

# Monsanto's pig monopoly

## US corporation applies for patents on most breeds of pig

The agro-corporation Monsanto has this year applied to the World Intellectual Property Organisation in Geneva for twelve patents on breeding pigs. The European Patent Office in Munich will also decide on these applications. To make clear the far-reaching implications of Monsanto's intentions with patents Greenpeace studied the genes of the pig breeds in one of Monsanto's claims - and found that all breeds of swine bred conventionally and organically come under its claims. If the patent is approved Monsanto can claim the offspring of these pigs as its invention and collect licence fees from their owners.

Greenpeace discovered back in August 2005 that Monsanto had filed for two patents for pig-breeding. Patents WO 2005/017204[1] and WO 2005/015989[2] had been filed with the World Intellectual Property Organisation (WIPO) in Geneva, where they have been on the register since February 2005.

## Further patents discovered

Greenpeace, together with the organisation *Kein Patent auf Leben* (no patents on life) in Munich and pig breeders from Denmark, has in the meantime investigated and discovered other patent applications by Monsanto to the WIPO. Monsanto has filed for a total of a dozen patents on swine. The new applications make claims on various breeding methods[3], select sperm[4] and declare business methods in pig-breeding to be inventions[5].

Application WO 2005078133 moreover claims whole populations of swine. The applications for patents show that Monsanto wants to systematically extend its sphere of influence in the area of pig-breeding.

## Monsanto affirms intentions

After Greenpeace had made its patent applications public, Monsanto affirmed to US media its intention of becoming a global player in pig-breeding[6]:

"The Greenpeace campaign responds to two patents filed for the animal agriculture business. Monsanto's patent (WO 2005/015989) identifies a unique set of breeding processes - such as improved artificial insemination procedures and marker assisted breeding - that allows us to help customers produce higher quality swine. The second patent (WO 2005/017204) identifies a specific gene marker that is linked to traits valued by swine producers. Both of these patents are designed to help Monsanto maintain a competitive position in the swine business so that we can continue to deliver innovations to customers."

Reuters news agency also published a report in August 2005 according to which Monsanto would pursue its applications for patents.[7]

According to Reuters, Monsanto already has a 10-12 per cent share in the US firm, Pig Improvement Co., the market leader in the USA and holding a market share of around 40%.

## Greenpeace has pigs tested

In the light of Monsanto's claims to a monopoly, Greenpeace carried out research to see to what extent the patent applications could apply to pig-breeding in Europe.

Greenpeace commissioned a test to be developed based on the methods described in patent application WO 2005/017204, so as to determine how often the genes claimed were present in European pigs' genetic make-up. Individual animals were also tested on a random basis in order to examine their natural genetic disposition.

German landrace, Duroc and Yorkshire pigs, breeds often used in fattening, were examined. Greenpeace further commissioned tests to be made on pigs used in organic farms, such as Schwaebisch Haellische pigs. Breeds from Denmark were also incorporated (Danish landrace, Large White, Hampshire-Duroc).

Finally, rare breeds like those kept and bred by Greenpeace at the Warder animal park in Schleswig Holstein, were examined. These included Angler Saddleback and Rotbunte Husumer pigs.

Genetic variations were looked for as were described in the patent specification and will be used as a criterion for the patent protection striven for.

Rotbunte Husumer piglet at Greenpeace's Arche Warder<sup>[8]</sup>, the biggest animal park in Europe for domestic animals which are rare and threatened by extinction. © Sabine Vielmo



## Almost all breeds of pig are affected by the applications for patents

The findings of the laboratory analysis of 30 animals of nine different breeds were that almost all the breeds are affected by the patent claims. They possess a genetic combination which according to the patent specification is regarded as Monsanto's invention. The animals affected are distributed over eight breeds including those kept at Arche Warder.

The eight breeds of pig are:

Angler Saddleback

Rotbunte Husumer

Schwaebisch Haellische swine  
German landrace, crossed with Large White  
Hampshire, crossed with Duroc  
Danish landrace  
Yorkshire  
Pietrain

The genetic variation described occurred in almost half the pigs studied. The homozygous variants particularly notable in the original patent specification<sup>[9]</sup> were found in three animals (10 per cent of the pigs), and heterozygous variants having the desired combination of genes in roughly 40 per cent (12 animals).

If the patent is approved it would be possible for Monsanto to at any time and with little effort claim the offspring of these pigs as being its invention.

In order to have access to as many swine as possible, the patent specification does not describe exactly how often the genetic combinations concerned should occur in a herd; Monsanto can then identify it as an invention. It is simply noted, in general, that the frequency of desired combinations should increase. With one variant having been preferred in the original patent specification, Monsanto in May 2005 submitted amended claims in which both genetic variants are claimed.

If patent WO 2005/017204 is granted as filed it will apply to pig breeding almost without restriction.

## Who has the longest curly tail?

Registering these patents is like registering a hypothetical patent in which all pigs whose length of ear or tail is measured during breeding are regarded as Monsanto's invention. The company could for example claim it had determined that bigger pigs sometimes have longer ears or tails. All pigs having this feature would therefore in future also be seen as Monsanto's invention.

It sounds absurd and comical but takes on alarming proportions when one thinks that Monsanto has by using similar methods (buying up companies and filing patents) risen to be number one in the international seed trade. Here too a large number of varieties and species of plant have been claimed in patents. This strongly suggests Monsanto's concern now is to attain a similar position in pig-breeding.

## Legal situation

Patent applications in Europe have a certain chance of success given the lack of clarity in patent legislation internationally.

- EU patent law (Directive 98/44/EC) bans patents on specific breeds of animal but more broadly described patents on animals (where several breeds are affected) can be approved (Article 4.2). This would be precisely the case here.
- It is furthermore true that according to EU patent law "essentially biological processes for the breeding of plants and animals" may not be patented. But this is qualified by the rider that processes are only essentially biological if they are "fully" biological (Article 2.2). In the present

case the step of making a genetic diagnosis could be regarded as a technical step, leading to the claims being able to be approved. Similar patents have already been issued in plant breeding.

- Even if the WIPO were to reject the applications for patents before it - something which would be legally possible - patent applications of this kind could continue to be granted in other cases because EU patent laws leave far too much room for all possible interpretations.

## Greenpeace demands

- A ban on patenting genes and forms of life, particularly seed and animals
- The revocation of Monsanto's patent applications
- Re-negotiation of the EU law on patents

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[1] Patent WO 2005/017204 is based on a process for making a genetic diagnosis on pigs. This aims at finding genetic variations which are connected with faster growth and less fat.

[2] In patent WO 2005/015989 Monsanto describes methods already common in pig-breeding, such as crossing, selection and artificial insemination.

[3] WO 2005015989, WO 2005017204, EP 1517607, WO 2004059282, EP 1468288

[4] WO 2004087177, WO 2004088283, WO 2005094852, WO 2005095590

[5] EP 1532563

[6] "GREENPEACE ASSAILS VALIDITY OF MONSANTO SWINE BREEDING PATENTS", Media contact Monsanto: Mica DeLong, Tel. 001-314-694-2992

[7] <http://today.reuters.com/business/newsarticle.aspx?type=tnBusinessNews&storyID=nN10436446>

[8] Arche Warder, Langwedeler Weg 11, 24646 Warder, Schleswig Holstein, Germany. Telephone: ++49 (0) 43 29 / 91 34-0 • Fax: ++49 (0) 43 29 / 91 34-11. On the internet at [www.arche-warder.de](http://www.arche-warder.de).

[9] altered on 6 May 2005