



ASSESSMENT OF THE SALMONELLA MONITORING SYSTEM, ACCORDING TO THE OASIS METHOD

OQUALIM volunteered for its salmonella in animal feed monitoring system to be assessed according to the OASIS method developed by the Anses in 2010 (Hendrikx, 2011). The system steered by OQUALIM was one of the first in the private sector to have carried out this approach in the feed health safety area. OQUALIM's aim was to carry out an in-depth analysis of its functioning. An assessment highlights the strengths and identifies progress tracks for the actions implemented.

The "flash" version of the OASIS method was applied. The assessment team filled in a detailed table of the system. These answers were then discussed with a broader panel of players, representative of both the different technical contributions to the system and the different stakeholders comprising it. All participants in the rating team validated the final report which was shared with the "Plan" steering committees.

In a few lines, here are the main conclusions and findings. From an overall viewpoint, the assessment confirmed the system's relevance and effectiveness. The monitoring aims are clear, and the functioning rules are formalised. The levels of adhesion are very high, and enable good monitoring coverage for over 10 years.

The involvement of the laboratories, the existence of a centralised data base and the diffusion of notifications in the event of detection of regulated salmonella guarantee the system's effectiveness.

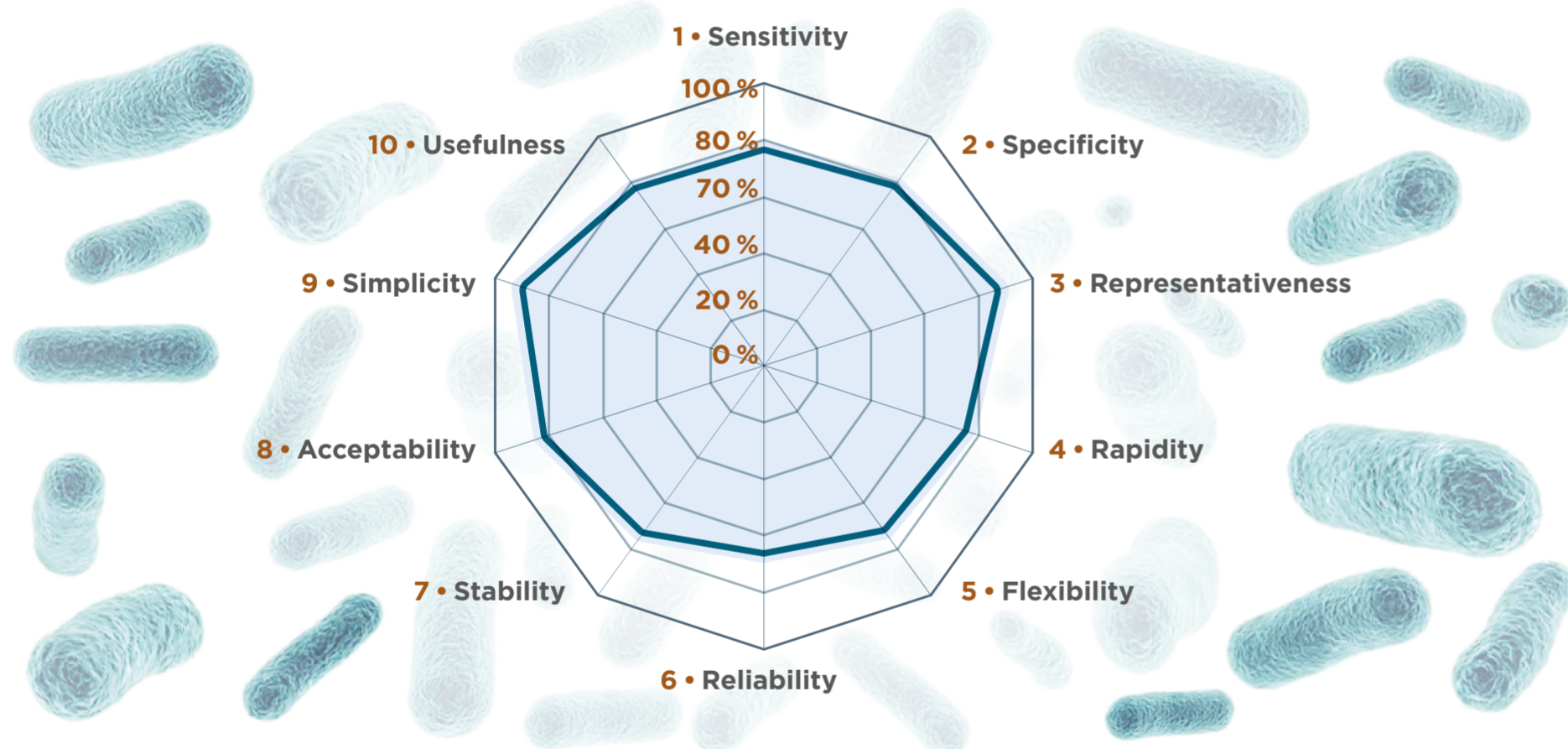
The results of the OASIS method are presented in 3 parts: analysis by functional section, critical point and characteristic of the system.

The analysis according to the ten functional sections of the monitoring systems (monitoring scope, laboratory, data management, communication...) show good overall functioning for the system as each level of satisfaction obtain exceeds 50%.

The analysis by critical point completes the preceding analysis and shows progress items. The three main items to be reinforced are the processing and interpretation of the data, system coordination and diffusion of information.

Lastly, the analysis by characteristics enables the overall quality to be assessed. All criteria obtain a level of close to 80% or higher. The score largely exceeded 80% for representativeness, simplicity and acceptability of the system. The verification of the correct completion of the protocol stages and the validation of the data entries would significantly increase the "reliability" score.

Results obtained by characteristics of the monitoring system



Thus, this first assessment has confirmed the quality of the salmonella monitoring system steered by OQUALIM. An article providing more detail on this change will be available during 2021 in the *Bulletin Epidémiologique* edited by the Anses.

More generally, OQUALIM undertakes actions to capitalise on its highlighted strengths and works on improvements identified via this OASIS Flash method. This reflection is applied to the entire monitoring system, which integrates contaminants other than salmonella, such as undesirable substances. A reflection with the "Plan" Steering Committees has already begun on improvement options with the aim of qualifying, prioritising and acting on them.

OQUALIM also continues its involvement in the Food Chain Surveillance Platform:



The association takes part in collective work carried out with different stakeholders and players in the salmonella monitoring chain, to contribute to a national optimisation of the epidemiological surveillance systems for this pathogen. OQUALIM is also involved in the "Chemical Hazards" monitoring group, the "Cadmium" working group and the "Data Quality" inter-platform working group.

Who are we ?

OQUALIM is an association whose aim is to provide solutions to help meet health safety and animal feed quality challenges. The association coordinates the collective approach by the French animal nutrition sector in terms of quality and health safety of animal feed. It has two main objectives: health safety and compliance with both public and private specifications. To achieve these objectives, it has constructed two tools: pooled self-monitoring plans and the certification of animal feed plants with the RCNA (Animal Nutrition Certification Reference).



Newsletter

on Monitoring Plans

april 2021

2021 Edition



ARE SELF-MONITORING PLANS RELEVANT? PROOF BY POOLING

The animal feed sector is an integral part of the food chain, and management of health safety is a major issue for sector companies. It is far from evident to meet the obligation of constructing a relevant self-monitoring plan when you operate alone.

To construct a self-monitoring plan according to the risk analysis of its activity, the animal feed manufacturer can build on the tools provided by the profession such as the Guide of Good Practice and pooled plans.

The analytical pressure and the number of samples to analyse result from taking these principles into account and depend on the occurrence and confidence interval selected.

The plans defined by pooling and the parameters selected enable the participants to assess the relevance of their own plans. Pooling enables monitoring to be consolidated.

These elements ensure the attractiveness of pooled plans and their success has increased their relevance. The construction of a pooled plan fed by self-monitoring by participants enables each operator to be vigilant, and direct their checks and risk analysis according to the information received.

In order to consolidate the monitoring in place, participants have the option of feeding the collective plan by entering the results obtained in their own self-monitoring plans into the "off-plan" pooling.

As Ludovic Michel said in the editorial to the 2019 report, **"OQUALIM's aim is to be the benchmark in terms of hygiene and feed safety management for all animal feed."**

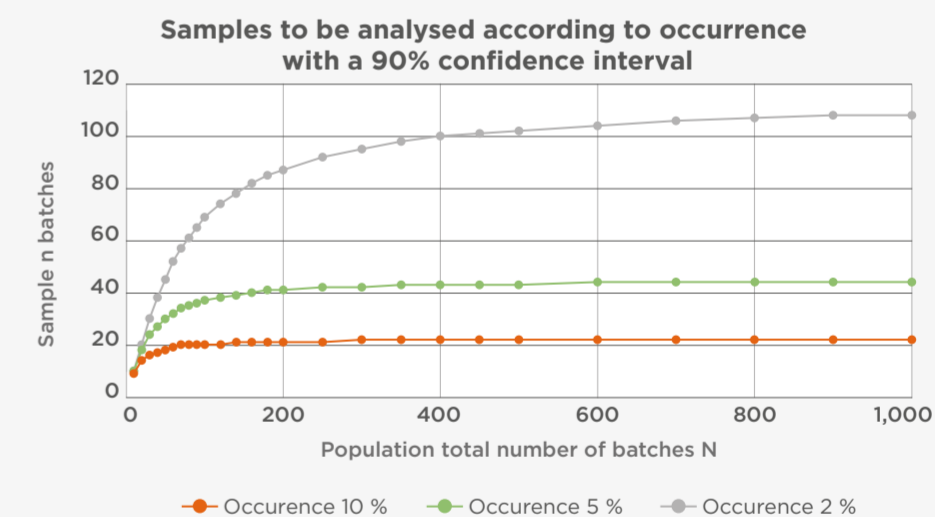
Pooled plan solutions must be accessible for the benefit of all, manufacturers of compound and supplementary feed, as dedicated tools or exploitable solutions. Discussions to implement new pooled plans meeting the expectations of all are continuing.

Principle no. 1

Sampling enables a population to be surveyed. If representative, this survey gives an idea of the contamination of a population by only analysing part of the total batches.

The laws of probabilities enable us to define a number of batches to be analysed in order to obtain the defined percentage chance of detecting what we are looking for. Statistically, even if the number of batches in the total population increases, the number of samples to be analysed per batch in order to detect non-compliance is stable.

When several companies come together, for a same statistical performance, the number of batches to be analysed for the overall population is lower than the sum of the number of batches to be analysed for individual populations.



According to a 1982 Australian study by Mr Cannon and Mr Roe "Livestock disease surveys"

Principle no. 2

To define the analytical pressure, we need to build on a risk analysis. Several parameters need to be defined: [contaminant X product] couples and risk definition for each couple.

	Undesirable substance A	Undesirable substance B	Bacteria X
Matrix 1	Low risk		Data to be acquired
Matrix 2	High risk	Moderate risk	

As part of the pooling of results of the self-monitoring plans proposed by OQUALIM, the definition of couples and risk analysis are carried out by a multi-disciplinary team of animal feed professionals building on the known level of contamination, the frequency of appearance of this contamination, regulatory aspects, the origin of the feed materials, their impact in the formulation, the consequences on animals and humans...



ETHYLENE OXIDE: BETTER UNDERSTANDING OF A NEW RISK

In September 2020, a health alert was triggered following the detection of a level of ethylene oxide exceeding over 100 times the maximum residue limit (MRL), set at 0.05 mg/kg by the regulations, on sesame seeds for human food imported from India. After pursuing their investigations, the Authorities noted that numerous products, from different origins, could be concerned. Whilst there is not an exhaustive list of at-risk products, vigilance is recommended for the following products: psyllium, aromatic herbs, rice and oleaginous seeds and their cake (soy, flax seed...) from South-East Asia and Africa.

Ethylene oxide is a pesticide which is prohibited for use in the European Union due to its carcinogenic, mutagenic and reprotoxic nature. Because of this, all batches of raw materials that have a level of

ethylene oxide over the quantification limit are considered to be non-compliant, including if they are exclusively destined for animal feed. The Maximum Regulatory Limit (MRL) by default, corresponding to the limit of quantification (LQ), applies for ethylene oxide, but the value is adapted to each foodstuff in order to take into account the analytical constraints related to the matrix composition.

In this context, OQUALIM invited its participants to include this newly identified risk in their HACCP, depending on the origin of their procurement, and decided to reinforce its feed and supplement monitoring plans from 2021 to better understand and monitor it. A summary of the results obtained will be presented during the annual 2022 OQUALIM feedback day.



THE MONITORING OF THE LEVEL OF FLUORINE IN MINERAL FEED MATERIALS – A MATTER OF CONCERN FOR MINERAL FEED MANUFACTURERS

Some mineral feed materials can have very high levels of fluorine, such as phosphates and calcareous marine algae. The European Commission has notably found that the basic levels of fluorine in calcareous marine algae may exceed the regulatory threshold ⁽¹⁾.

As part of the OQUALIM Supplement Plan, this phenomenon has also been observed as in 2019 and 2020, the highest levels exceeded the regulatory threshold and were subject to alert management. Moreover, over the last four years, an overall increase in the level of fluorine in calcareous marine algae of over 120% has been observed, going from 438 in 2017 to 970 mg/kg of feed at 12% humidity in 2020.

For phosphates, a certain stability has been observed, with an average level of fluorine of 1,066 mg/kg between 2017 and 2020 (235 analyses).

The Directive 2002/32/EC defines the maximum regulatory levels in these feed materials. These levels take into account the natural richness of these products. It is notably for this reason that the regulatory thresholds were reassessed for calcareous marine algae in 2019 ⁽¹⁾.

The levels of fluorine in these feed materials have implications for the formulation of feed, notably mineral supplementary feed which provides essential elements (phosphorus, calcium, magnesium...) to animals. Thresholds are also set for supplementary feed by the regulations:

- 500 mg/kg for feed containing less than 4% phosphorus
- And 125 mg/kg per % of phosphorus for feed containing more than 4% phosphorus.

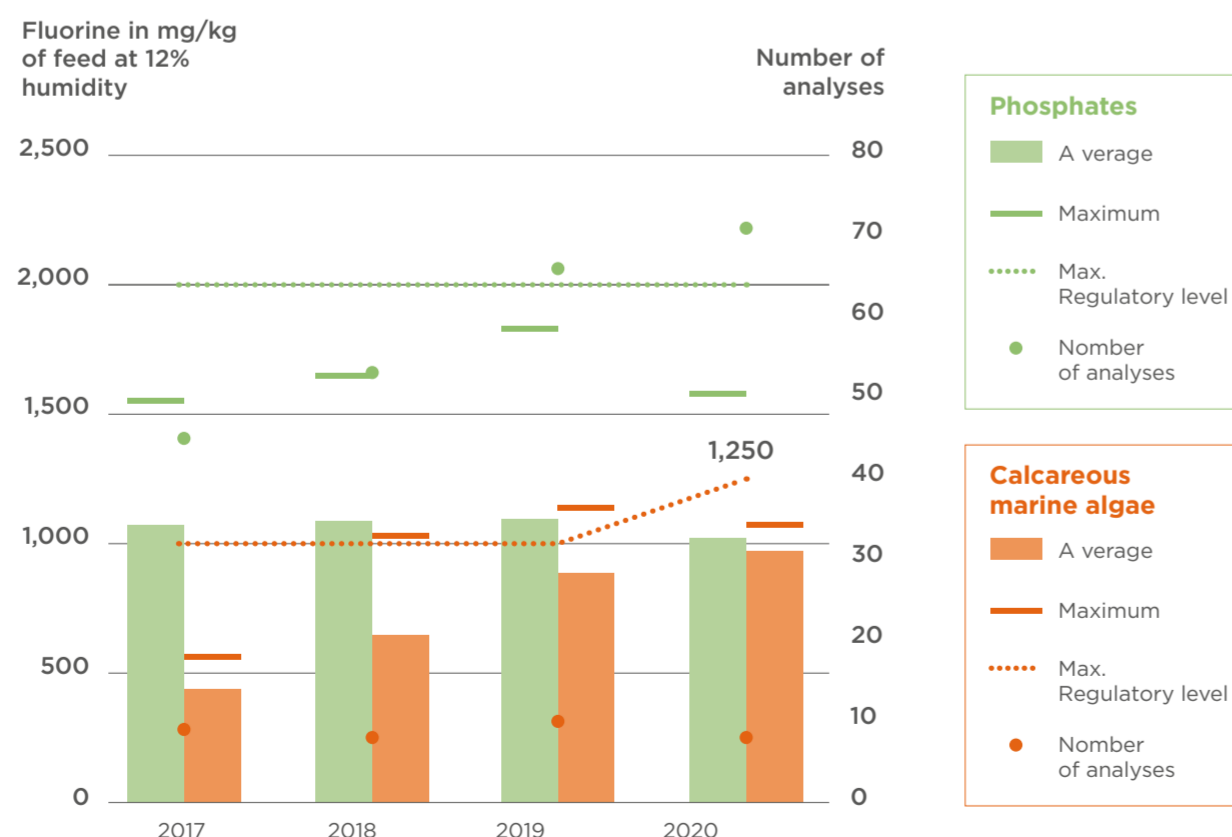
These thresholds, and their recent change, enable the provision on the market of feed materials that comply with the regulations, but require the know-how of manufacturers in terms of feed formulations to ensure compliance. This is the case, in particular, with mineral feed that contains both phosphates and lithothamne as sources of phosphorus and calcium along with other feed materials that also contain fluorine (clays...).

Thanks to the data from the OQUALIM Supplement Plan, some formulae have been identified as being more likely to have a level of fluorine close to the regulatory threshold, i.e. formulae containing levels of phosphorus close to 5% (containing around 25% of phosphates) and rich in lithothamne.

The OQUALIM Supplement Plan provides its participants with detailed, representative summaries of the usual levels of products on the market. The participants use these results as part of their risk analysis. This notably enables the mineral feed manufacturers that are most concerned by this issue to optimise the formulation of the feed and ensure compliance with regulations by setting - where necessary - internal limits guaranteed by the manufacturers.

Plan data enables the change in undesirable substances to be monitored in the inputs used, and also vigilance on the consequences of regulatory changes.

Change in levels of fluorine in phosphates and calcareous marine algae OQUALIM Supplement Plan 2017-2020



⁽¹⁾ Regulation (EU) 2019/1869



CHANGE IN THE ANALYSIS OF PESTICIDE RESIDUES IN FEED SELF-MONITORING PLANS

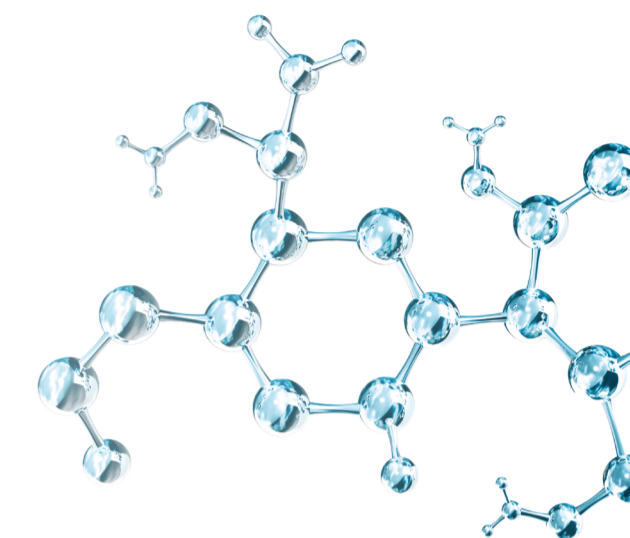
Since January 2019, the analyses of pesticide residues as part of the pooled feed plans include an overall analytical strategy to search for 200 or 500 molecules depending on the related monitoring plan. A positive list of 99 molecules validated by the plan working groups and mandatory as part of the pooled self-monitoring plans, was established on the basis of current regulations, the plan history, OQUALIM monitoring and laboratory feedback.

To retain an inter-laboratory diversity promoting the identification of emerging risks, the feed plan steering committee decided to allow laboratories to add their specific lists to the positive list.

This diversity is present and visible as 908 results lines are parametered on the quality portal (molecules, limits of quantification, MRL) based on molecules sought by the laboratories. In 2020, residues of a fungicide authorised on crops - a molecule not imposed in the positive list - were quantified, including once beyond the regulatory thresholds.

Two years after the implementation of these requirements, the steering committee could use the summaries to decide on possible evolutions. The laboratories may encounter difficulties in effectively applying the positive list imposed, whereas other non-imposed molecules are systematically sought by all on all matrices.

The hierarchy of molecules to be sought can evolve. It will endeavour to remain in line with the selected approaches at the level of the monitoring plans for oleaginous seeds and cereals and molecules of interest identified by the breeding sectors.



“OFF-PLAN” POOLING: AN OQUALIM INITIATIVE BEYOND PLANS

The first “off-plan” pooling campaign was completed at the end of 2020. This initiative was set up in response to requests from feed manufacturers, after noting the existence of results and analyses carried out outside of OQUALIM’s pooled plans, and the feeling that there was an opportunity for exploiting this data, up to now “dormant” for the profession.

Objectives and benefits

The pooling of data outside of the plan is a solution for voluntary participants looking to exploit data on feed materials, compound feed, the environment, for the benefit of reinforced monitoring of feed safety or quality of animal feed.

The voluntary contributing companies can access the overall, anonymous results for all [contaminant X product] couples at the end of each participation period. Additional results can reinforce participants’ individual risk analysis and contribute to modifying the collective approach.



Scope of participation and application of the pooling of data outside of the plan

With its experience in monitoring, feedback of pooled results and the first 2019-2020 campaign, OQUALIM proposes to all companies involved in animal nutrition to contribute to the health management of a sector by reporting the analytical data in its possession via the “off-plan” pooling of data.

On a voluntary basis, companies taking part in one of the pooled plans or all other OQUALIM partners may send their analysis results. The “off-plan” data pooling system includes all types of feed materials and feed for breeding animals.

Report on the 2019-2020 campaign and outlook

The 2019-2020 off-plan pooling campaign, which took place over an 18 month period, highlighted a significant number of “off-plan” data which up to now had not been exploited. 2,544 results of analyses were sent as part of the “off-plan” pooling (1,617 analyses on feed materials and 923 analyses on finished products).

The off-plan pooled analyses concerned contaminants such as:

- Antibiotics
- Bacteria (salmonella), yeasts, moulds
- Heavy metals, Fluorine
- Pesticides
- Persistent organic pollutants (PCB, dioxins...)
- Nitrites
- GMO
- Natural Occuring Prohibited Substances for horses in competition

These data, up to now not exploited collectively, may enable the results of pooled plans to be consolidated. The “off-plan” pooling may highlight low signals. It enables the collection of additional results to plans if a situation requiring specific monitoring is highlighted, such as ethylene oxide, for example (see Article: Ethylene Oxide: Better Understanding a New Risk).

“Off-plan” pooling may provide an overview of molecules that are not yet regulated, but are being considered as part of regulatory changes, such as modified forms of mycotoxins, for example (See 2020 Newsletter, Article: New Recommendations for the DON in Animal Feed). In the case of specific contexts such as feed for horses participating in competitions or races, this data enables directions when building dedicated plans, such as an STNE Plan currently being studied.

Companies taking part in one of the pooled plans or all other OQUALIM partners may register for the off-plan pooling of results obtained during 2021. For more information on “off-plan” pooling, see the website www.oqualim.com.

