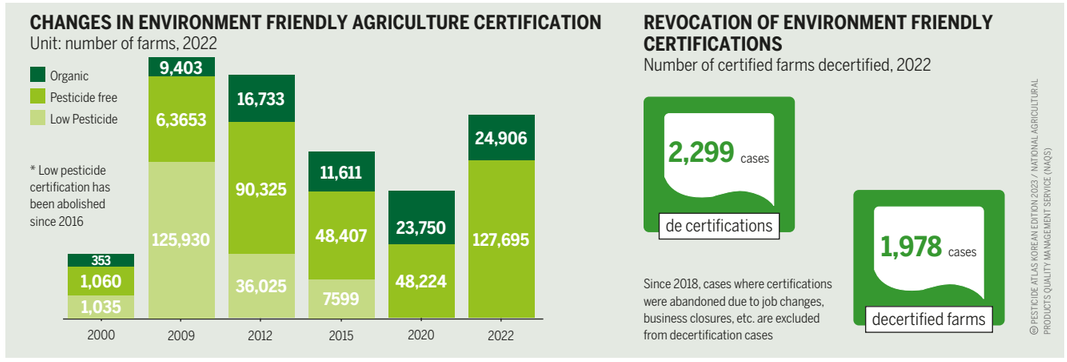


In 1994, a group of private organisations from both the producer and consumer sides that had been pursuing environmental agriculture formed the Council of Environmental Conservation Agriculture Producer and Consumer Organizations (now the Korean Federation of Sustainable Agriculture Organizations). They decided to expand environmental agriculture as a counter to conventional agriculture and campaigned for legislation. As a result, the Environment-Friendly Agriculture Fosterage Act was enacted in December 1997 and implemented in 1998. Until then, such agricultural practices had various designations, including organic agriculture, sustainable agriculture, regenerative agriculture, biological agriculture, natural agriculture, ecological agriculture, alternative agriculture, environmentally friendly agriculture, and conservation agriculture. The government formalised the term as "environmental (conservation) agriculture" in 1996 and then changed it to "environment-friendly agriculture" in 1998, which it has been using ever since.

The Act defines environmental agriculture as agriculture that conserves the environment and produces safe agricultural, livestock, and forestry products by ensuring the use of standard amounts of chemicals such as pesticides, fertilisers, and livestock feed additives in agricultural production process, as well as the “proper treatment” of livestock manure. Reflecting this definition, environmental agricultural products were classified based on the use of chemical materials into general environmental agricultural products (agricultural products that comply with the standards for safe use of pesticides and fertiliser application), organic agricultural products, transitional organic agricultural products, pesticide-free agricultural products, and low-pesticide agricultural products. A labelling scheme, where farmers voluntarily report and label their products, was also introduced.

After changing the name of the law from “environmental agriculture” to “environment-friendly agriculture” and abolishing the labelling scheme, a mandatory certification system was introduced in 2001. In 2006, the law was amended to remove the concept of conventional agriculture (complying with standards for the safe use of pesticides and keeping the use of chemicals at an appropriate level) from the list, and further reduced the category to only include organic, pesticide-free, and low-pesticide agricultural products. The law was revised again in 2009 to reorganize eco-friendly agriculture around organic agriculture and abolish the low-pesticide agricultural certification.

Since 2000, South Korea's environment-friendly agriculture has grown 35 times in number of farms, 60 times in cultivated area, and 20 times in production. As of 2020, about 834 tonnes of pesticides were reduced, contributing to environmental conservation.



In 2012, the Environment-Friendly Agriculture and Fisheries Act was enacted to unify the certification of agricultural products and processed foods into an eco-friendly agri-food certification system. In 2019, the importance of production processes that maintain healthy ecosystems was included in the definition of environment-friendly agriculture. It also includes promoting biodiversity, promoting biological cycles and activities in the soil, and preserving healthy agricultural and fishery ecosystems. However, since the revised law is mostly focused on management and regulation based on the certification system, it has an inherent bias towards certification-oriented policies. It is necessary to expand the scope of the policy so that non-certified, eco-friendly agriculture can be addressed.

The primary aspect of the certification for eco-friendly agricultural products is the detection of pesticide residues in the final product or soil. There is no requirement to evaluate the farming process. Consumers are also not adequately informed about the ecological and environmental conservation functions of eco-friendly agricultural products, so the products are only recognised as “safe agricultural products”. In addition, even if farmers grow according to the certification standards, their certification is often revoked following the detection of pesticide residues coming from pesticide spraying at nearby agricultural fields, flooding and inflow of agricultural water, residue in soil, and other unavoidable pollution.

About 22 years have passed since the certification system was introduced. It has expanded from a certification system centred on agricultural products to a system that also covers organic foods and materials. The number of eco-friendly farmers has expanded 35 times from 1,413 in 2000 (excluding low-pesticide farmers) to 50,722 in 2022, with a 60-fold increase in cultivation area and 20-fold increase in production. The use of chemicals was also reduced (usage of 18,062 tonnes of chemical fertiliser and 843 tonnes of pesticide was avoided in 2020), preserving the soil and environment. Despite the growth in scale, the number of farmers practicing eco-friendly agriculture and the area under cultivation has stagnated since its peak in 2009. It is also not easy for new farmers to enter the eco-friendly agriculture sector.

Due to the certification system, eco-friendly agriculture has maintained a high external-input approach. The fundamental value of eco-friendly agriculture, which emphasizes circularity, has gradually faded, and the relational aspect has also been weakened. Furthermore, eco-friendly farmers are facing a lack of sales channels and income instability, resulting in the stagnation of eco-friendly agriculture.

After 22 years, the environment-friendly agricultural certification program has grown in size, but it is stagnating. It is difficult for new farmers to enter, and numerous tests are required for farmers to prove themselves.

The average concentration of pesticide residues detected in conventional agriculture in South Korea is 0.134 ppm, which is 67 times higher than the 0.002 ppm in eco-friendly agriculture.

In the U.S., the organic label can still be used on the products if the detected level is below 1/20th of the allowable level, taking into consideration unavoidable contamination where the producer does not use pesticides. In South Korea, on the other hand, the certification is “no detection” basis. Since environmental agriculture aims to improve and restore the deteriorating soil and water conditions, certification should not be solely based on test analysis and inspection results. Instead, it should focus on farming processes (farming operations, producers' qualities, and physical environment) and management methods that preserve and protect the environment.

Recently, the South Korean government has been pushing to improve the approach to administrative penalties for unintentional pesticide contamination. The system has been changed to require the certification body to re-examine the case if a re-examination is requested with proof. This has given innocent farmers a chance to seek redress, but if the farmers cannot prove it themselves, the results won't change.

To survive the crisis of eco-friendly agriculture in the era of climate crisis, we need to enhance the cycle of humans and nature in the region, and let symbiosis and life find their places. Farmers, consumers, and the government should work together to practice and promote eco-friendly agriculture in a direction that values low-input, internal cycle, and natural symbiosis, instead of eco-friendly agricultural policies centred on test, analysis and results-oriented certifications, and permitted agricultural materials. ●