REWE GROUP

GUIDELINE

FOR SOY IN ANIMAL FEED

CONTENT

I OBJECTIVE AND AREA OF APPLICATION

A number of store brand products are manufactured for the REWE Group that contain raw materials drawn from livestock. Hereafter, such products are referred to as “processed animal products.” This includes, first and foremost, milk and dairy products, but also eggs, as well as meat and sausage products.
The different types of livestock have highly individualised needs when it comes to feeding systems and their individual components. A sufficient supply of protein tailored for each individual species is of central importance to the economic success of raising livestock and the quality of the processed animal products. It is in this context that the supplementary feeding of protein through soy meal imported from overseas plays a central role today.
The REWE Group sees itself as a trade company responsible for future generations and thus promotes the development of a more sustainable range of products. For this reason, the REWE Group strives to raise awareness among its employees, suppliers, and upstream suppliers with regard to the sustainable feeding of protein to livestock. The REWE Group thereby furthers its goal of rendering the feeding of protein for milk and dairy products as well as for egg and meat production for its store brand products more sustainable and responsible. In particular, the REWE Group thus aims at addressing a clearly growing desire among customers for more sustainable processed animal products, especially the ones that do not involve the feeding of transgenic soy varieties to livestock.

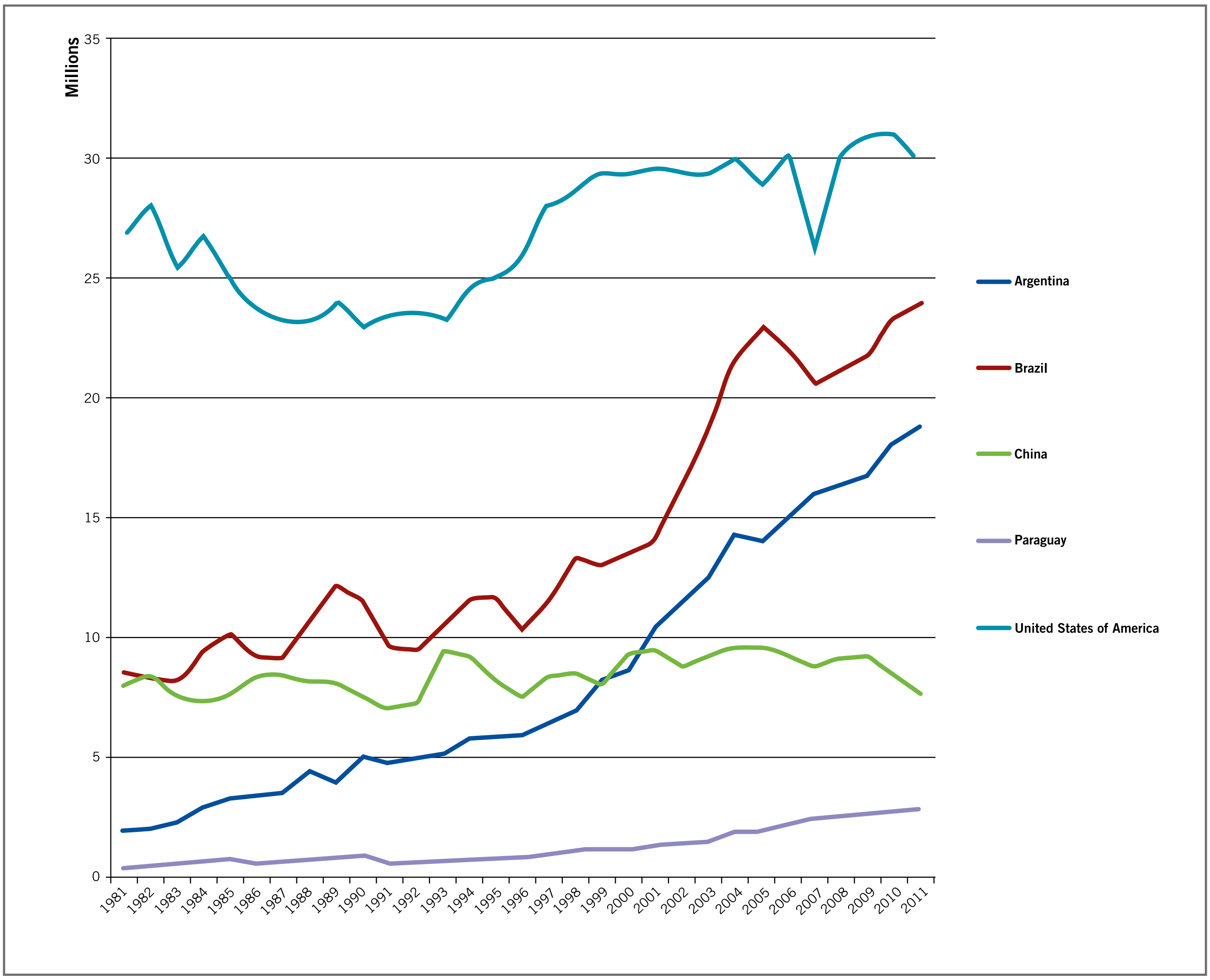
The guideline applies to all fresh REWE Group store brand products of animal origin sold in Germany. Organic store brand products are not covered by this guideline.

II GENERAL CONDITIONS

The livestock used to manufacture the REWE Group's store brand products are raised predominantly in Germany and, to a limited extent, also in the neighbouring countries of the Netherlands, Belgium, Luxembourg, France, Austria, and Denmark. Various strategies for feeding protein to livestock are applied depending on the species, region, and the specific system of agricultural operation involved. Without getting into the specifics of the different systems, we can readily maintain that soy meal imported from overseas is currently the most important feed ingredient for supplying livestock with protein, both in Germany and the aforementioned neighbouring countries.
Apart from the U.S., the countries currently growing the highest amount of soybeans are Brazil, Argentina, China and India. In 2011, more than 260 million tons of soybeans were cultivated worldwide.[1]
Cultivation has increased very sharply across the globe in recent years (see figure), because soybeans can be used in various ways, for example as a foodstuff, an energy source, and as a feed component. The worldwide area of soy cultivation has reached more than 100 million hectares, which is six times the size of the overall area dedicated to agricultural cultivation in Germany.
In 2011, approximately 45 million tons of soy (30 million tons of soy meal and 15 million tons of soy beans) were exported to Europe. Germany alone consumed 6.8 million tons of soy (3.4 million tons of meal and 3.4 million tons of beans), the majority was used to meet the growing demand for protein in domestic livestock feeding.[2] Currently, the main countries supplying soy meal fed in Germany are Brazil and Argentina.

1) FAOSTAT 2013
2) FAOSTAT 2013

Figure: Development of Soy Cultivation by Hectare (Source: FAOSTAT 2013)



III PROBLEMS RELATED TO SOY CULTIVATION IN SOUTH AMERICA

3.1 The use of genetic engineering

The cultivation of transgenic varieties of soy has been permitted in America since the 1990s. This led, among other things, to a sharp increase in soy production. To begin with, varieties of soy came onto the market, which have been made resistant to the synthetic herbicide active ingredient glyphosate by means of genetic modification. This substance is the essential ingredient of the complete herbicide Roundup, which is why such genetically modified soy varieties are commonly known as "Roundup ready".

In summary, it can be said that since then, genetically modified, glyphosate-resistant soy varieties have been introduced that can be grown weed-free using simple chemical applications of glyphosate. In this context, thorough agricultural measures to clear off weeds have become superfluous.

This development came about in the early 1990s, at the time when the American agricultural sector suffered from a rather great depression. As a result, both North and South American farmers were quick to adopt the transgenic soy varieties, primarily because they made soy cultivation more cost-effective. Complex soil management measures were no longer needed to eliminate weeds. It also allowed farmers to ignore certain crop rotation rules, because it was now possible to meet such challenges through the more cost-effective alternative of single or multiple application of glyphosate during the soybean cultivation season.

3.2 Changes in land use

There are other significant reasons for the intense expansion of soy cultivation since the 1990s that should be mentioned, aside from the more cost-effective methods of cultivating transgenic soy varieties. One substantial reason is the worldwide increase in the demand for meat that in turn provoked additional demand for cost-effective sources of protein feed, such as South American soybeans. China is currently the world's largest consumer of soy meal.

The European BSE crisis and the resulting prohibition of using animal protein in feed further stimulated the demand for soy.

Europe is also cultivating less and less protein feed in its own crop areas, as it seemed more economical to farmers to cultivate energy plants, such as corn, for biogas plants. For these and other reasons, soy cultivation, especially in South America, has led to tremendous direct and indirect changes in land use in regions that previously had a significant ecologically balancing function.

3.2.1 Direct changes in land use

The most damaging extensions of soy cultivation were and continue to be those in regions which had previously been primary and also secondary forests. Soy cultivation is also expanding into the important savannah regions of South America.[3] These regions are characterised by great biodiversity and also represent an important CO_2 sink due to their pristine vegetation. Direct soy cultivation in ancient forest and savannah regions not only significantly threatens biodiversity, but also releases large amounts of harmful CO_2.

The cultivation of transgenic, glyphosate-resistant soy varieties has also led to soy cultivation in drier cultivation areas. Transgenic soy varieties can thereby be sown in soil that has barely been tilled using a "water-saving, direct-seeding process", because the competing weeds can easily be handled through multiple sprayings of glyphosates, without any form of tillage. On the other hand, these dry areas that have become subject to agricultural exploitation are very prone to erosion, because the year-round, protecting vegetation is no longer there, and as a result, the valuable topsoil ingredients degrade over time under the influence of extreme weather conditions. As a further result, such regions lose more and more of their natural productivity.

[3] Ibrahim/Porro/Mauricio 2010
[4] Reichert/Reichardt 2011

3.2.2 Indirect changes in land use

Soy cultivation also causes a considerable amount of indirect changes in land use, as the increase in cultivation in many parts of South America has come at the expense of small farmers: many small farmers are often unable to pay the resulting higher land lease rates in their traditional regions and are forced to exploit new areas, including forest regions, through clearing.[5]

3.3 Loss of biodiversity

As described in point 3.1 above, the changes in land use considerably contribute to a loss of biodiversity and the release of environmentally harmful CO_2 trapped in the soil.

However, the cultivation of transgenic, glyphosate-resistant soy also leads to a massive loss of biodiversity in another way. Because of the agriculturally very simple process of weed management through total herbicides containing glyphosate, the agricultural structure of soy cultivation areas is changed to a significant extent. It is no longer necessary for farmers to deal with the challenge of managing weeds in their soy cultivation through crop rotation as part of their best agricultural practices. Instead, they can now cultivate soy as a labour-efficient, very cost-effective, large-scale monoculture that is, however, also poor in biodiversity.[6]

[5] Altieri/Pengue n.d.

3.4 Resistances

A problem that is currently emerging with the cultivation of transgenic soy varieties is a resistance to total herbicides containing glyphosate that has developed over time in certain weed varieties.[7]

The economic advantage that emerged in the 1990s of cultivating transgenic, glyphosate-resistant soy varieties has become relative. Both in the U.S., where glyphosate resistance has become a major problem, and also increasingly in South America, new cultivation techniques must be developed in response to the spread of "problem weeds". To date, 24 weeds have been identified that have developed these resistances.[8] One avenue pursued by the North American agrochemical industry is the development and certification of new transgenic plants for cultivation that are no longer simply resistant to glyphosate, but also to other herbicides containing the active ingredient 2,4-D. However, this active ingredient still has very limited approval in Europe due to its toxicity. The example of glyphosate-resistant transgenic soy varieties has also shown that such technologies have long-term risks.

3.5 Health risks

The cultivation of soy in large areas and often as a monoculture in South America makes it very economical to use crop-spraying aircraft to spread pesticides. Thus, it is possible to cover a larger area more quickly without resorting to the alternative of rolling over the crops with a sprayer implement, which damages them by leaving tracks. On the other hand, the use of crop-spraying aircrafts entails higher risks, as the greater drift of chemical pesticides from fast-flying planes, often released considerably above ground is unavoidable. This also means that people living in small villages or single family homes in soy cultivation regions often come into direct contact with the chemical herbicides. The active ingredient glyphosate that is so often used in soy cultivation areas is coming under the increasing scrutiny of all concerned parties, as well as doctors and scientists, who suspect that it may be related to adverse health effects in rural populations.[9]

[6] Ibrahim/Porro/Mauricio 2010
[7] Antoniou et al. 2010
[8] Heap 2013
[9] Antoniou et al. 2010

IV EFFORTS IN SUSTAINABLE DEVELOPMENT

In order to deal responsibly with the problems related to the cultivation of soy in South America as described in points 3.1. to 3.5., the REWE Group has developed a strategy for all processed animal products that regulates the supply of protein through soy to livestock.
This strategy can basically be described as consisting of two complementary measures.

4.1 Substitution

As part of its sustainable development strategy for its own store brand products, the REWE Group demands and promotes the successive substitution of soy meal imported from South America with domestic and European protein sources. This should, first of all, contribute to limit the negative effects of the direct and indirect changes in land use in South America. The way in which the soy substitution can be brought about depends on the individual forms of animal husbandry and their individual quality requirements for protein composition.

An additional, fundamental reason for the REWE Group's shift in strategy towards prioritising domestic and European sources of protein for feed is that the increased cultivation of domestic protein plants enriches European agriculture through crop rotation and thereby also makes it more sustainable. Even the cultivation of legumes (fava beans, peas, lupins, and also European soybeans) has the great additional advantage that such protein plants not only help improve crop rotation, but they also naturally enrich soil with nitrogen, which means that subsequent crops will need less synthetic nitrogen fertilizer to be applied, which is known to contribute to climate change.
This is why the REWE Group is a founding member of the Danube Soya Association (Verein Donau Soja; http://www.donausoja.org), whose principal task is the promotion of cultivating non-GMO soy in the European Danube Region.

4.2 Freedom from genetic engineering

It will not be possible to fully substitute soy imported from overseas in the foreseeable future, as this demand must be accompanied by changes in sector processes within European agriculture. As a result, a large share of protein feed will continue to be provided through soy imported from overseas.
However, in order to reduce the negative side effects of cultivating transgenic soybeans, especially the loss of biodiversity, the REWE Group has defined freedom from generic engineering as one of its demands. This means that livestock used for the REWE Group's animal products is fed according to the legally prescribed general conditions.
Furthermore, there is a growing number of consumers who very much wish to be able to consume non-GMO foods.[10] The REWE Group wants to address this wish.
In this way, the REWE Group contributes not only to a reduction of the direct and indirect changes in land use resulting from the continuing increase of soybean cultivation, but also to the abatement of unforeseeable long-term negative side effects from the use of genetically modified soy varieties in countries that cultivate soy.

10) TNS Opinion & Social 2010

V IMPLEMENTATION

The substitution of non-GMO feed described in points 4.1. and in 4.2. will be implemented on a species-specific basis. Therefore, the substitution processes for ruminants (for example cows, beef cattle, sheep) are simpler and easier to implement than for mono-gastric animals such as poultry and pigs. Moreover, the implementation depends on the individual general conditions of the procurement structure for each individual animal product. Thus, the implementation of non-GMO feed for poultry, due to the vertical integration of the various production levels, is easier to bring about than for pigs,

where sale occurs on the free market, or through horizontal cooperation.

It is in this setting that the REWE Group has regulated specific timelines for implementing the measures set forth in this guideline in the form of additional, internal principles.

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Phone: +49 221 149-1050 I Fax: +49 221 138-898
Contact Person: Martin Brüning I presse@rewe-group.com

Discussing the issue of sustainable soy is important to us.
For all suggestions and questions, please contact us at: nachhaltiges-soja@rewe-group.com

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