



# SOUTHERN AFRICA CAT COUNCIL

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## SACC eNews

Issue No: 9  
December 2008

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Mon-Thu: 9am - 4pm  
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### *SACC's Management Team:*

*President: Jan van Rooyen  
Vice President: Kaai du Plessis  
Treasurer: Rudi Smith  
Secretary: Clare Coutinho*

### *The Governing Council Delegates:*

*Pauline Nel (ABCC)  
Kim Cutter (BIG)  
Elizabeth van Renen (CFC)  
Rita Wiseman (EPCC)  
Jane Vermeulen (NC/FS)  
Sheila Hansen (PCS)  
Karen Pepler (RCC)  
Beryl Webber (TCS)  
Jane Slabbert (WPCC)*

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## Message from the SACC President, Jan van Rooyen

Dear SACC Members

This year has come and gone and you are all hopefully all planning a quiet and peaceful time over the holiday period. My first year as the President of SACC is over and for that I have only one word: CHALLENGING. I can only thank the SACC management and delegates for the support during the year. Our approach during the year was to go back to basics and address issues as effective as possible and as soon as possible. Certain pressing issues were successfully addressed in the past year. The Governing Council just had its AGM, which was followed up by another business meeting and feedback will be given in this newsletter on the action items out of these meetings. I wrote in the previous newsletter that SACC had to address the matter to deal with complaints in the absence of the Ethics Committee. Again no Ethics Committee was formed for 2009, but an alternative system to handle complaints was accepted at the AGM and some complaints have already been dealt with successfully through this system. The new system is discussed further on in this newsletter.

Another pressing issue which was discussed is "out-crossing". There

are so many views by breeders regarding this topic that GC has decided to put this issue in the hands of the breeders via the breed groups. Read in this newsletter how this will be done, but the main fact remain is that you need to belong to a breed group if you want to have a say in any outcrosses allowed for your breed.

The SACC Governing Council had to face a lot of criticism during the year regarding our management style. This varied from being too lenient and not enough controls, to being autocratic. I want to challenge our members to test our processes to experience the decision power you do have as a member and breeder in SACC. I then want you to take it further and compare it to the other associations in South Africa. I think the outcome will be quite interesting. You will see that the decentralized system in SACC where the clubs have the decision power, are far more democratic than where the decision in an association lies with a management committee only, or with one individual with no management committee in another.

I want to repeat and ask you the members to get involved in your local clubs if you want to be involved in the running of SACC. That is the only way to ensure that issues are getting addressed.

The show list for next year has been finalized. For those of you that celebrate Christmas, have a peaceful and merry festive season. For the rest, just have a quiet and safe time. Look after your cats while they are doing their thing in this breeding season. See you at the shows in 2009.

*Jan van Rooyen*  
President of SACC

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## From the Registrar's Desk

Thank you to all our SACC Breeders and Members for their loyal support during 2008. It is much appreciated.

It's that time of the year again, when membership fees and subscriptions are due. This is a reminder to please forward your **2009 CATTERY RENEWAL FEE of R60** to the SACR Office (**Payable before 31 March**). **Take note that a re-activation fee is payable for renewals received after 31 March.** Thank you to those breeders that have paid already. Also take note that if you register a litter before 31 March 2009, you need to pay your breeder fee with that litter. The SACC fees structure has been revised for 2009 and takes effect on 01 January 2009. Please see a copy of the SACR fee structure for 2009.

### Revisions to Fees Structure:

- Pedigrees e-mailed to the SACR for printing and processing will be in addition to the normal registration fee. Pedigrees in colour will be R20 per kitten and those in black-and-white will be R10 per kitten.
- **Registration per cat or kitten over 15 weeks of age : R50.00/ Cat or Kitten**
- **Change of Title certificates to be issued by the SACR on request only. The new application form (SACR F4b) needs to be completed per cat. 2008 Change of Title certificates to be issued free of charge on request. As per the decision at the AGM, in**

*future the fee for these certificates will be decided upon from time to time.*

Direct deposits can be made into the SACR Account:

**S A Cat Register**  
**Nedbank, Ferndale Branch,**  
**Branch code: 192205**  
**Account number: 1922 029 645**

Please enclose a copy of your deposit slip or Internet payment advice with your documentation or fax to: 011-6226301

### *In General:*

- Breeders and Members are reminded that they can apply for a DM (Distinguished Merit) title for their cats. This title is added as a suffix to the name of the cat and based on the show success of the cat's progeny, according to the following point system:

- Champion/Premier 1 point
- Grand Champion/Premier 2 points
- Supreme Champion/Premier 3 points

Progeny of status to the total value of 30 points to earn a male the DM title.

Progeny of status to the total value of 10 points to earn a female the DM title. Only the highest title obtained by a particular cat will count towards DM status for its parents (i.e. a Supreme Champion earns its parents 3 points, not 1+2+3 points).

- **Breeders are requested to please use the new Breed and Colour Codes when**

**registering Kittens.** The SACC official Standard of Points (incorporating the new Breed and colour codes) is available from the S.A. Cat Register.

- In addition to the long-standing titles of Champion/Premier, Grand Champion/Premier and Supreme Champion/Premier, the SACC Cat of the Year Rules and Show Rules also make provision for four other titles: National Winner (NW), National Qualifier (NQ), Regional Winner (RW) and Regional Qualifier. These titles are added behind the cat's name.

The Entire Adult as well as Neuter winners at the annual Cat of the Year judge-off gain the title NW. All other entire adult and neuter finalists gain the title NQ.

The RW and RQ titles are allocated in the two present regional competitions, Cape Top Cat and the Gauteng Invitational. The entire adult and neuter finalists invited to the Cape Top Cat event gain the title RQ, while the entire and neuter winners receive the title RW. At the Gauteng Invitational, those entires and neuters that make it to the *third* round of judging on the day achieve these titles.

*Note that in all cases SACC awards titles to adult cats (whether entire or neuter) only.* Finalists in the COTY Kitten of the Year section as well as the Kitten sections in the regional competitions do not gain titles

- Applications are still repeatedly delayed or returned to members. Please take note that each Application form lay down the rules and requirements for the service required.

*Reasons for applications being delayed or returned to members:*

#### **Kitten registrations:**

- *No pedigree forms for kittens attached*
- *No application for Registration form (SACR F3) attached*
- *No mating certificate from stud owner submitted.*
- *Breed numbers and breed descriptions do not correlate (The standard of points is available at R10 per issue from the SACR*
- *Pedigrees and application forms not signed.*
- *Fees incorrect or omitted*
- *Annual Cattery name renewal (Breeder fee) - outstanding.*

#### **Stud registrations:**

*Application to register a stud (SACR F1) - not completed and stamped by a Veterinarian*

#### **Registration of an imported cat:**

- *Application to register an imported cat (SACR F3b) - omitted*
- *Pedigree forms and transfers (into the new owner's name) from the governing body of the country of origin - omitted.*

#### **Registration of a cat registered with another SA Association:**

- *Application form (SACR F3c) - omitted*
- *Pedigree form and transfer (into the new owners name) from the governing body - omitted*

#### **Transfer forms:**

- *Previous owner / breeder to sign*
- *New owners detail incomplete or not signed*

*(The new owners SACC Cattery name can be added as a suffix to the cat's name at a cost of R25 in addition to the transfer fee)*

#### **Titbits...**

*We welcome the following new Catteries to the growing SACC Breeders list:*

*Kriss Cross (J. Rhodes)*

*Highlanders (C. Middleton)*

*Mowgli (A. Arbie)*

*Bakari (M. Meching)*

*Topp-Class (T. Maree)*

*Fantastique (P. Kruger & R. De Mendonca)*

*Mapantsula (D. Jansen)*

*L'Unique (G van Eeden)*

Please note the office hours of the SACR: (visits by appointment only)

Monday to Thursday: 09h00 to

13h00, and 14h00 to 16h00

Friday - 09h00 to 13h00 on

Fridays.

The office is situated at: 5 Stanmore Road, Kensington, Johannesburg.

Postal Address: P.O. Box 28732, Kensington 2101

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Email: [sacatreg@iafrica.com](mailto:sacatreg@iafrica.com)

### Revisions to Registration Rules:

#### Import Registrations

Every cat/kitten for breeding purposes must retain the name it was registered within the country of origin and may not be changed in any way except for the addition of the owner's cattery name as a *suffix* and for the abbreviation (IMP) in brackets thereafter.

I wish you all a successful 2009 Show- and Breeding season.

Johan van Rooyen  
S.A. Cat Register

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## Breed Council Secretary's Report

### Breed Groups

In 2008 there was even less activity on the Breed Group front than reported in the previous four years. Please remind the members of Breed Groups in their area to remain active and to continue the main reason for their existence and which is to promote the growth, development and understanding of the breeds they represent. There will be proposals in the General section of the voting ballots next year that are of real interest to all breeds. Breed Group members will have no say if their Breed Groups have faded away.

A rule was accepted in 2007 which implies that a Breed Group that has not paid membership for 2 years will no longer be recognized

as an active SACC member. This means that the members will lose their Breeders Council voting rights through that particular breed Group too. To be re-instated, the Breed Group will have to follow the process of recognition as a Breed Group over completely. (See SACC Constitution for details)

The following Breed Groups were active and held Championship shows under the auspices of their local clubs:

- In the Western Cape: The *Siamese Breeders Group of SA*, the *Oriental and Related Breeds Group* and the *South African Abyssinian and Somali Association*.
- In KwaZulu – Natal: *The Sacred Birman Fanciers Group*.
- In Gauteng: *The Breeders of Rex and Sphynx Group* and the *Maine Coon Interest Group*.
- In the Eastern Province: SACATS held a show.

These dedicated breeders promote their breeds and provide a service to the broader community through their dedication and hard work.

At Governing Council last year the Burmese Interest Group had been promoted to a club via Constitutional changes and their application for membership as a club in SACC. However, the primary aim is still the promotion of Burmese and education of people regarding the Burmese Breed and this Club now functions on two levels; as a Breed Group for Burmese Breeders, and as a Club for all breeds. This is a sign of growth and development from Breed Group level to Club level.

### Championship status

No new breeds have attained this status in the 2008 show season.

- Although the SOP for **British Longhairs** was circulated, none were shown that I am aware of.
- The American **Wirehair** still has to fulfill the requirements for Championship status.
- The **Spotted Russian** has fulfilled all the requirements, but ran out of time as demanded by the rules. We hope to see them achieve CC status next year.

### Allowable outcrosses for the various breeds.

Quite by co-incidence, the matter of allowable outcrosses came up several times this year. It is expensive and risky to import cats from other countries to provide new bloodlines and so add to the health and vitality of existing breeds. Over the last twelve years, newly arrived breeds have listed in their Breed Standards the breeds which may be used as outcrosses for improved health and vitality and to enlarge gene pools. Breeders must liaise with breeders in other parts of the world to identify the allowable outcrosses (if any) for their breeds. It is vital that these allowable outcrosses are listed to guide breeders, judges and registration bodies as to what is allowed or not. Unless the outcross breeds are officially recognized as such by SACC, kittens from unusual combinations will not be registered. It is therefore up the breeders to come up with a list of allowable outcross breeds and have them accepted as such through Breed Council voting.

Some breeders of some of the new breeds that allow domestic cats as outcrosses are not keeping to the rules and are outcrossing to other registered breeds instead of the domestics which are the only outcrosses allowed as per their own Breed Standards. I would like to appeal to their sense of fair play and integrity not to repeat such breedings. A further reminder to breeders and show managers: please note that Munchkins with more than 1/16 of pure breed ancestry may not be shown in championship classes, as per their own breed standard. However, they may be shown in the pet classes.

During the Governing Council meeting, various role players have the opportunity to bring up issues that are troublesome, or cause confusion. This forum, where the club delegates come together with the Registrar, President and Vice President, allows for the discussion and scrutiny of our constitutions and rules. During such discussions rules and constitutional points are debated and clarified. A few such debates clarified the following existing rules:

- Kittens registered out of parents who are not of the same breed and not as per the allowable outcrosses listed in their Breed Standards may not be registered.
- The Breed Council Secretary has been instructed by Governing Council to once again send out a request to the breeders of breeds who still require occasional outcrossing to submit a proposal listing those breeds with their Breed Standards. Without an official listing, kittens will not be registered. The letter will be

sent out shortly to the Breed Groups.

### **Proposals for 2009**

*Any breeder may make proposals to have their breed standard amended. If you do not know how to go about it, contact me or the SA Cat Registrar. Either of us will put you in contact with people from a supporting breed group or explain the process.*

*Ingrid de Wet*  
Breed Council Secretary

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## **Complaints Procedure**

Due to the fact that the Ethics Committee no longer exists, it became apparent that a body needed to be formed to handle complaints. It was decided that the delegates of Governing Council assist in handling complaints in their respective areas. BIGCC was asked to formulate a procedure by which complaints could be dealt with, this was unanimously accepted at the October Annual General Meeting of Governing Council and hopefully with a bit of refinement will be written into our constitution next year.

The procedure is as follows:

### **COMPLAINTS PROCESS:**

1. Complaint (in writing) sent to the SACR office
2. Complaint to be circulated to all delegates to consider and supplementary information in writing from the complainant to be requested if required

3. Secretary to send copy of complaint to breeder and request a written answer within 10 calendar days from date of letter/fax/email and advise the breeder of consequences of non-compliance (e.g. suspension or deregistration and no entry to shows)

4. Receive breeder's written response within the required time period, failing which send a written notice to the breeder again requesting a written response (within a further 10 calendar days from date of the notice) to the complaint, failing which the breeder's registration will be suspended / cancelled (and if the latter applies, the breeder must be notified in writing)

5. Where the breeder does respond timeously to the complaint, Club delegates in the area of the breeder will visit and investigate the breeder's facilities (if relevant) after receipt of the breeder's written response to the complaint

6. Club delegates are to report back to the GC (minutes of report back to be kept)

7. Advice and direction will be given to the breeder by the Club delegates and the steps required to rectify the situation will be documented by the GC. The breeder will be given a fixed period (depending on the nature of the complaint and remedial action required) within which to rectify the situation. This will be confirmed in writing by the GC to the breeder

8. After the lapse of the time period in 7 above, club delegates will visit the breeder's facilities again to ensure that the required remedial action has been taken

9. Club delegates will report back to the GC (minutes of report back to be kept)

10. A written response will be given to the breeder by the GC advising her/him whether the breeder has rectified the situation to the GC's satisfaction and thus remains a registered breeder or whether the breeder has failed to comply with the rectification requirements and registration has been suspended / cancelled

11. Where the breeder's registration has been suspended, the breeder will be given a further opportunity to rectify the situation and points 7 to 10 will apply

12. Where the breeder again fails to rectify the situation to the GC's satisfaction, or where further complaints are received, the breeder could be de-registered (i.e. cattery registration cancelled) and refused entry to shows, as decided by the GC. The GC must advise the breeder in writing of any of the latter sanctions. It is in the GC's discretion as to when (or whether) the breeder may be re-registered and allowed entry to shows.

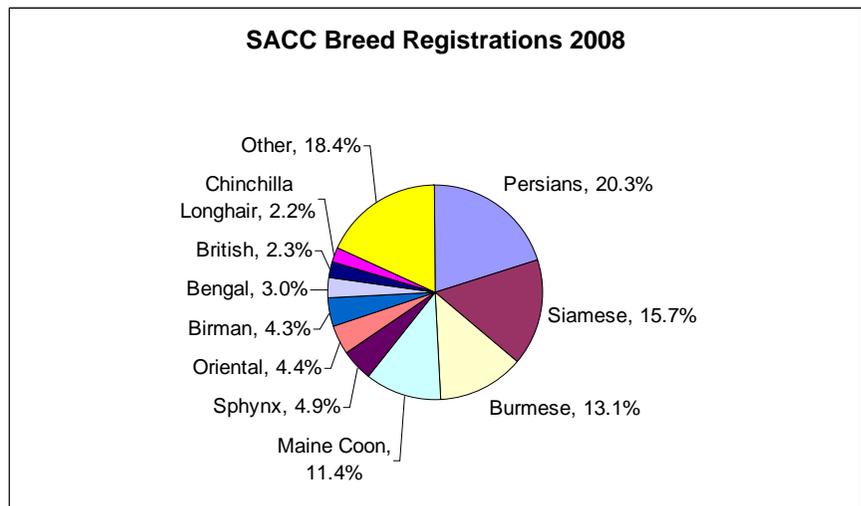
13. All relevant correspondence between the two parties may be disclosed on the request of either party.

*It must be stressed that the delegates will always try their best to help educate and guide people where ever possible, only when this fails will disciplinary action be instituted.*

*Kim Cutter*

## SACC Registrations in 2008

Have you ever wondered what the most popular breeds are in SACC as far as registrations are concerned? Here a chart showing the registration between July 2007 and June 2008:



Persians remains the most popular breed, followed by Siamese, Burmese, Maine Coon and Sphynx. The Birman was topped by the Sphynx in the 5<sup>th</sup> spot in 2008. But it is important to acknowledge that 28 different breeds have been registered over this period and the "Other-section on the chart represents the following breeds: Norwegian Forest Cat, Russian, Abyssinian, Tonkinese, Cornish Rex, Exotic, Somali, Devon Rex, American Curl, Ragdoll, Balinese, La Perm, Scottish Fold, Siberian, Munchkin, Singapura, Peterbald and American Wirehair. The Top 5 breeds being registered, represents 65% of all registrations.

## Annual General Meeting of SACC

The Annual General Meeting was held in October and the following changes were made:

### To the Constitution:

#### **Added to Item 6**

Clubs and/or Breed Groups who have not paid their yearly affiliation fees will not receive the SACC Agenda and voting ballots for the AGM.

#### **Added to 9.2.4**

Supply annually a list of its officers, with their full contact details.

#### **Change to item 12**

The name and contact details of the Secretary and delegate of each Club or the secretary of the Breed Group member shall be recorded by the Registrar's Office and shall be the point of all official communication between the

Registrar's Office or SACC and each member.

#### **Removal of Item 15.2**

##### **Add item 18.1.2**

Members may only vote in favour or against a proposal.

##### **Change to item 19.2.7**

The opening and counting of ballots shall be done by Delegates of the member clubs present at the AGM. A Delegate that is a candidate for election may not be involved in the opening or counting of the ballots.

##### **Adding of Item 19.2.6 and renumbering of Item 19**

Club members may only vote in favour or against a candidate.

#### **Removal of item 24.2 to 24.12.2**

##### **Changes to Item 25.2.1**

The Breed Council ballots tabled by the Delegates for the various Judges Panels shall be audited by the President and Vice President of SACC.

##### **Changes to Item 27.6**

Authorize the Treasurer to open an account at a registered Commercial Bank on behalf of SACC. Cheques drawn shall be signed by the President and Secretary of SACC.

##### **Adding of Item 28.9**

In the event that there is no functioning Ethics Committee, SACC, through its Delegates, will perform those duties.

##### **Adding of Item 15.4.2**

In the case of a Delegate's not being able to attend the AGM on the day owing to an emergency (accident, illness etc) the Delegate may appoint a person not necessarily of the delegates

committee to take the Delegate's votes to the meeting.

##### **Changes to 17.1**

The draft minutes shall be circulated by the Secretary of SACC by certified post, registered post, courier, fax or e-mail to the official address of member club/s and Breed Groups as soon as possible after a meeting but not later than 14 days for confirmation of the correctness thereof by the member club/s, which shall be effected within 28 days of their receipt.

##### **Add Item 18.1.3**

Propose that voting on constitutional matters shall be decided by a two-thirds majority of members' Delegates present.

#### **Changes to Registration Rules:**

##### **Section A**

###### **Change Item 3**

Kittens must be registered by the breeder by the time they are fifteen weeks of age. Late registrations will be subject to a surcharge.

##### **Section B**

###### **Change Item 4**

Every cat/kitten for breeding purposes must retain the name it was registered in the country of origin and may not be changed in any way except for the addition of the owner's cattery name as a suffix and for the abbreviation (IMP) in brackets thereafter.

##### **Section D**

###### **Add Item 21.1.6**

All breeds that require outcrosses to other breeds for development purposes or to ensure genetic diversity, must have a list of allowable outcross breeds added to their breed's Standard of Points by 30 July 2009. No kittens from outcross matings will be registered

after this date unless the outcross parent is listed as an Allowable outcross.

#### **Changes to Show Rules**

##### **Changes to Item 12e**

A Champion Certificate shall be supplied by the Registrar on receipt of completed application form requesting the Certificate from the owner. Application forms will be available on the web-site and at Shows. Cost to be decided on by GC from time to time and listed on the SACC registrations price list.

##### **Changes to Item 14e**

Grand Champion and Grand Premier Certificates shall be supplied by the Registrar on receipt of completed application form requesting the Certificate from the owner. Application forms will be available on the web-site and at Shows. Cost to be decided on by GC from time to time and listed on the SACC registrations price list.

##### **Changes to Item 15c**

A Supreme Champion and Supreme Premier Certificate shall be supplied by the Registrar on receipt of completed application form requesting the Certificate from the owner. Application forms will be available on the web-site and at Shows. Cost to be decided on by GC from time to time and listed on the SACC registrations price list.

#### **Changes to the Breed Council Rules**

##### **Add to item 2.5**

The voting schedule shall offer the options of a vote either in favour or against a proposal.

## Changes to the Steward's Forum Rules

### Removal of Item 14.1

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## Dealing with mistakes in the Standard of Points

### Spelling Errors

When a spelling error is picked up, please email Ingrid de Wet at [incats@global.co.za](mailto:incats@global.co.za) and these will be corrected immediately.

### Strange wording / phrases or Contradictions

Email these to Ingrid de Wet at [incats@global.co.za](mailto:incats@global.co.za) with a suggested correction.

These will be forwarded to the Judges Panels for input. Once the Judges Panels have agreed on the correction this will then be circulated to the appropriate Breed Groups.

Once verification has been received from the Breed Groups these will be put on to the Breed Council Ballot for the next AGM.

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## The Durban Pet Expo

The Persian Cat Society (PCS) was honoured to represent the Southern Africa Cat Council (SACC) at the Durban Pet Expo that was held at Gateway Theatre of Shopping on the 14th to 16th of November 2008.

The main aim of the SACC stand was to promote SACC and the



numerous breeds that SACC recognizes in order to garner public interest in the various breeds and in cat shows themselves. With our "Cuddle-A-Cat" stand, catnip plants and cat toys on sale, the weekend proved to be a lot of fun and a definite success. PCS members fielded questions from the public ranging from feline-related problems, to cat breeds and cat shows, so well done to that clued-up bunch!



Many thanks must go out to some very special members of PCS: Christelle Horne, Enid Ashley, Kathy Hoole and their stunning cats for giving of their time and effort to be involved in raising funds and creating awareness. Thank you for participating in grooming demos for the public as well. To all our other members who contributed via donation or sponsorship, no matter how big or small, THANK YOU. A special mention must go to Billy, owned by Alison Renwick who raised the most funds in our Cuddle-A-Cat fundraiser. Billy, a cream burmese who's mother is none other than Matty, SACC's Cat of the Year

2008, refused to go in a cage and lay on the table in his doughnut with his harness on waiting patiently for all the cuddles to come his way. And we must not forget to mention our mascot, Percy, for proving that dogs fit in very well with all sorts of cat breeds no matter how humiliating the price.



Thanks must also go to the dedicated members of the PCS committee and of course, to Ngaio Crawley, for really making a concerted effort to contribute where ever possible at very short notice to make this event a success for both PCS and for SACC.

*Nicole Barratt*

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## Current Trends in the Diagnosis of Feline Diseases

It is now possible to rapidly and accurately identify disease causing organisms within a few minutes with no sophisticated equipment. The former technologies could be broadly described as rapid tests and are essentially based on the proteins of the organism and the latter, broadly categorized as nucleic acid tests are based on the unique genetic code (nucleotide or DNA sequence) of the organism.

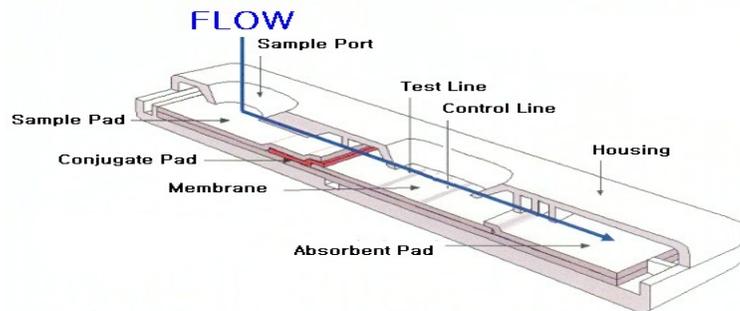
The objective of this presentation is to outline some of the tests that are locally available and being offered by Molecular Diagnostic Services (Pty) Ltd (MDS) In the veterinary field we have optimized over 120 tests that detect disease causing organisms, a number of which are specifically for cats. We have focused on two areas of diagnostics namely rapid diagnostic tests, such as the well known pregnancy test, and the group of tests that are referred to as the molecular tests.

**Rapid tests:**

Rapid tests are simple to use “bed side” or “point-of-care” tests that are designed to either detect the disease causing organism (I will use the term **pathogen** to include all organisms that cause disease eg viruses, bacteria, fungi etc) or pathogen specific antibodies. Antibodies are a specific group of defense proteins that the host, for example a cat, would make against an invading pathogen. I like to use HIV as an example to explain the various tests only because we all seem to be familiar with this virus but also because it is the human equivalent of Feline Immunodeficiency Virus (FIV) which is a common cat pathogen. Before an HIV infection the body should not have any HIV specific antibodies to the virus. (There are situations such as babies born to HIV positive mothers that will have HIV antibodies but not all will be infected- the same applies to kittens of FIV positive mothers). At the stage before infection a test for HIV antibodies would be negative. However, following HIV infection the body would start to produce detectable HIV specific antibodies (the period between HIV infection and the presence of detectable antibodies is referred to as the window period- it also exists

in cats and can be as long as 60 days although I believe it may be considerably shorter). Improvements in antibody diagnostic testing have shortened the window period to 2 to 3 weeks. A positive rapid test would mean that infection has taken place. As mentioned above FIV is a very similar virus to HIV, however FIV

a piece of blotting paper (solid phase) draw a line in ink on one end then dip it into water (liquid phase). As the water moves up the paper (chromatography) it will take some of the ink with it. In the rapid tests you have a special membrane, instead of the blotting paper, that is enclosed in a small plastic cassette (see Fig 1).



does not infect humans as does HIV not infect cats. However clinically and biologically the two viruses are quite similar. Currently rapid FIV antibody tests are available that require a small drop of cat blood. A positive FIV antibody test result would imply that the cat is positive for FIV. However, there are also similar problems that one should be aware of. In the case of HIV all babies born to HIV positive mothers will also have maternally derived HIV antibodies so babies less than 12 months would be HIV antibody positive whether they were infected with HIV or not. However these antibodies slowly fade away in those babies that are not infected. A way to overcome this is to test for the virus directly. This can be done by a test that looks for unique HIV proteins rather than HIV antibodies however this test has a few limitations. A better test is to look for viral genetic material using a molecular diagnostic test. . In brief the technology used is liquid/solid phase chromatography. A simple example would be to take

Fig 1  
A sketch of a lateral flow device (rapid test). The sample pad is where the blood or other sample is applied. The conjugate pad contains the gold particles. The test line will show up as an intense band if the sample is positive and remain invisible if negative. The control line should always appear if the test worked optimally.

At the one end there is a pad that contains gold particles that have a purple/red colour. These particles (in the case of a FIV antibody test) would be attached to a number of unique FIV proteins. When a drop of blood is added to the cassette the antibodies in the blood will bind to the FIV proteins which are attached to the gold particles and together they would migrate up the membrane. A few millimeters up the membrane there is a line of antibodies that are directed to unique parts of the FIV protein. As the gold / FIVprotein / antibody complex moves past this line of FIV proteins and interaction will take place and the complex will be

held at this line and fairly soon a visibly intense band will start to appear. If the blood does not contain FIV specific antibodies this line will remain negative. Another line a little further up will also start to appear. This is the control line that should always be present if the test worked optimally. Two other rapid feline tests are available. These are the Feline Leukemia Virus antigen kit and that Panleukopenia Virus antigen kit. FeLV antigen rapid test.

Another important cat disease is Feline Leukemia Virus. This is also a retrovirus as are FIV and HIV. The FeLV rapid test is designed to detect the virus directly. In this case instead of having the viral proteins attached to the gold you will have a specific antibody attached to the gold particles. If you add a drop of blood that contains FeLV the virus will bind to the antibody/gold complex and it will move up the membrane and then be captured by a band that contains FeLV specific antibodies to another FeLV protein and in this way one will visualize an intense band if the drop of blood contains FeLV.

Other rapid tests for cats include: Feline Corona Virus (FeCV) that is also responsible for FIP (feline infectious peritonitis). This test will detect the presence of FeCV in a fecal sample; however you must note that whilst it is believed that FeCV is the cause of feline infectious peritonitis, only a few FeCV positive cats will develop the disease as there is variation in the pathogenicity of the virus. Feline Panleukopenia Virus (FPLV) antigen test. This test will detect the presence of feline distemper (panleukopenia) which is a common viral disease affecting domestic cats and all other felines.

#### **Molecular tests:**

The term molecular is a broad term that implies working at the level of the molecules. In fact the term, in the case of molecular diagnostic services, is really describing the testing of things at the level of their genetic (DNA and RNA) material. All living organisms contain genetic material that is unique. The genetic material is basically a long stretch of nucleotides in a unique order. The sequence of these nucleotides is important. In the case of the alphabet we have 26 letters that are used to make up all the words in a dictionary. In the case of DNA there are 4 letters abbreviated as A, C, T and G that make up the genetic code. Interestingly DNA exists as a double strand. An A will always bind to a T and a C to a G. The importance of their discovery helped to explain how genetic material is conserved and inherited. If one knows the one strand one can determine the other. When a cell divides and DNA needs to be replicated the one half of the DNA become the template for another identical complementary copy so in this way the body is ensured of an exact replica of the original DNA. There are checks to ensure that the transcription (making RNA from DNA) is accurate however errors do occur. In molecular diagnostics we use the uniqueness of the order of the nucleic acid sequence as a means of identification and specific amplification. This was made possible by a revolutionary technique called the polymerase chain reaction (PCR). This technique allows the amplification of minute amounts of nucleic acid millions of times so that one has sufficient amounts of material for identification purposes. It is this amplification step that makes PCR (and therefore molecular testing)

so powerful as it allows the tests to be incredibly sensitive. The uniqueness of the gene sequences is what makes molecular testing so specific.

There are a number of variations of the PCR technique however the basic principle is that if one knows the genetic material of a virus, bacteria, protozoan, fungi etc one can use this technique to amplify unique regions to a level that can be analysed. This is what takes place in the PCR reaction

Some of the more common feline molecular assays are listed below.

*Bartonella henselae* - PCR  
*Chlamydomphila felis* – PCR  
Feline Corona Virus – PCR  
Feline Calicivirus – PCR  
Feline Herpes Virus - PCR  
Feline Leukemia Virus – PCR  
Feline Immunodeficiency Virus – PCR  
Feline Panleukopenia Virus – PCR  
*Toxoplasma gondii* PCR

#### **Bartonella species**

*Bartonella* are gram-negative, *B. clarridgeiae* and *B. henselae* cause chronic bacteraemia, with or without symptoms, in cats.

#### **Chlamydomphila psittaci (including C. abortus and C. felis)**

Chlamydiae are a group of obligate intracellular parasites. The disease becomes a systemic illness, often with respiratory complications. Conjunctivitis is also common. Asymptomatic carriers may shed the parasite under stressful conditions such as breeding or transport and thus other non-infected individuals may be at risk.

#### **Feline Calicivirus**

Feline Calicivirus is a common viral disease in cats. Infection most frequently results in an upper respiratory tract disease with nasal

and conjunctival discharge. There may be oral ulceration, arthritis or pneumonia. Spread of the disease is by direct contact with infected saliva, eye and nose discharges. Calicivirus is common in kittens, multicat households, and animal shelters. Cats can remain contagious for years with no signs of disease and outbreaks can occur in overcrowded and/or unsanitary conditions or where the cats are under conditions of stress, either physical (eg., extreme temperatures) or psychological (eg., introduction of a new cat). For testing it is best to submit one of the following samples. Whole blood, nasal, conjunctival or pharyngeal swab. Again the benefit of the test is its speed, sensitivity and specificity.

#### **Feline Coronavirus (FeCV)**

Feline coronavirus is a single-stranded RNA virus of the Coronaviridae family, Genus Coronavirus. The same virus causes Feline Infectious Peritonitis (FIP) and/or intestinal inflammation (enteritis) in both kittens and cats. It is a white-cell associated virus, and infects liver, spleen, lymph nodes, eyes and the central nervous system. The primary route of infection is largely unknown, but seems to be through the oral or nasal route. It is shed in faeces. A small percentage of cats with FeCV will progress to FIP. Symptoms of FIP include unexplained loss of appetite, depression and weight loss, along with a chronic unresponsive fluctuating fever. Reproductive failure and early kitten death may occur. If the CNS is affected, the cat suffers from meningoencephalitis, with signs including paralysis of the hind legs, weakness, trembling, vertigo, seizures and personality changes.

The most appropriate sample for testing is faeces and whole blood (both samples to be submitted), peritoneal fluid. MDS has introduced an assay that looks for the RNA that codes for the viral proteins in blood. A positive result with this test is highly indicative of FIP. A fecal swab and one ml of whole blood is required for testing. The benefit of the molecular assay is speed, sensitivity and specificity.

#### **Feline Herpes Virus (FHV)**

Feline herpes virus (FHV) most commonly infects kittens causing sneezing, ocular and nasal discharge, and a reluctance to eat and play. With good nursing care, the vast majority of kittens return to normal within 3 weeks. Vaccinated kittens may still develop disease, but the illness is less severe. Approximately 80% of FHV infected cats become latent carriers with a 45% chance of viral re-activation. Adult cats with eye disease due to FHV are more likely to be suffering from viral re-activation than from a primary FHV infection. FHV causes the disease called feline viral rhinotracheitis (FVR) that is characterized by rhinitis, tracheitis, laryngitis, and conjunctivitis. A suitable sample for the test is whole blood, ocular or nasal discharge. The benefit of the molecular test is speed, sensitivity and specificity.

#### **Feline Immunodeficiency Virus (FIV)**

Feline Immunodeficiency Virus (FIV) is a disease of both domestic and feral cats. It was first isolated in 1986. FIV is a retrovirus and lentivirus and has similar characteristics to the human and simian immunodeficiency viruses (HIV and SIV). Infection with the virus results in an acute flu-like illness followed by clinical latency

and progressive immune dysfunction that allows many opportunistic infections to take hold. A suitable sample to send for test is a whole blood (proviral DNA is tested). This test will not be affected by the FIV vaccine. The benefit of the molecular assay is speed, sensitivity and specificity. We are working on a feline CD4 test that will enable us to determine the number of CD4 cells which is a useful indicator of the immune system. In addition we will soon be offering a FIV viral load which will be useful as a tool to monitor the levels of FIV following treatment. Similar antiretroviral drugs that are used for HIV are also proving to be effective against FIV.

#### **Feline Leukaemia Virus (FeLV)**

Feline Leukaemia Virus is an oncogenic retrovirus infecting cats. Three main outcomes of infection are known, namely: (i) persistent infection which can lead to death within 3-4 years of initial exposure; (ii) transient infection where infected cats are able to clear the viraemia after a few weeks to months and the animal is then considered immune and (iii) cats exposed to the virus develop immunity on first contact. Cats that are persistently viraemic develop immunosuppressive, haematological, intestinal or reproductive disorders, neoplasms such as lymphoma or leukaemia, or autoimmune diseases. A vaccine is available but this seems to prevent tumour development rather than protect against infection. The best sample to submit is a whole blood sample to test for the proviral FeLV genome. The benefit of the molecular test is speed, sensitivity and specificity. A rapid FeLV test is also available to test for FeLV antigen.



Fig 2a A rapid test result showing a dilution series of a positive virus. In the top left hand slide one sees the result of one million viral copies per ml (10000 copies per 10  $\mu$ l). One clearly sees the test band and the control band. At 10 000 copies/ml (100 copies per 10  $\mu$ l) one sees that the test band is not visible.

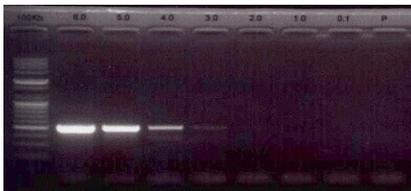


Fig 2b A PCR (molecular) result showing a dilution series of the same samples used in the rapid test. One sees that one can still detect virus at 1000 copies/ml (10 copies per 10  $\mu$ l) The molecular

test is more sensitive than the rapid test. The rapid test can be done on site whereas the molecular test needs to be sent to the laboratory.

**Summary and conclusion:**

If one had to describe the ideal diagnostic assay a description would include some of the following objectives. The test must require a small amount of sample that is easy to collect. Must give a quick result. Must be both sensitive and specific. Must be quick. Must not require any equipment. Must be stable at room temperature. Must be easy to interpret. These objectives have

nearly all been met by the latest rapid tests. There are a few limitations of the rapid tests and these are complimented very well with the molecular tests that are exquisitely sensitive and specific and can provide the ultimate in identification because they work at the level of the genetic material of the organism. Other molecular applications look at the genes of the actual host. These genes determine how an animal looks (phenotype) and the presence of certain genetic mutations may cause hereditary or genetic-based diseases such as polycystic kidney disease. We have only started to reveal the benefit and applications of molecular diagnostics – the future will reveal many more useful applications secrets.

*Dr Denis York*  
 Molecular Diagnostic Services  
 (Pty) Ltd  
[www.mdsafrika.net](http://www.mdsafrika.net)

**Dr Denis York**

Dr Denis York is a specialist molecular biologist. He started his research career at Onderstepoort Veterinary Research in the Department of Molecular Biology in 1982.

His research focussed on the isolation and characterisation of a retrovirus that caused a contagious cancer in the lungs of sheep. In 1991, following a decade of research on this virus, he isolated cloned and sequenced the genome of the Jaagsiekte Sheep Retrovirus, a world first. (in France)

In 1992 he took up a position at the Medical School in Kwa Zulu Natal, this was the start of the HIV epidemic in KZN. Using his

expertise in molecular biology and retrovirology he started the molecular section in the Department of Virology and was deputy head of department.

There he spent a decade continuing his research on retroviruses and assessed and evaluated various ingenious methods for HIV other pathogen diagnostics.

In 1997, in response to a demand for a molecular service in the human and veterinary fields he started a Company namely Molecular Diagnostic Services (Pty) Ltd, that develops its own tests and provides a specialist molecular diagnostic service Nationally and Internationally. It has a branch in Australia and recently in the UK.

The company is registered with the SA Medical Council and follows ISO 17025 guidelines and is SANAS approved.

**Transvaal Cat Society (TCS)**

The Transvaal Cat Society was started back in 1949 and claims to be the “oldest” cat club in South Africa.

As far as our records will allow the Club was started with four members – Rev John Oliver, Mrs J.L. Panell (deceased), Rosemary Hart (deceased) and Mrs Gladys Haswell (deceased). Some of our illustrious life members include the Reverent John Oliver, who now resides in the quiet town of Stilfontein, and June du Buisson, who is still very active as an All Breeds Judge.

The first TCS show was held on a tennis court, with the exhibitors actually sitting with their cats on their laps while the judges did their rounds!

One still fondly recalls the “old” days when we had only one ring per show, three clubs in Gauteng, and it took a “month of Sundays” to Champion your cat – let alone make it up to Supreme Status in one day.

The TCS Ruby Show (40<sup>th</sup> anniversary) show was held at the Millpark Holiday Inn in Auckland Park. We had lion cubs on display – which were a huge draw card – and had people lining up for two hours in the hope of getting a giant cuddle.

TCS considered changing its name when Transvaal Province changed to Gauteng – but somehow the name had become too entrenched – and after much debate, and many weird and wonderful suggestions, the name TCS or Transvaal Cat Society stayed.

Gone too are the days of silver floating trophies ... TCS still, however, rewards the top cats of our shows with wine glasses each year, and we still have several beautiful silver trophies in circulation – mostly of course for the Siamese Breed.

TCS still continues to hold two shows a year – and boast among the highest number of exhibits. The Committee recently staged a successful Cat of the Year Finale at the Randpark Golf Club in July this year – the culmination of many hours of hard work and negotiation.

TCS will be holding two shows in 2009 to celebrate our 60<sup>th</sup> year in

operation – both at the up-market Randpark Golf Club in Randburg – on Saturday 7 March and Saturday 11 July. Enquiries in this respect may be directed to Gail Nel at [wofold@iafrica.com](mailto:wofold@iafrica.com) or Athylle Caw at [athylle@mweb.co.za](mailto:athylle@mweb.co.za).

*Gail Nel*

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## INBREEDING: WHEN IS IT TOO MUCH?<sup>1</sup>

Reading articles on calculating an Inbreeding Coefficient (IC) left me with the question: what constitutes a low/intermediate/high IC? This led to an internet search and an email conversation with US geneticist Lorraine Shelton. The answer to my question? Well, the short answer is that there is no short answer.

### What is inbreeding?

Inbreeding could be defined in several ways, but in essence all of these mean the same:

- Mating or crossing of individuals more closely related than average pairs in the population
- A deliberate mating of closely related individuals in order to increase homozygosity and thus fix desired characteristics
- A breeding technique which pairs closely related animals, such as father-daughter, brother-sister, or cousins. Inbreeding favors genes of excellence as well as deleterious genes

- Any mating system that increases the probability (above the expectations of an infinitely large, randomly mating population) that the two alleles of a gene in an organism will be inherited from the same copy of the gene in an ancestor
- Breeding between members of a relatively small population, especially one in which most members are related

Linebreeding is just a particular form of inbreeding, but it remains inbreeding nevertheless. Breeders of purebred livestock have introduced the term to cover the milder forms of inbreeding. Uncle-niece, aunt-nephew, half sibling matings, and first cousin matings are called inbreeding by some people and linebreeding by others.

### The effects of inbreeding

The basic genetic consequence of inbreeding is to promote **homozygosity**. This means there is an increase in the frequency of pairing of similar genes. Accompanying this increase, there must be a decrease in the frequency of pairing of dissimilar genes. This is called a decrease in **heterozygosity**. These simultaneous events are the underlying reasons for the general effects on performance we observe with inbreeding.

Inbreeding has a profound effect on the immune system. Dr Heather Lorimer explains: “The immune systems of all animals are absolutely dependent on genetic diversity. There are basically two kinds of immune responses:

1. There are cells called B-cells, that make antibodies which are capable of inactivating or

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<sup>1</sup> Revised version of an article originally published in 2005 by the Siamese Breeders’ Group of SA

- killing foreign particles (such as bacteria or viruses) that enter the body.
2. There are cells called T-cells, which kill dangerous cells such as tumor cells infected with a virus.

These cells are very specific; one cell makes only one kind of antibody or is capable of recognizing and killing only one kind of dangerous cell. The most startling thing about this system is that for every kind of infection or every kind of cancer to which an animal could ever be exposed there is already a cell in the animal's body specific to that infection or cancer. If both chromosomes of a cat or other animal have identical immune system gene segments (e.g. being homozygous as a result of inbreeding), that animal has lost half of its potential antibody genes."

Dr Lorimer continues with this advice: "We as cat breeders must be careful not to "fix" immunodeficiency when we are trying to "fix" type. Fortunately, this is not hard to do. When you want to bring a trait into your cats, such as size or ear set, go to more than one source. Remember, you won't lose type in an outcross unless the cat to which you're outcrossing lacks type. Most importantly, watch for the danger signs of excessive inbreeding. They are:

1. Low fertility in either males (sperm viability) or females (litter size).
2. Small litter size (one or two kittens) on a regular basis.
3. Facial asymmetry, misaligned jaws, crooked noses, irregular eye-set.
4. Regular appearance of cancer in young cats.

5. Loss of a large proportion of cats to one disease. If 50% of a litter of kittens or of a group of adults dies of a simple infection, there is not enough immune system diversity in your line."

Other signs of inbreeding include lower birth weight, stillborn kittens and higher neonatal mortality, lethargic kittens, slower growth rate, and smaller adult size.

Inbreeding depression is defined as a loss of vigor due to the homozygosity of an increasing number of genes. This results in an individual with a smaller variety of different genes in its makeup. As we have already seen, this leads to the immune system becoming less effective. Cats can only produce antibodies with the genes they have, the smaller the number of different genes, the smaller the number of different antibodies produced.

A well-known example of increased proneness to illness, caused by a lack of genetic diversity, has occurred in wild and captive populations of cheetahs. Captive cheetah breeding programs have been plagued by low birth rates and high infant mortality. Cheetahs have also proved to be very susceptible to Feline Infectious Peritonitis (FIP). Most cats become infected with the virus that can cause FIP when they are exposed to it, but usually less than 10% of those cats will go on to develop the usually fatal FIP. However, cheetahs exposed to the virus will experience a 50% mortality rate. Cheetahs are nearly identical genetically - so identical that individual cheetahs, born thousands of miles apart, did not reject skin grafts from each other (a trait which is normally seen only

in identical twins). At some point in history, the cheetah population must have narrowed down to so few individuals that their immunological diversity was lost and, as a result, these cats are in danger of extinction.

### Interpretation of IC

The level of inbreeding in an individual is measured through the Inbreeding Coefficient (IC). IC levels are influenced by the number of common ancestors in a pedigree, as well as where those common ancestors are located in the pedigree (very recent generations versus distant generations). The IC is a single numerical value that considers these factors.

Several pedigree programs (including CompuPed) have a function to calculate IC. Fspeed, a Windows program for rapidly computing the inbreeding of all individuals in a breeding population can be downloaded from <http://www.tenset.co.uk/fspeed/> A free version is available. Annex A gives instructions on calculating IC manually.

In farm animals, inbreeding generally results in an overall reduction in performance. This reduction is manifested in many ways. The most obvious effects of inbreeding are poorer reproductive efficiency including higher mortality rates, lower growth rates and a higher frequency of hereditary abnormalities. This has been shown by numerous studies with cattle, horses, sheep, swine and laboratory animals.

The extent of this decrease in performance, in general, is in proportion to the degree of

inbreeding. The greater the degree of inbreeding, the greater the reduction in performance. The actual performance reduction is not the same in all species or in all traits. Some characteristics (like meat quality) are hardly influenced by inbreeding; others (like reproductive efficiency) are greatly influenced by inbreeding. We cannot, then, make a generalized statement about the amount of reduction in "performance" that would result from a specific amount of inbreeding and expect it to be applicable in a broad variety of situations and across all species. It is possible, however, to predict the extent of the effect of inbreeding on specific traits. Such predictions are based on results actually obtained under experimental conditions in which various levels of inbreeding had been attained. I am not aware of studies to determine the effect of inbreeding on various traits in cats specifically.

Dr Shelton confirmed in her response to my enquiry on how to interpret the calculated IC that "there is no magic number delineating "safe" breedings from "unsafe" ones. Just to give you a touchpoint, however, milk production and other measurable traits in cattle start to decrease after an inbreeding coefficient of only 3% is exceeded. Other species may tolerate inbreeding better or worse than this. The key is to listen to Mother Nature. If you are having litter sizes under 6 kittens, chances are you are seeing signs of inbreeding depression. Other common signs are low individual weight of kittens, fertility problems, lack of vigor, and immune system problems."

The long and the short therefore: we do not have a chart from which

to read IC versus change in performance in selected characteristics. But we do know what the danger signals of inbreeding are, and it is our responsibility to watch out for those and discipline our breeding programs, in the interest of our cats and of the long-term survival of our breed.

#### References and useful resources

Armstrong, John: Demystifying Inbreeding Coefficients.  
<http://www.netpets.org/dogs/healthspa/demyst.html>

Dale Vogt, Helen A. Swartz and John Massey: Inbreeding: Its Meaning, Uses and Effects on Farm Animals  
<http://muextension.missouri.edu/xplor/agguides/ansci/g02911.htm>

FSpeed - Rapid Computation of Inbreeding Coefficients:  
<http://www.tenset.co.uk/fspeed/>

Lorimer, Dr. Heather E.: Inbreeding and its effects on the immune system, (Assistant Professor, Genetics; Department of Biological Sciences, Youngstown State University)  
[http://pawpeds.com/MCO/mchs/articles/lorimer\\_no.html](http://pawpeds.com/MCO/mchs/articles/lorimer_no.html)

Inbreeding and it's General Effects:  
<http://cc.yzu.edu/~helorime/inbred.html>

Glossary of Terms:  
<http://www.pawpeds.com/MCO/mchs/glossary.html>

Jerold S. Bell, D.V.M.: The Ins and Outs of Pedigree Analysis, Genetic Diversity, and Genetic Disease Control  
<http://www.mbf.com/computed/bell.asp> (Note: This is a particularly comprehensive article on pedigree

analysis and thinking around breeding practices.)

Wikipedia:  
<http://en.wikipedia.org/wiki/Inbreeding>

Inbreeding and linebreeding:  
<http://bowlingsite.mcf.com/genetics/inbreeding.html>

#### Annex A

##### IC calculations

There are two methods to calculate IC: Wright's method and Hardiman's method. The former does not incorporate into the calculations the level of inbreeding that might already be present in the common ancestor(s). Hardiman's method, however, takes account of such inbreeding.

A few rules of thumb, applicable to a mating between two cats that are related to each other but themselves not already inbred (i.e. were individually not the result of related cats mated to each other), could be useful though. These are close family breedings:

- when a cat is mated with a sister/brother: 25 %
- when a cat is mated with a parent: 25 %
- when a cat is mated with a halfsister/halfbrother: 12.5 %
- when a cat is mated with a grandparent: 12.5 %
- when a cat is mated with a cousin: 6.25 %

An inbreeding coefficient of 1 (rare in mammals) would result if the only matings practiced over many generations were between full brother and full sister. As a general rule, this type of mating in domestic animals cannot be kept up beyond 8-10 generations, as by

that time the rate of breeding success is very low. However, the rare survivors may go on to found genetically uniform populations.

It is clear that in cases where the common ancestor is already inbred, Wright's method will underestimate IC. In some breeds we know that many of the cats are already inbred as the result of a rather limited gene pool of good cats over the years. We will be fooling ourselves not to take due account of this, in other words if we want the whole truth, we should use Hardiman's method.

I would like to explain the calculation of an inbreeding index for a mating between related individuals (sire A and dam B) where each of them is already inbred. This is probably a real life situation for most of us! The tool here is the Hardiman's method of IC calculation.

- Identify the ancestors that A and B have in common
- Calculate the IC resulting from each of those common ancestors

We have already said that ending here would be an underestimation of the IC, if those ancestors are themselves inbred. Therefore, for

each of the common ancestors of A and B, identify the ancestors that they in turn may have in common. Then calculate the IC for each of them.

- Now increase the IC calculated for each of A and B's inbred common ancestors as follows: IC due to common ancestor C \* (1 + IC calculated for C itself due to its own inbreeding)
- As in Wright's method, add up the IC's for the A-to-B mating, for all of the common ancestors (adjusted as explained above for those common ancestors who are already inbred themselves).

Let's look at an example. This is the pedigree of baby-cat-to-be-bred, from a mating of sire A to dam B. (Note: ideally these calculations should be based on more than 4 generations. Inbreeding in the fifth and later generations (background inbreeding) often has a profound effect on the genetic makeup of the offspring represented by the pedigree. In fact, Hardiman's method should as standard practice be calculated on 5 generations. For simplicity I will do only 4 generations here.)

What would baby cat's inbreeding coefficient be, calculated using each of the two calculation methods discussed above?

Wright's method: this ignores the fact that sire A is already inbred (it has G as an ancestor in both sides of its pedigree). Therefore the IC will be:

- ancestor C:  $0.5^4 = 0.0625$
- ancestor G (occurs twice on sire's side):  $0.5^6 = 0.015625$
- ancestor G (for the second occurrence):  $0.5^6 = 0.015625$
- ancestor J:  $0.5^6 = 0.015625$

Total IC: 0.109375, i.e. 10.9%

Now, calculated using Hardiman's method we have the following:

- Ancestors already inbred: C (inbred on N)
- IC for C on ancestor N:  $0.5^3 = 0.125$

- Common ancestors C, G and J
- ancestor C (inbred on N):  $(0.5^4) * (1 + 0.125) = 0.070313$
- ancestor G (occurs twice on sire's side):  $0.5^6 = 0.015625$
- ancestor G (for the second occurrence):  $0.5^6 = 0.015625$
- ancestor J:  $0.5^6 = 0.015625$

Total IC: 0.117188, i.e 11.7%.

*Elizabeth van Renen*

A	C	G	N
		H	O
		G	N
	D	I	J
		C	N
	E	J	O
B	F	L	P
		M	Q
			G
			H
			R
			S
			T
			U
			V

## Show Dates 2009

### MARCH:

07 TCS  
SACATS  
14 EPCC  
SAASA  
21 BRS

### APRIL:

04 SACC Kitten Show  
11 PCS  
18 RCC  
ABCC

### MAY:

09 CFC  
23 WPCC  
30 EPCC  
PCS

### JUNE:

06 SACC National Show  
14 MCIG  
20 ABCC  
27 NCFSCC

### JULY:

04 PCS  
OSRBG  
11 TCS  
17 WODAC Friday Show  
18/19 WODAC 2 Day Show  
18 ABCC

### AUGUST:

01 COTY  
08 BIG  
15 RCC  
EPCC  
29 WPCC

### SEPTEMBER:

05 Gauteng Invitational  
12 PCS  
19 Cape Top Cat  
26 EPCC

Show dates subject to change, contact the Show Manager or contact person for the Club / Breed Group to confirm

## Contact details for Show Managers

### All Breeds Cat Club (ABCC)

Sunette Mulder Cell: 0824621085  
Email: sunette@gmail.com

### Breders of Rex & Sphynx (BRS)

Grant Leih, Tel: 011 7046492 PM  
Email: grant.leih@bertling.com

### Burmese Interest Group (BIG)

Ian Moore Tel: 021 7122001 PM  
Email: IMOORE@telkomsa.net

### Cape Top Cat

Lance Wiseman  
Tel: 021 6892235 PM

### Cat Fanciers Club (CFC)

Ingrid de Wet, Tel: 011-8494870  
Email: incats@global.co.za

### Cat of the Year 2009 (COTY)

Kaai du Plessis / Dirk Taljaard,  
Tel: 031 7670633 PM  
Email: kaaidirk@mweb.co.za

### Eastern Province Cat Club (EPCC)

Johan Groenewald,  
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### Gauteng Invitational

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### Maine Coon Interest Group (MCIG)

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### Northern Cape/

### Free State Cat Club (NCFS)

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### Oriental, Siamese & Related Breeds Group (OSRBG)

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### Persian Cat Society (PCS)

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Tel: 031 7670633 PM  
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### Rand Cat Club (RCC)

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Email: grant.leih@bertling.com

### SACC Kitten and SACC National Shows

Jan van Rooyen  
Tel: 011 616-4687 PM

### S.A. Abyssinian & Somali Association (SAASA)

Yvonne Akersten,  
Tel: 021 9884834

### Transvaal Cat Society (TCS)

Gail Nel, Tel: 011 6787776 PM  
Email: twofold@iafrica.com  
Athylle Caw, Tel: 011 2340126 PM  
Email: athylle@mweb.co.za

### Siamese Breeders Group of S.A. (SBG)

Ian Moore, Tel: 021 7122001 PM  
Email: IMOORE@telkomsa.net

### Western Province Cat Club (WPCC)

Ian Moore, Tel: 021 7122001 PM  
Email: IMOORE@telkomsa.net  
A Knight  
Email: avknight@gmail.co.za

### World of Dogs and Cats (WODAC)

Jan van Rooyen  
Tel: 011 616-4687 PM  
Email: sacatreg@iafrica.co.za

## SACC Clubs:

### GAUTENG:

#### Cat Fanciers Club (CFC)

P.O. Box 76141,  
Wendywood, 2144  
Landie Copperthwaite, Tel: 011-  
7882573 PM  
Email: [Yolanda.Copperthwaite@wits.ac.za](mailto:Yolanda.Copperthwaite@wits.ac.za)

#### Rand Cat Club (RCC)

P.O. Box 10439, Strubenvale 1570  
Karen Pepler, Tel: 011 7951711  
PM  
Email: randcatclub@gmail.com

#### Transvaal Cat Society (TCS)

P.O.Box 2449, Randburg 2125  
Gail Nel, Cell: 0824468189  
Email: twofold@iafrica.com

### NORTHERN CAPE/ FREE STATE:

#### Northern Cape/

#### Free State Cat Club (NCFS)

22 Zambesi Street, Rhodesdene  
Kimberley 8301  
Jane Vermeulen, Tel: 0837000338  
Email: janeverm@netactive.co.za

### WESTERN CAPE:

#### All Breeds Cat Club (ABCC)

P.O.Box 6556, Welgemoed  
Sunette Mulder Cell: 0824621085  
Email: secretary@allbreeds.co.za

#### Burmese Interest Group (BIG)

Kim Cutter Tel: 021 4619505 PM  
Email: kimben@mweb.co.za

#### Western Province Cat Club (WPCC)

P.O.Box 53580, Kenilworth, 7708  
Hazel King, Tel: 021 7154042  
Email: yangon@mweb.co.za

### EASTERN CAPE:

#### Eastern Province Cat Club (EPCC)

P. O. Box 15835, Emerald Hill,  
6011  
Rita Wiseman, Cell: 0832674827  
Email: [rwiseman@telkomsa.net](mailto:rwiseman@telkomsa.net)

### KWA-ZULU NATAL:

#### Persian Cat Society (PCS)

P.O.Box 829, New Germany 3620  
Jane Goble, Cell: 0827843126  
Email: jane.bayerhealthcare.com

#### SACATS Group (Various Breeds)

Johan Lamprecht,  
Tel: 021 9769965  
Email: lampr@mweb.co.za

#### Siamese Breeders Group of S.A. (SBG)

Ian Moore, Tel: 021 7122001 PM  
Email: IMOORE@telkomsa.net

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## SACC Affiliated Breed Groups:

#### S.A. Abyssinian and Somali Association (SAASA)

Julie Banham, Tel: 021 7901525  
Email: bayfield@iafrica.com

#### Burmese Interest Group (BIG)

Hazel King  
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Email: yangon@mweb.co.za

#### Birman Fanciers Group (SBFG)

Antoinette Bezuidenhout  
Cell: 0837882414  
Email: sbfg@telkomsa.net

#### Breeders of Rex and Sphynx (BRS)

Grant Leih  
Cell: 0845848922  
Email: grant.leih@bertling.com

#### Maine Coon Interest Group (MCIG)

Gail Nel, Cell: 0824468189  
Email: twofold@iafrica.com

#### The Siamese, Oriental and Related Breeds Group (OSRBG)

Leanne Muller,  
Email: mullerle@eskom.co.za



*Clubs and Breed Groups - kindly  
notify the SACR should any of your  
contact details change.*

**SACR fee structure for 2009:**

## SACC FEE STRUCTURE &amp; DOCUMENT INDEX (SACR D2) -2009

<b>ITEM</b>	<b>FEE</b>	<b>FORM</b>
<b>Registration of a stud</b>	<b>R250-00</b>	<b>SACR F1</b>
<b>Mating certificate</b>		<b>SACR F1a</b>
<b>Initial registration of a cattery</b>	<b>R300-00</b>	<b>SACR F2</b>
<b>SACC Breeder Guidelines</b>		<b>SACR F2a</b>
<b>Annual renewal of cattery registration (Annual Breeder fee). Payable from 1 January</b>	<b>R 60-00</b>	<b>SACR F2b</b>
<b>Re-activation fee for Annual renewals received after 31 March</b>	<b>R 60-00</b>	<b>SACR F2b</b>
<b>Annual membership fee for non SACC Breeders / exhibitors – showing non SACC (original) registered Cats.</b>	<b>R 60-00</b>	
<b>Registration per cat or kitten under 15 weeks of age</b>	<b>R 20-00 Per kitten</b>	<b>SACR F3</b>
<b>Registration per cat or kitten over 15 weeks of age</b>	<b>R 50-00 Per kitten</b>	<b>SACR F3</b>
<b>Pedigree per cat or kitten (E-mailed to the SACR) for printing &amp; processing) – in addition to the registration fee</b>	<b>R 20.00-colour R 10.00- B &amp; W Per pedigree</b>	
<b>Registration of a imported cat</b>	<b>R100-00</b>	<b>SACR F3b</b>
<b>Registration of a cat registered with another S.A. Association</b>	<b>R 35-00</b>	<b>SACR F3c</b>
<b>Reclassification Application</b>		<b>SACR F3d</b>
<b>Transfer of ownership per cat / kitten *</b>	<b>R 20-00</b>	
<b>Addition of new breeder suffix (only on transfer * from one authorised SACC breeder to another) - in addition to the transfer fee)</b>	<b>R 25-00</b>	
<b>Application for D.M. Status</b>		<b>SACR F4</b>
<b>Application for Title Certificate</b>	<b>2008 – R00.00</b>	<b>SACR F4b</b>
<b>Copy of registration- or Transfer document</b>	<b>R 20-00</b>	
<b>Breed number list</b>	<b>R 20-00</b>	
<b>Standard Of Points</b>	<b>R 10-00</b>	

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