Belgrade 07 oct 2011

Principles and objectives of BioSecurity

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An EU funded project managed by the Delegation of the European Union to Serbia
Project "Technical Assistance for the Control and Eradication of Classical Swine Fever (CSF) and Rabies in Serbia" (CRIS No: 226-870)

Common Agricultural Policy (CAP)

GOAL
Produce as much food as possible at the lowest prize

COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 12 January 2000
COM (1999) 719 final

WHITE PAPER ON FOOD SAFETY

- Consumers should be offered a wide range of **safe and high quality** products **coming from all Member States.**

White Paper

- **Food safety policy** must be based on a comprehensive, integrated approach
- The role of those involved in the food chain must be clearly defined
- It is existing a PRIMARY RESPONSIBILITY for Farmers (breeders), feed dealers, manufacturers, butchers…

Productive Process

then…… the farmer / breeder …

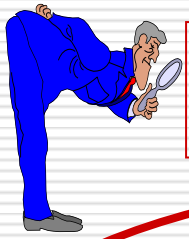
….has to "Qualify" his production

- ensuring product safety
- fulfilling actual legislation and that being introduced
- promoting added-value to the products

To ensure a market share to his production

Food Safety

- Food Traceability must be ensured



RISK ANALYSIS

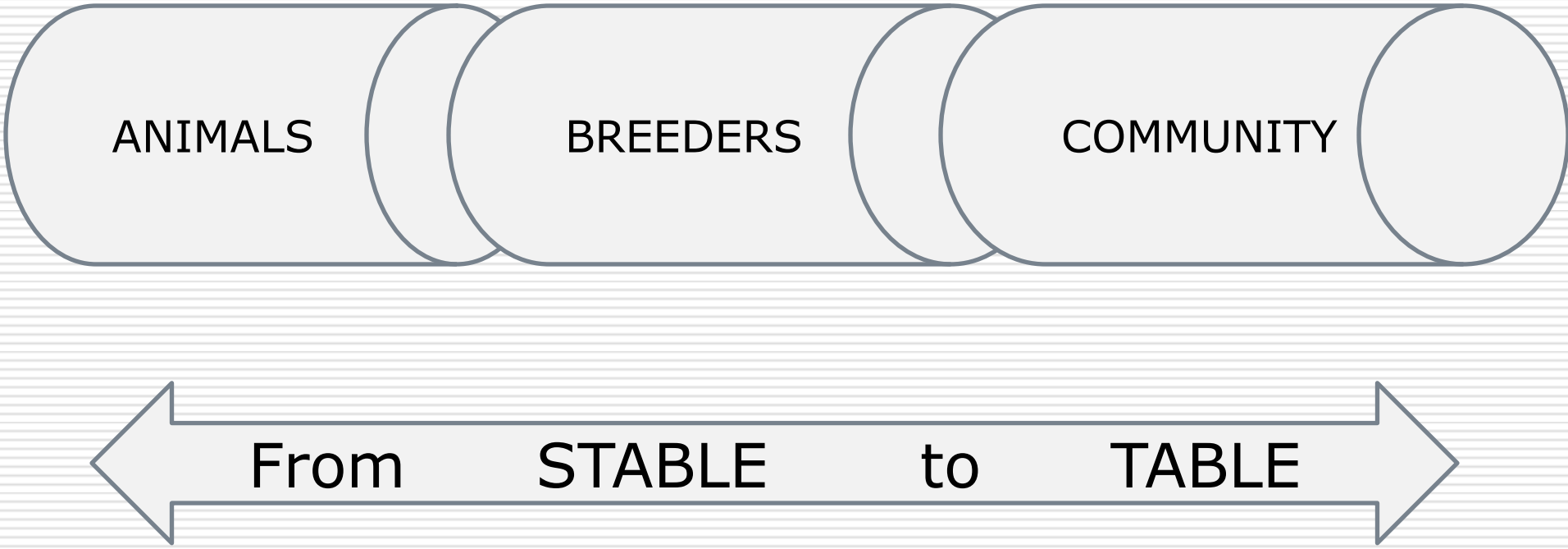
- Risk analisys

  (productive process)

ANIMAL WELFARE

SCENARIO

FOOD CHAIN



FOOD CHAIN

- Good living conditions
- Welfare legislation respect

INSURER

- Animal product Quality
- Food Safety

INSURER

E.F.S.A.

- June 2004 set out in a manuscript:

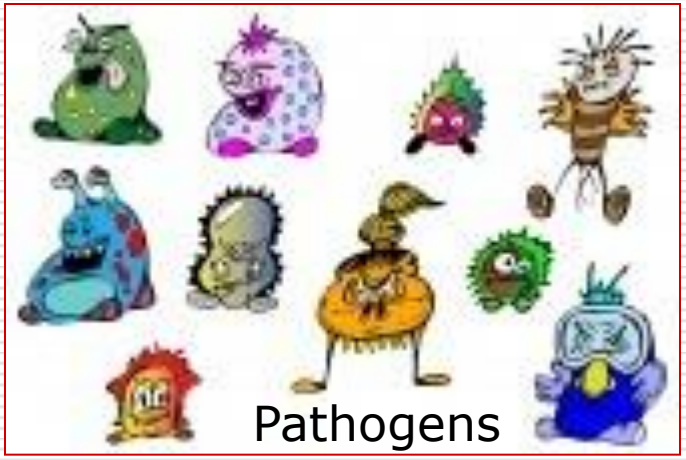
"FOOD SAFETY
BEGINS
ON OUR FARMS"

Health …Welfare …. Safety

Optimitation of **COSTS** vs **BENEFITS** relationship

- ANIMALS
  - Better living conditions
  - Productive performances optimization
- FARMER (BREEDER)
  - Higher income (more money)
- COMMUNITY
  - Food Safety
  - Food Security (high quality food)

…but…
there are some ENEMIES



…the pathogens… cause

- Economic losses
  - Direct

  - Undirect

How the pathogens can enter….

Other pigs or pork products

Feed

Water

Wind aerosol

Bedding material

Equipment

Birds, Rodents Flies Insects

Workers Veterinarians Merchants ….

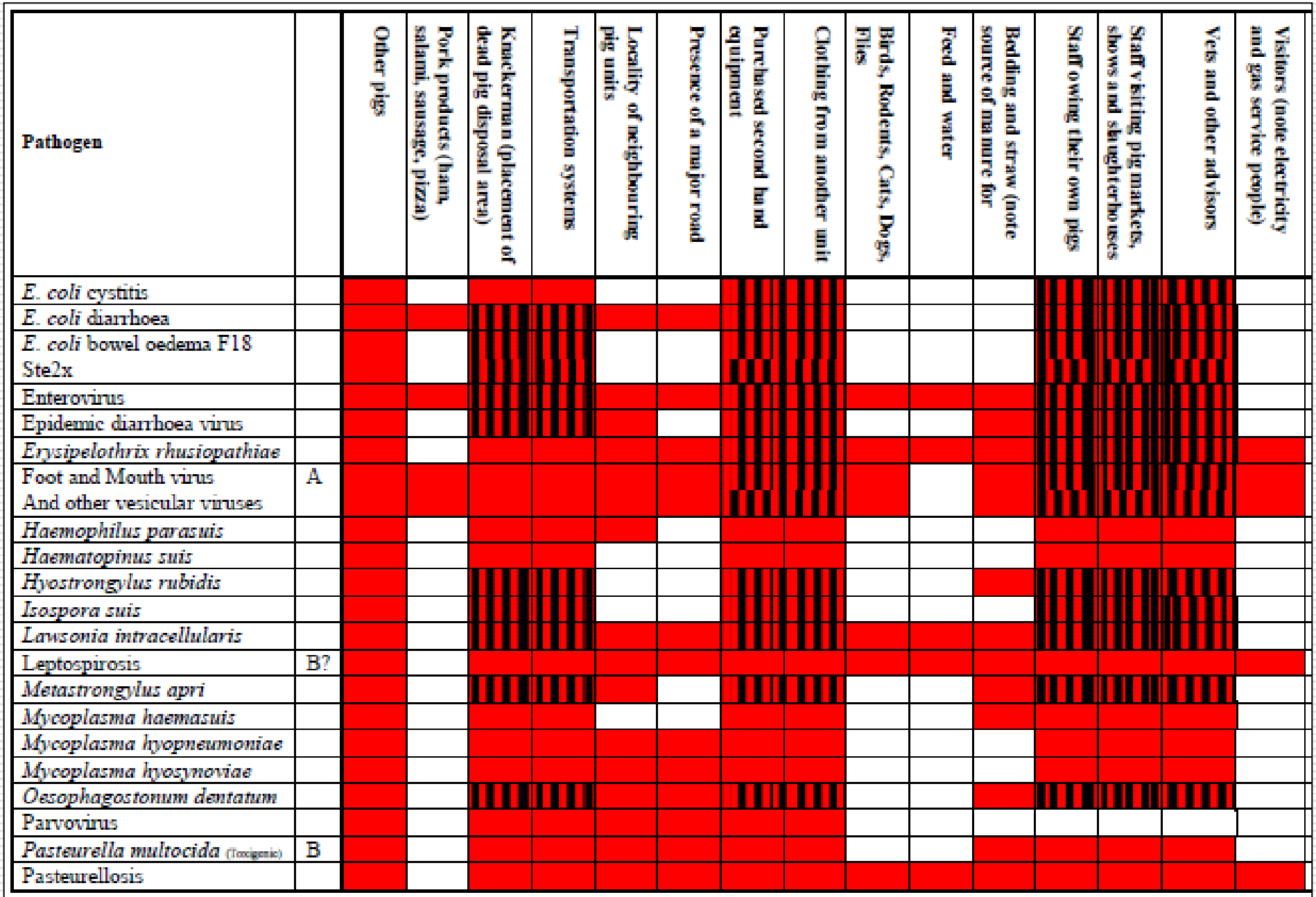
Transports (lorries) other vehicles

How the pathogens can enter….

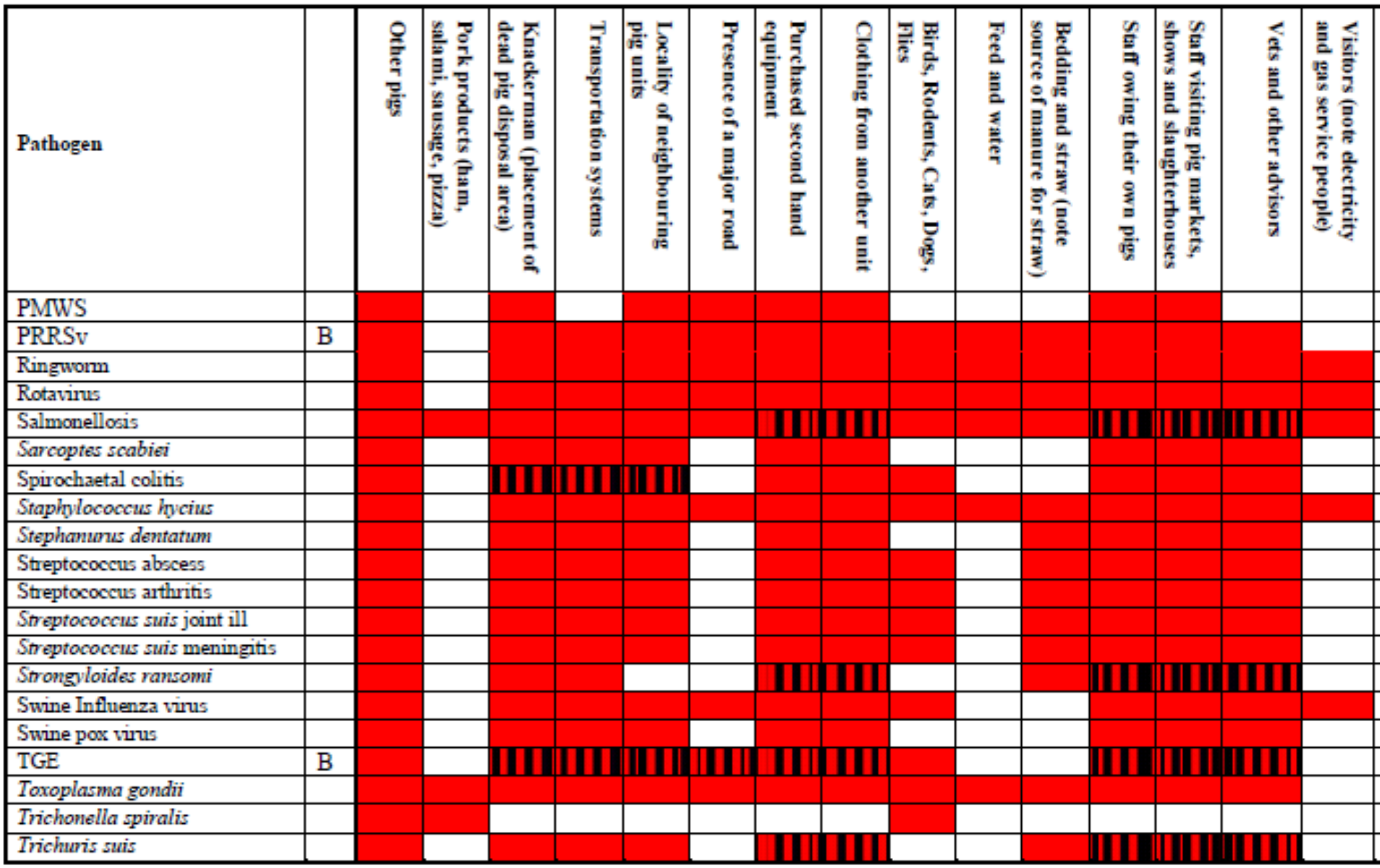
by J. Carr

Pathogen	OIE status	Other pigs	Pork products (ham, salami, sausage, pizza)	Knackerman (placement of dead pig disposal area)	Transportation systems	Locality of neighbouring pig units	Presence of a major road	Purchased second hand equipment	Clothing from another unit	Birds, Rodents, Cats, Dogs, Flies	Feed and water	Bedding and straw (note source of manure for	Staff owing their own pigs	Staff visiting pig markets, shows and	Vets and other advisors	Visitors (note electricity and gas service people)
Actinobaculum suis		■		■	■			■	■				■	■	■	
Actinobacillus suis		■			■											
Actinobacillus pleuropneumoniae		■			■											
African Swine Fever	A	■	■	■	■	■		■	■	■			■	■	■	
Arcanobacterium pyogenes		■		■	■			■	■	■		■	■	■	■	■
Ascaris suum		■		■	■			■	■			■	■	■	■	■
Aujeszky's Disease Pseudorabies	B	■		■	■	■	■	■	■	■			■	■	■	■
Bordetella bronchiseptica		■		■	■	■		■	■	■		■	■	■	■	■
Borrelia spiralis		■														
Brachyspira hyodysenteriae		■		■	■	■	■	■	■	■		■	■	■	■	
Brachyspira pilosicoli		■		■	■	■	■	■	■	■		■	■	■	■	
Brucella suis	B	■		■	■	■			■	■		■	■	■	■	
Classical Swine Fever	A	■	■	■	■			■	■	■		■	■	■	■	■
Circovirus I and II		■	■	■		■		■	■							
Clostridium difficile		■		■	■	■		■	■			■	■	■	■	
Clostridium perfringens		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Congenital tremor virus?		■		■	■											
Cytomegalovirus		■		■	■			■	■				■	■	■	

How the pathogens can enter….



How the pathogens can enter….



there is the need of ….an insurance

BioSecurity

"Life insurance"

…as in any insurance policy..

- Different levels of protection

COST MONEY

- Different security states

...Risk factors...

:

- Farm location;
- Location of other pig farms in the proximity;
- Proximity to roads of higher traffic;
- Transport systems;
- Introduction of new replacement stock;
- Disposal of carcasses (location of the device or storage facility);
- Visitors (traders, veterinarians, workers, inspectors, auditors, etc);
- Purchase of used "equipment" (second hand);
- Clothing from other farms or livestock settlements;
- Birds, rodents, dogs, cats, flies ....;
- Artificial insemination and / or Embryo Transfer;
- Purchase of medicines, disinfectants, etc ... .. (control introduction);
- Feed and water;
- Products derived from pork (ham, salami, sausages, etc ....);
- Bedding (straw, shavings, sawdust ... ... sources of origin);
- Farm workers that own and take care of other pigs;
- Staff working visiting fairs and markets, other pig farms, slaughterhouses;
- New machinery and other purchases.
- ……
- …….

… «the risk»…is…

- Indipendent from farm typology

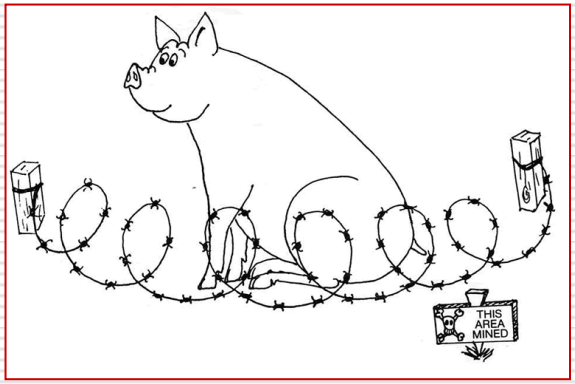
….biosecurity check list…

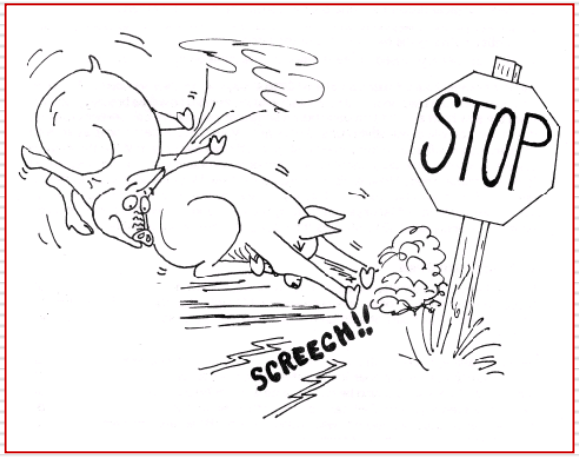
FARM CATEGORIZATION:

- **LOW** risk farm = up to 150
- **MEDIUM** risk farm = 151 to 250
- **HIGH** risk farm = 251 to 350

Biosecurity

- **Biosecurity means** technical managerial procedures adoption, act to:
  - prevent infective disease introduction inside the pig farms
    Precaution
  - reduce to minimal levels any possibility to spread infective diseases within pig farms
    Reason of life
  - prevent infective disease spreading from farm to farm (and then in the territory)
    Social Duty





BIOSECURITY

Prevention of infective disease introduction inside the pig farms

- LOCATION (Farm)

- ISOLATION (Segregation) of replacement stock (Quarantine management)

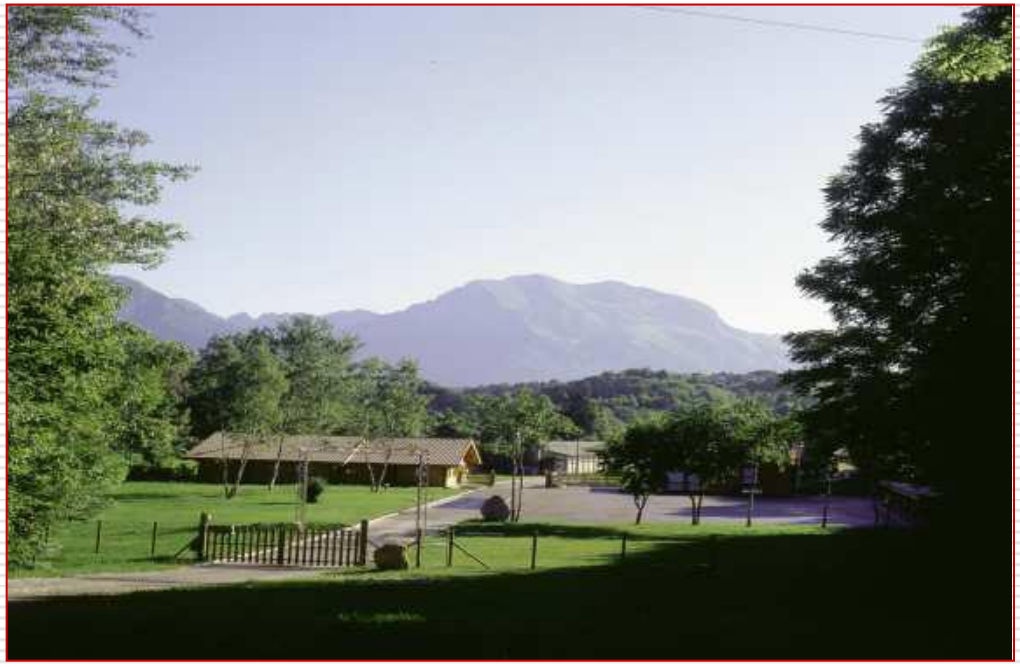
- HERD FACILITIES or FARM CONDITIONS

  (in itself))

BIOSECURITY

Prevention of infective disease introduction inside the pig farms

The more the farm is «isolated» the more it is safe



Distance of transmission	less then 10 m	meters 10 - - 50	meters 50 -1000	Km 1 --10	more then 10 km
TGE / PED					
Influenza					
Sarcoptes scabiei = mange					
Salmonellosis					
Porcine Reproductive and Respiratory Sindrome (PRRS)					
Parvovirus					
PMWS					
Pasteurella Multocida (toxigenic)					
Mycoplasma hyopneumoniae					
Leptospirosis					
Lawsonia intracellularis					
Foot and Mouth Disease (FMD)					
E. coli					
Classic Swine Fever (CSF) and African Swine Fever (ASF)					
Brucellosis					
Brachyspira hyodysenteriae					
PRV (ADV) Aujeszky's disease					
Actinobacillus pleuropneumoniae					

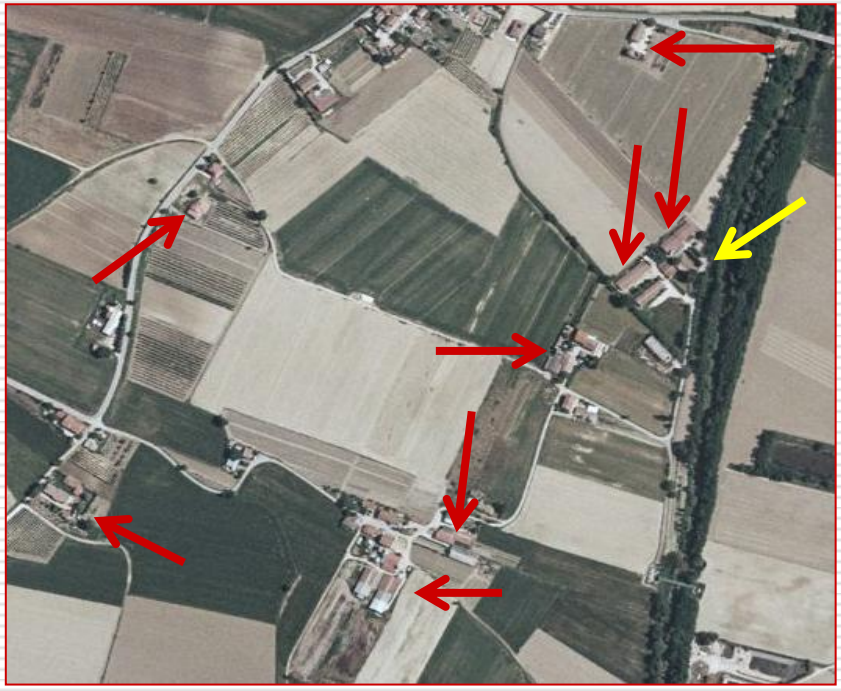
BIOSECURITY

Prevention of infective disease introduction inside the pig farms

DISTANCE

(from farm to farm)

500 m



BIOSECURITY

Prevention of infective disease introduction inside the pig farms

LOCATION

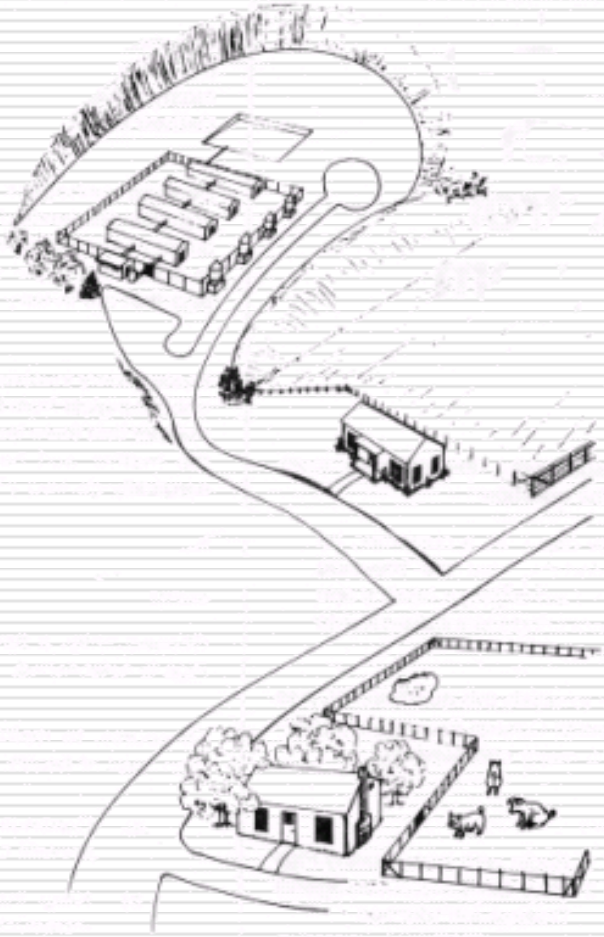
- **Isolation …**
  - reduces possibility of aerosol spreading for some pathogens
    - Aujeszky
    - Foot and mouth disease (FMD)
    - PRRS
    - …..
  - promote high health status mainteinance within the herd

BIOSECURITY

Prevention of infective disease introduction inside the pig farms

LOCATION

- Ideally, if we had to build a new pigfarm……we must consider:
  - Pig density in the area
  - Pig herds typology within 5 km of ray
  - Other possible sources of contamination
  - Land typology
  - Proximity with main road
  - …….



BIOSECURITY

Prevention of infective disease introduction inside the pig farms

STOCK REPLACEMENT (introduction)

- Isolation
- Segregation
- Quarantine

BIOSECURITY

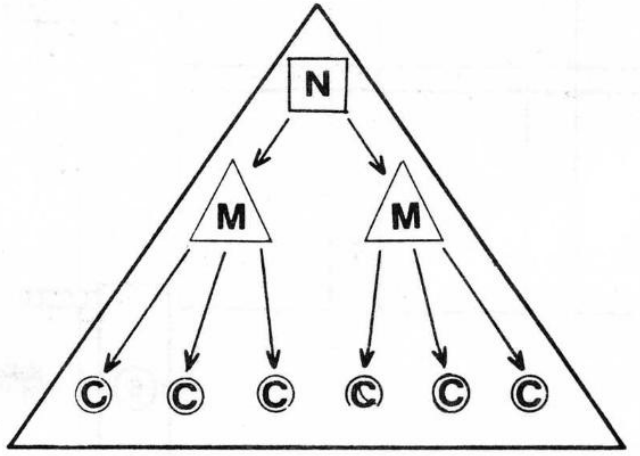
Prevention of infective disease introduction inside the pig farms

- REPLACEMENT STOCK: 3 main aspects to consider:
  - Health Status of the pigfarm of origin
  - Health status of pig farm of destination (in where the animals have to be introduced)
  - General conditions of quarantine facilities

CERTIFIED

HEALTHY

PIGS



BIOSECURITY

Prevention of infective disease introduction inside the pig farms

MAIN FARM PROTECTION

- Perimetral fence
- People movements control
- Lorries movements control (disinfection)
- Pests Control
- Sick pigs and runt pigs management
- Pig refusals management
- …..
- Improvement of all farm structures for having a Better Hygiene

BIOSECURITY

Prevention of infective disease introduction inside the pig farms

- Teoretically, ….NOTHING have to enter
- Pratically, ...everything … HAVE TO ENTER….
  …MUST BE CONTROLLED !!!....and MANAGED !!!

BIOSECURITY

Prevention of infective disease introduction inside the pig farms

- Herd facilities or conditions (in itself)
  - Perimetral fence

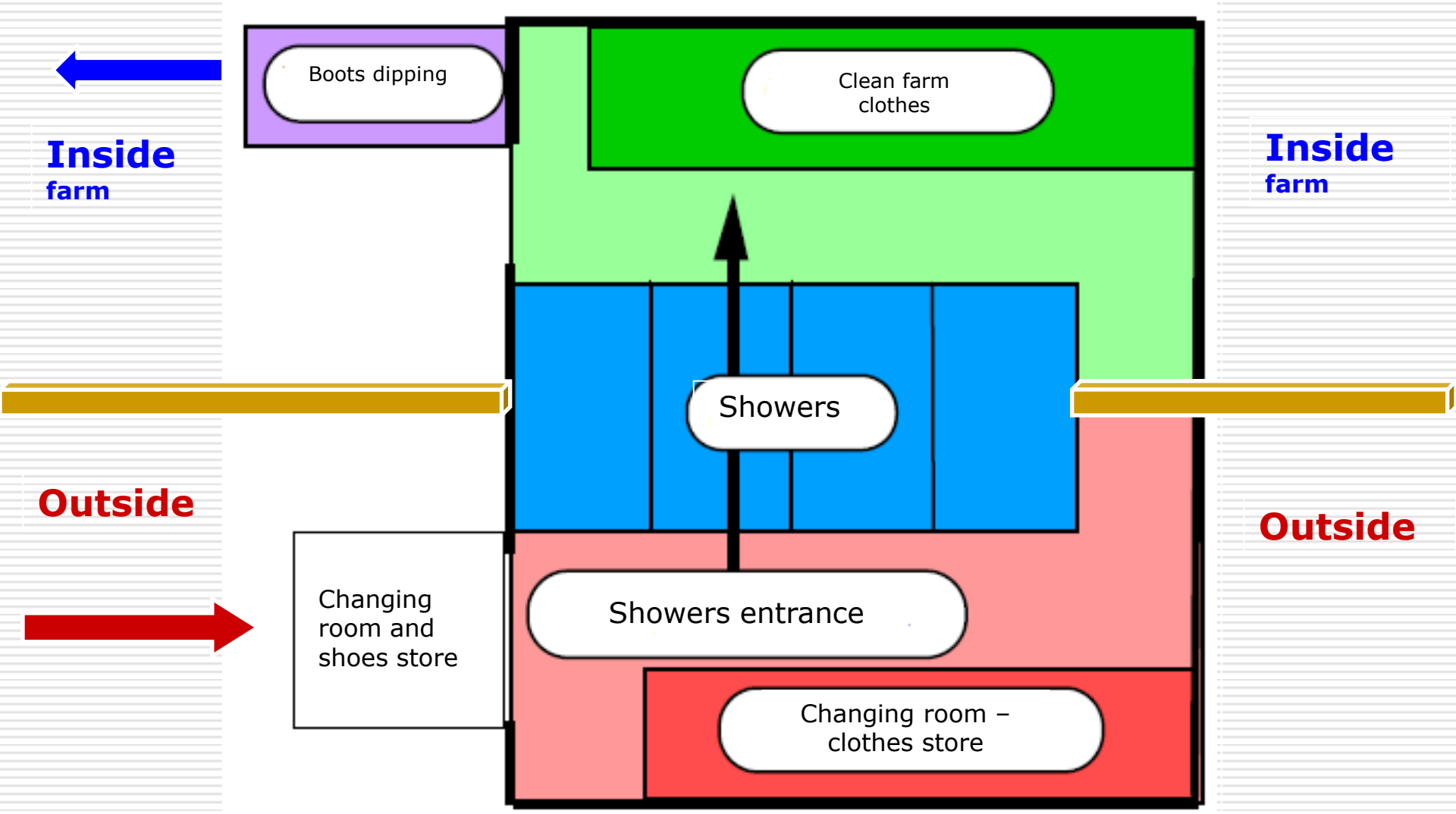
BIOSECURITY

Prevention of infective disease introduction inside the pig farms

- Herd facilities or conditions (in itself)
  - People movements control

BIOSECURITY

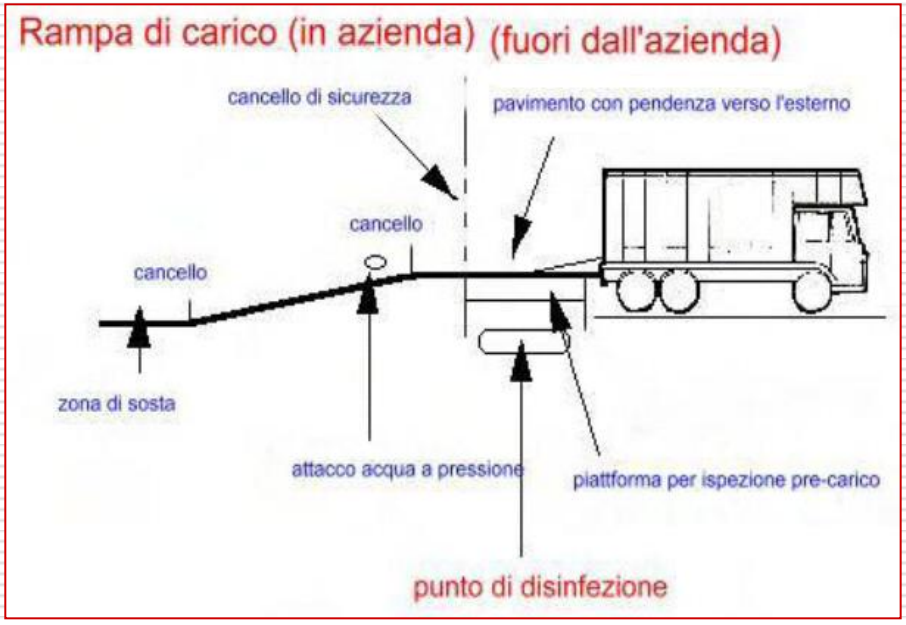
Prevention of infective disease introduction inside the pig farms



BIOSECURITY

Prevention of infective disease introduction inside the pig farms

- Herd facilities or conditions (in itself)
  - Animal transports and other deliveries control

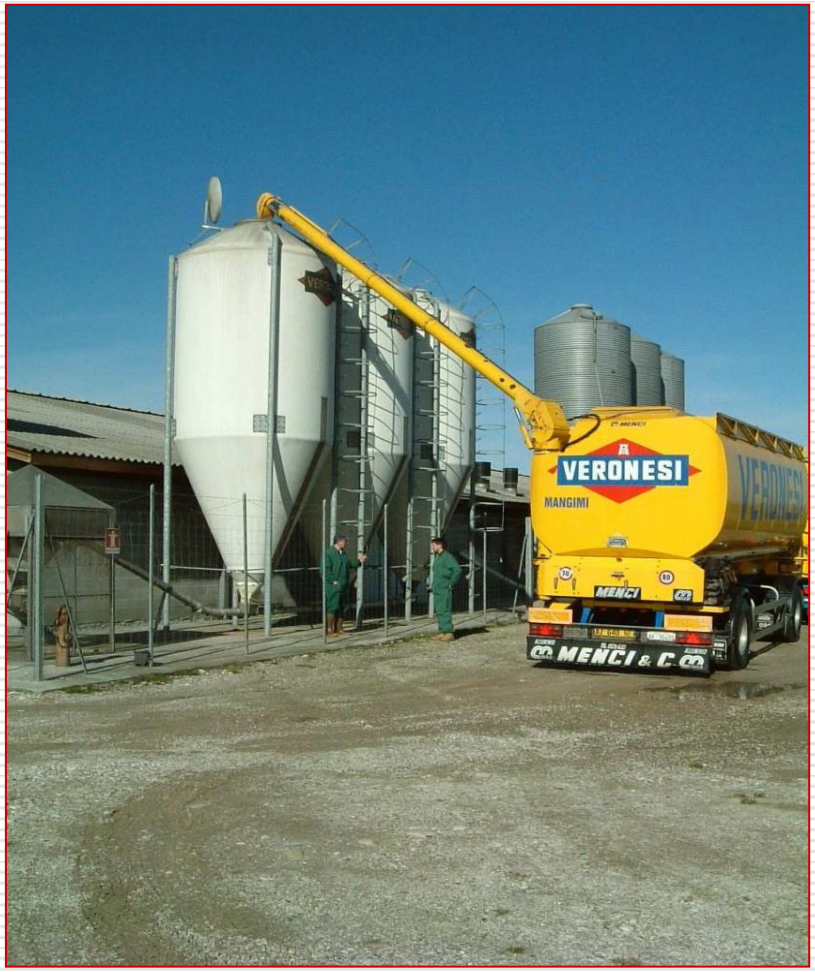


Pig loading ---unloading

Pig loading ---unloading

Feed forniture

IDEAL



GOOD

NECESSARY


TUTTI GLI AUTOMEZZI
CHE ENTRANO DEVONO ESSERE
DISINFETTATI FUORI DALLA PESA
1 SUONARE CLACSON O SIRENA
2 ATTENDERE QUALCUNO PER LA
PESATURA

BIOSECURITY

Prevention of infective disease introduction inside the pig farms

- WILD ANIMALS, BIRDS, FLIES…CONTROL

AVOID

AVOID

BIOSECURITY

Prevention of infective disease introduction inside the pig farms

Sick pigs and runt pigs management

RUNT pigs

SICK pigs

Hospital pens

- Separate
- Blood test

BIOSECURITY

Prevention of infective disease introduction inside the pig farms

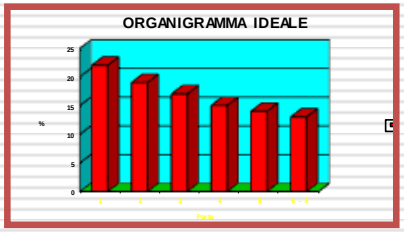
CARCASSES MANAGEMENT

Wash and disinfect

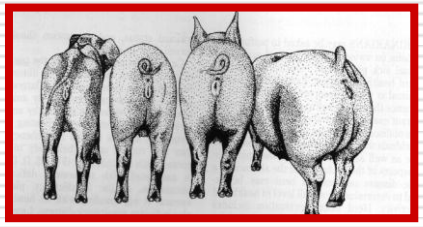
BIOSECURITY

to reduce to minimal levels any possibility to spread infective diseases within pig farms

Within farm pathogens spreading prevention



All in
All out



Satisfation of physiological needs

Genetic differencies

Unidirectional Pig flow

AVOID

BIOSECURITY

To prevent infective disease spreading from farm to farm

- TARGET:

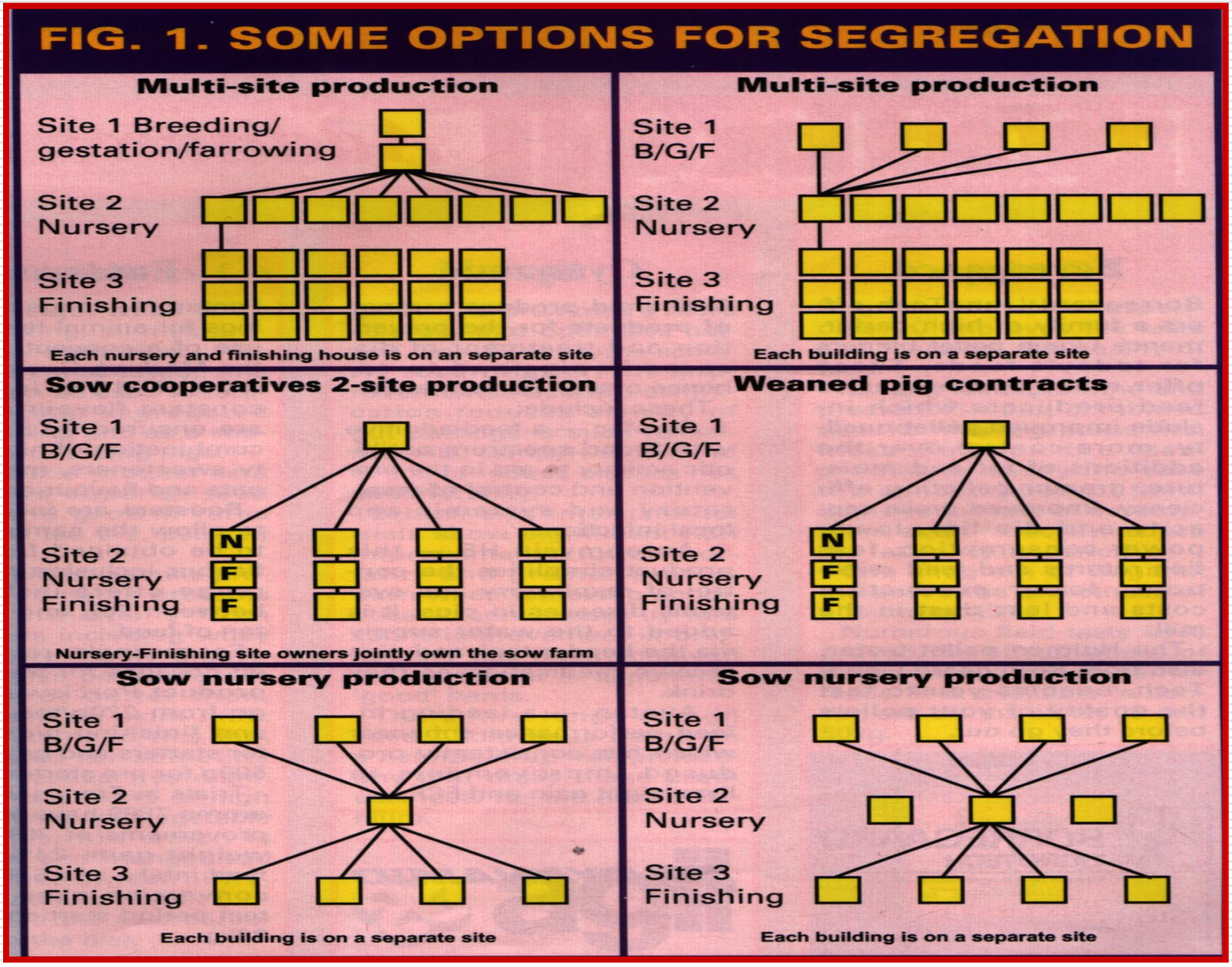
PATHOGENS LEVELS REDUCTION

BIOSECURITY

To prevent infective disease spreading from farm to farm

- All in / All out
- Depop / Ripo
- Partial Depop
- (M.E.W.) Medicated early weaning
- (M.M.E.W.) Modified early weaning
- ISOWEAN (PIC) -
- Segregated Early Weaning (S.E.W.)
- **Multi-site production**

How … Multisites …works…



BIOSECURITY

foresees:

- Definition of behavioural criteria

- Identification and coding of "standards“ good farming practices

Good **M**anagement **P**ractices

BIOSECURITY requires :

MANAGEMENT	CONTROL
■ Activities planing ■ Executive procedures description draft ■ Staff Training	■ Farm Data recording ■ Productive parameters analysis ■ Weekly farm data analysis

BIOSECURITY ends:

- Improvement of productive performances
- Quality assurance of the product
  - Organolectic
  - more healthy
- Production costs optimization

BIOSECURITY is...

pillar

H azard A nalysis C ritical C ontrol P oint

Take home messages

Biosecurity is a journey

.....

not the destination

Take home messages

The destination is:


ONE WORLD = ONE HEALTH

Thank you
for your
attention