



RHEA
natural



**Naturalguard is an Essential Oil supplement obtained from mixture
of three plant oil extracts:
Lavender, Pine and Eucalyptus oils.**

Innovative technique is applied in extraction and evaluation of each plant and its composition.

Several carriers, like minerals in feed premix, dilution in water and in salt have been used.

Pine oil 3.5 mg/kg		Lavender 2.0 mg/kg		Eucalyptus 0.5 mg/kg		Iodized Salt 
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Product Description

Form: Colourless Liquid

Characteristics: It has physical properties similar to potable water with pH 6.5-7.5. It is non-hazardous, user-friendly and consumable.

Packaging: Polyethelene Plastic bottles 1.2L, and 5L

Stability: The product is stable for over 18 months





RECOMENDED DOSE OF NATURALGUARD AS WATER SUPPLEMENT IN SWINE

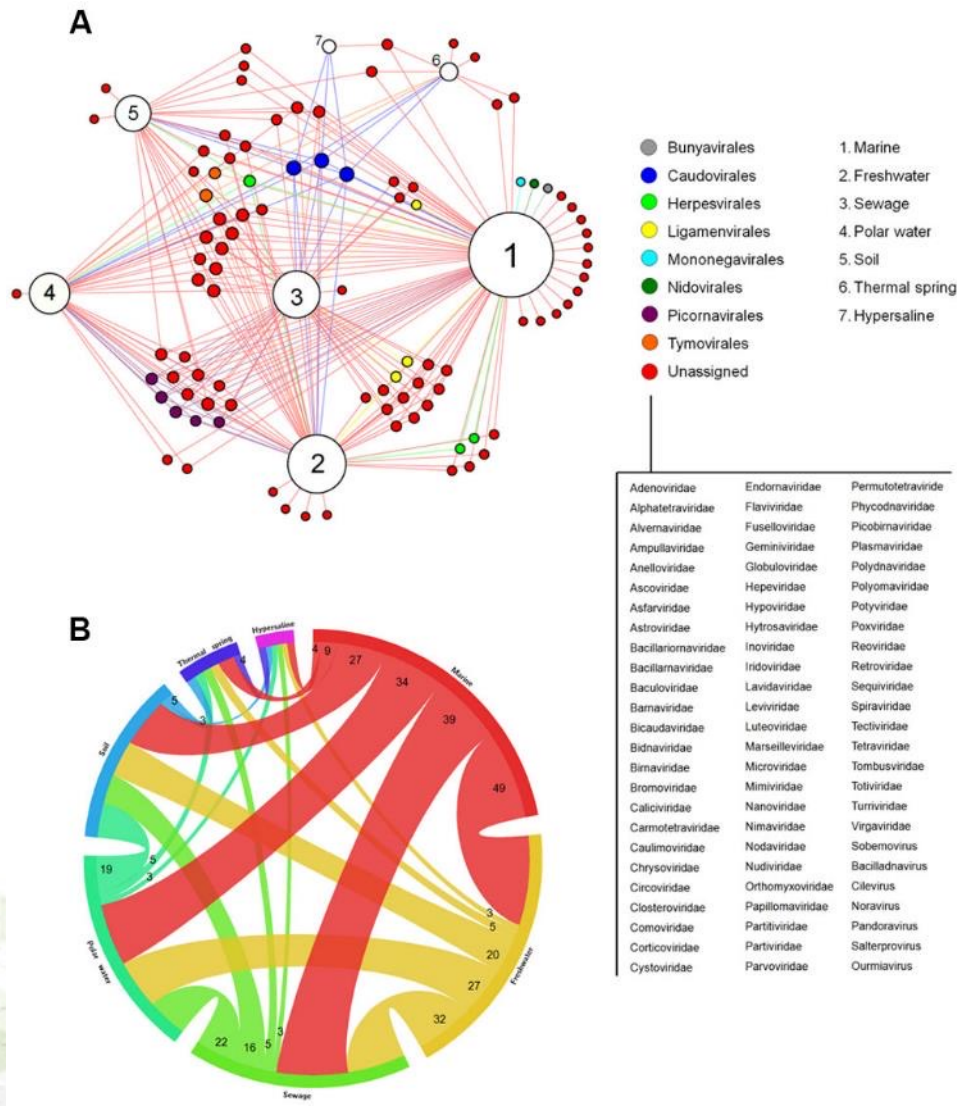
IMMUNE DOSE

Naturalguard dose 80 ppm mixed in drinking water everyday

TREATMENT DOSE

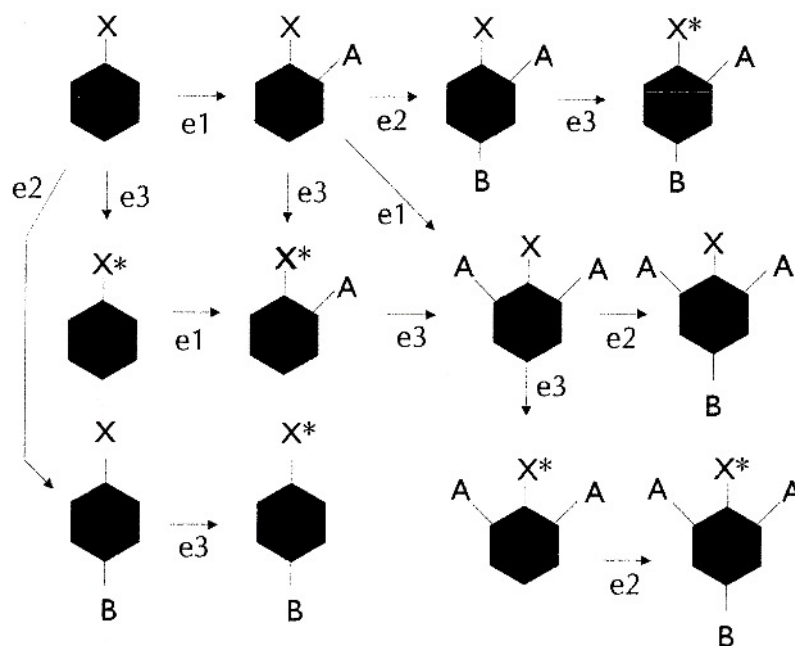
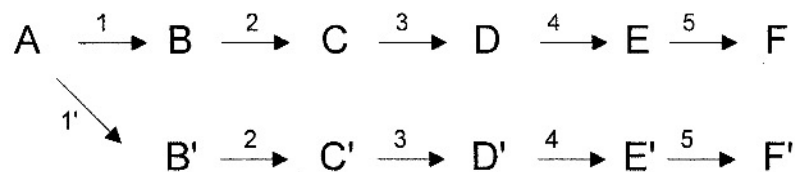
Naturalguard dose 160-240 ppm mixed in drinking water for 1 to 2 weeks

CONCEPT 1



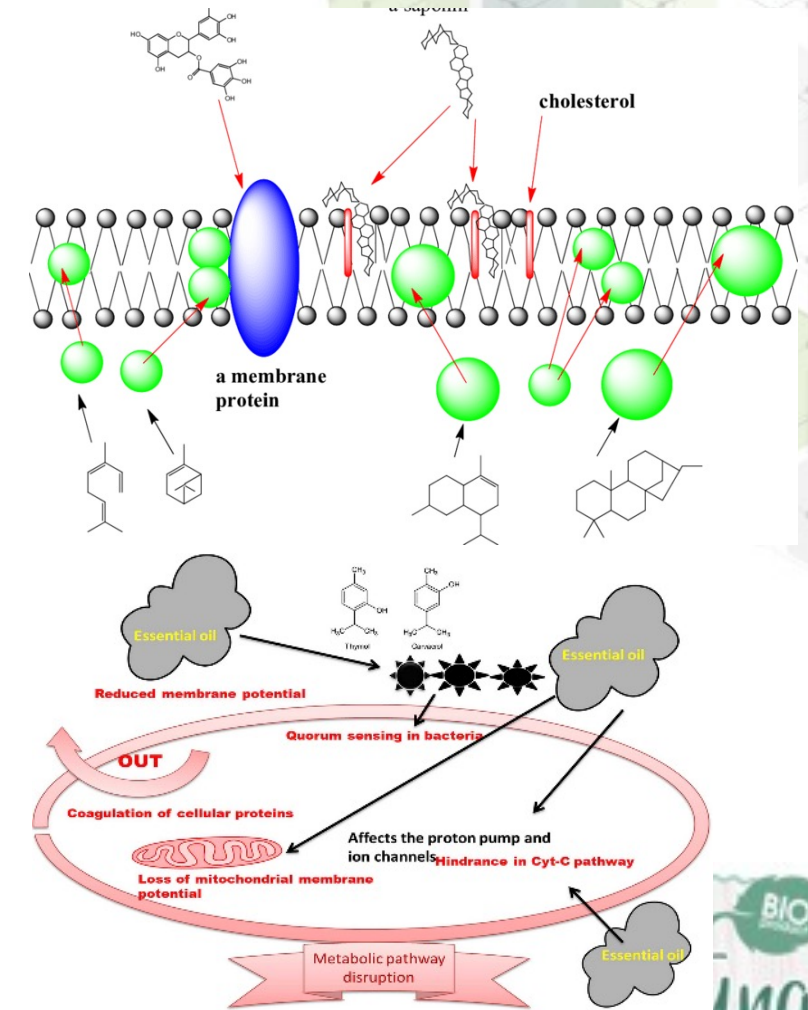
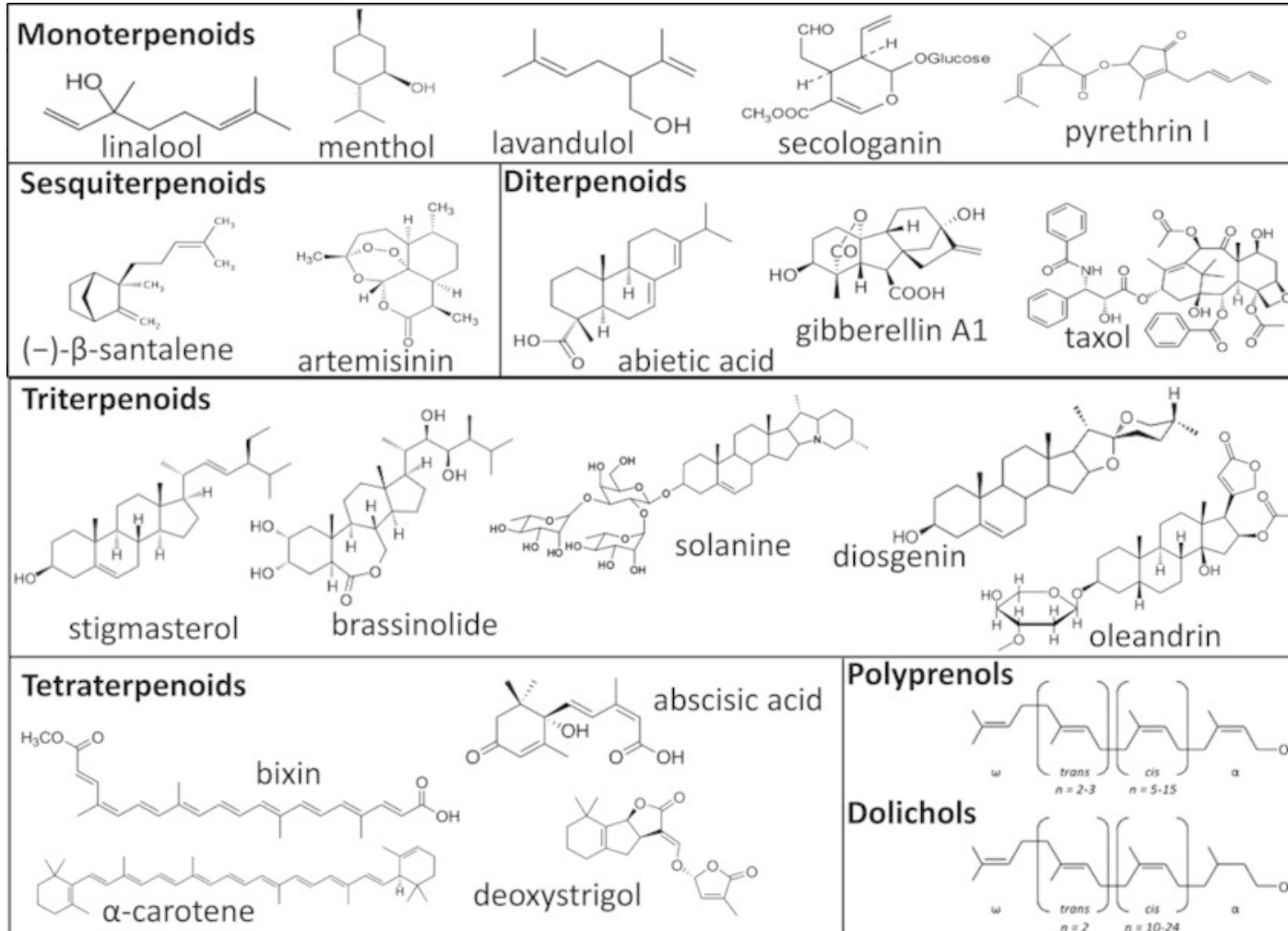
- The ever-present virosphere
- Dark matter of the virosphere: persistence
- Since virus persistence is exceedingly common but usually a silent state, it represents a large but mostly unnoticed force in **evolution—the dark matter of biology.**
- Jonathan R. Goodman 2020

Concept 2



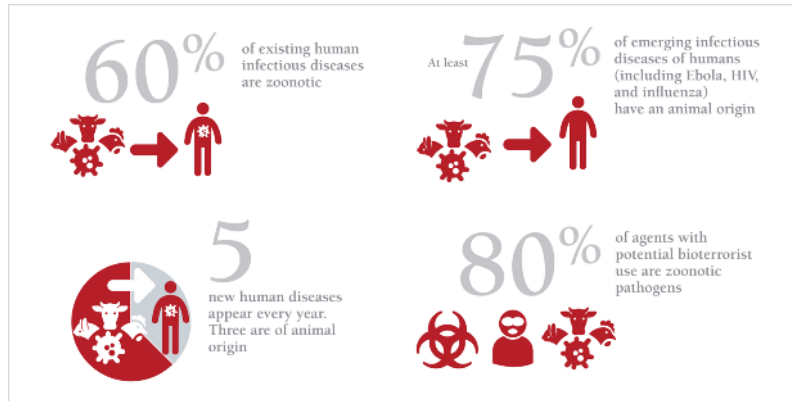
- Evolution and natural product diversity. **The Screening Hypothesis – the basic concepts**
- *using enzymes with broad substrate specificity*
- *exploiting the fact that many chemical reactions give multiple products.*
- *Branched and matrix pathways*
- **Richard D. Firn and Clive G. Jones 2003**
- **Phytochemical diversity: The sounds of silent metabolism**
- **Efraim Lewinsohn, Mark Gijzen 2009**

Concept 3



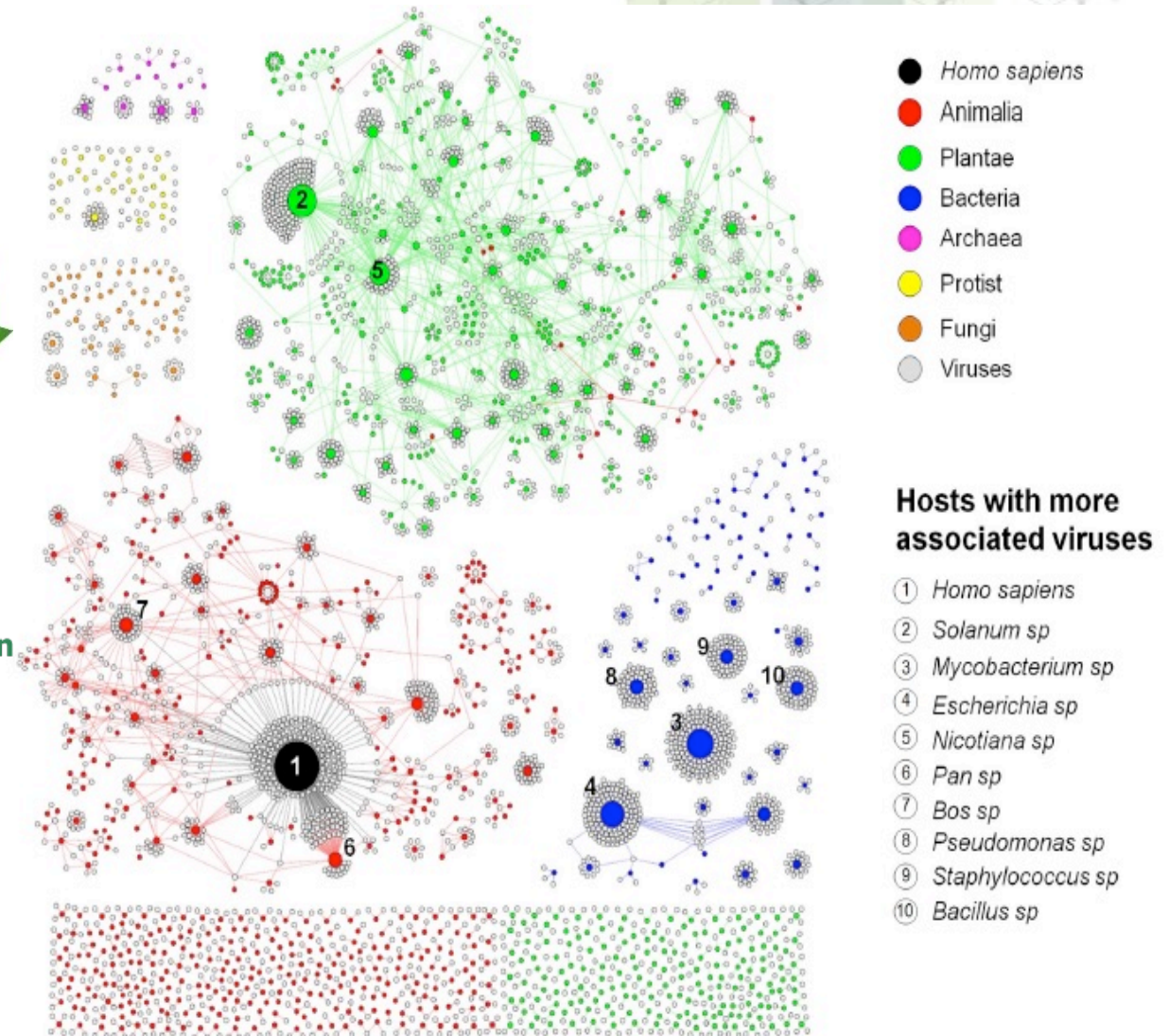


Concept 4

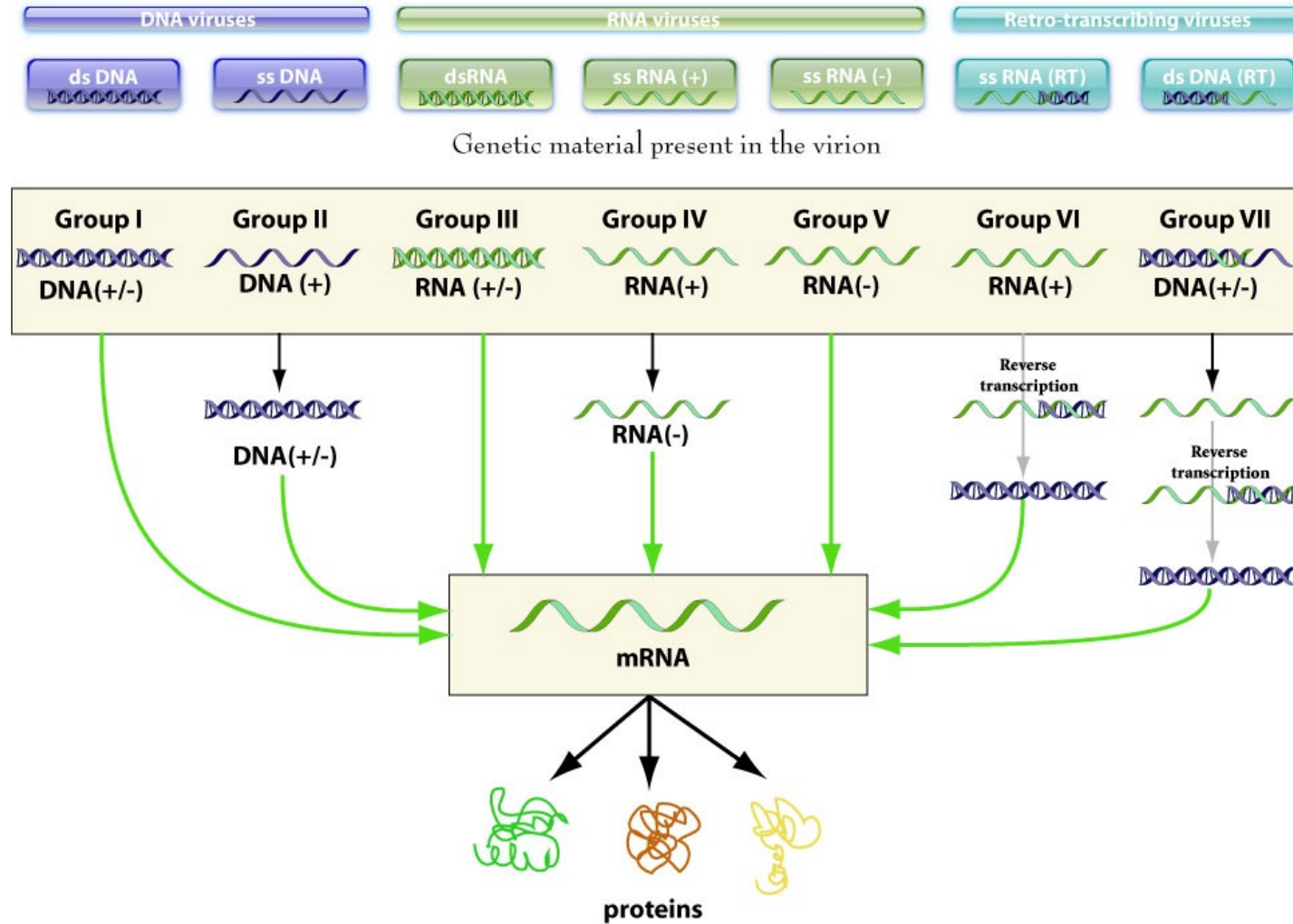


Definitions of One Health

One Health is a collaborative, multisectoral, and trans-disciplinary approach - working at local, regional, national, and global levels - to achieve optimal health and well-being outcomes recognizing the interconnections between people, animals, plants and their shared environment.



CONCEPT PROVING





MODE OF ACTION



- Naturalguard, containing Natural oils, possesses pronounced capability to stimulate the induction of humoral and cell-mediated immune response of lymphocytes to the antigens of pathogenic bacteria and alloantigen.
- It maintains the immunity level by keeping IgG level high which helps to protect animal from infectious diseases.
- It reduces the Mucosal Immune response which can be seen by low IgM value in NG treated group.
- It maintains the basic metabolic function of animal body. It is able to reduce the stress level of animal.
- It reduces the load of harmful pathogen (virus and bacteria) in the farming environment.
- It acts directly against specific pathogens like African Swine Fever, ND, H5N1 and on several pathogenic bacteria.



MODE OF ACTION

Immune Modulating Properties

- Naturalguard possesses pronounced capability to stimulate bactericidal activity of cultured lymphocytes, modulate the processes of PMNL and monocytes phagocytosis.
- It modulates the processes of respiratory burst and the synthesis of free radicals in phagocytosing cells by interacting with polysaccharide-binding cell receptors.
- It possesses pronounced capability to stimulate the induction of humoral and cell-mediated immune response of cultured human lymphocytes to the antigens of pathogenic bacteria and alloantigen.
- Naturalguard, depending on concentration and ratio of effectors with target-cells, is able to modulate the functional activity of NK cells.



In Vitro Trial on ATCC Microorganisms

Antibacterial activity of Naturalguard against pathogenic bacterial and yeast strains



«SCIENTIFIC CENTER OF DRUG AND MEDICAL TECHNOLOGY EXPERTISE
AFTER ACADEMICIAN E. GABRIELIAN» CJSC

CJSC, Armenia





Objective & Trial Design



Objective: To determine the Antibacterial activity of Naturalguard against pathogenic bacterial and yeast strains

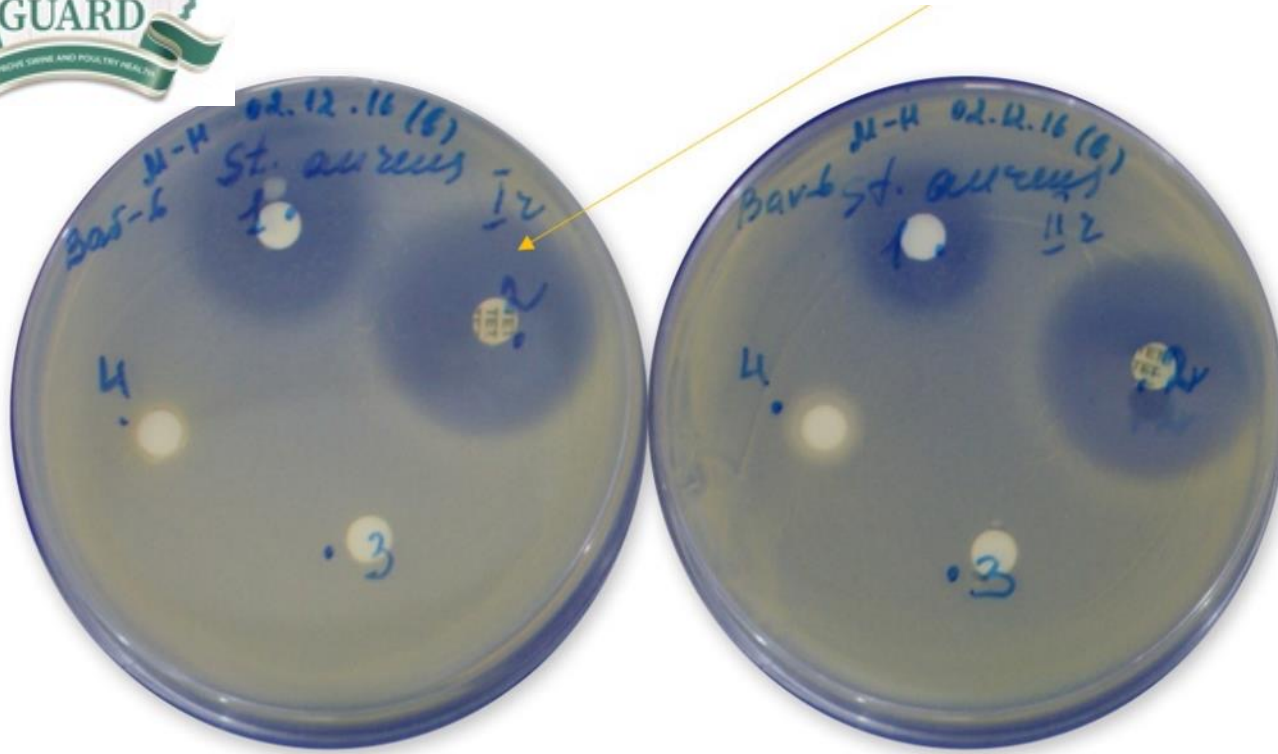
Measurement: The antibacterial activity is expressed by inhibition diameter ($\text{mm} \pm \text{SD}$). Represent statistical difference ($p \leq 0.05$) in the size of inhibition zones formed under the paper disc by NG and the control.

Microorganisms selected for the study: Escherichia coli ATCC-8739, Micrococcus luteus ATCC-10240, Pseudomonas aeruginosa ATCC-9027, Salmonella enterica subsp. enterica serovar Typhimurium ATCC-14028 , Staphylococcus aureus ATCC-6538, Staphylococcus epidermidis ATCC-12228) and anti-fungal (Candida albicans ATCC-10231 and Candida albicans NCTC-885-653).

Anti Bacterial results

Bacterial and yeasts strains	Naturalguard 10 µl	Tetracycline 30 µg	Fluconazole 40 µg
Staphylococcus aureus ATCC-6538	10.5 ± 1.7	32.1 ± 0.8*	ND
Staphylococcus epidermidis ATCC-12228	8.3 ± 0.7	12.3 ± 5.8	ND
Escherichia coli ATCC-8739	7.1 ± 0.05	19.1 ± 1.5*	ND
Salmonella entericaserovar Typhimurium ATCC-14028	7.1 ± 0.07	20.5 ± 1.0*	ND
Pseudomonas aeruginosa ATCC-9027	12.6 ± 0.4*	8.7 ± 1.5	ND
Micrococcus luteus ATCC-10240	10.3 ± 0.9	28.9 ± 1.0*	ND
Candida albicans ATCC-10231	7.1 ± 0.3	ND	27.4 ± 0.9*
Candida albicans NCTC-885-653	7.0 ± 0.03	ND	25.5 ± 1.4*

Anti-Bacterial activities



**Anti-bacterial activities of Naturalguard
against *Staphylococcus aureus***



**Anti-bacterial activities of Naturalguard
against *Micrococcus luteus***

Natural essential oils displays a pronounced bactericidal activity against an resistant to antibiotics strains *Escherichia coli* ATCC-8739, *Micrococcus luteus* ATCC-10240, *Pseudomonas aeruginosa* ATCC-9027, *Salmonella enterica* subsp. *enterica* serovar Typhimurium ATCC-14028, *Staphylococcus aureus* ATCC-6538, *Staphylococcus epidermidis* ATCC-12228) and anti-fungal (*Candida albicans* ATCC-10231 and *Candida albicans* NCTC-885-653).



Poultry Trials

Effect of Naturalguard (NG) on productivity and blood parameter of calves during growth and transportation period



**Faculty of Animal Sciences- University of Gajah Madah
Yogyakarta, Indonesia**



Results at 8 weeks



Item	Treatment		SEM	P-value
	Control	NG		
Initial BW, kg	87.55	88.35	1.69	0.932
Final BW, kg	128.50	137.30	3.71	0.360
DMI, kg/d	4.42	4.40	0.05	0.146
ADG, kg/d	0.68	0.82	0.03	0.942
G:F	0.156	0.192	0.01	0.168

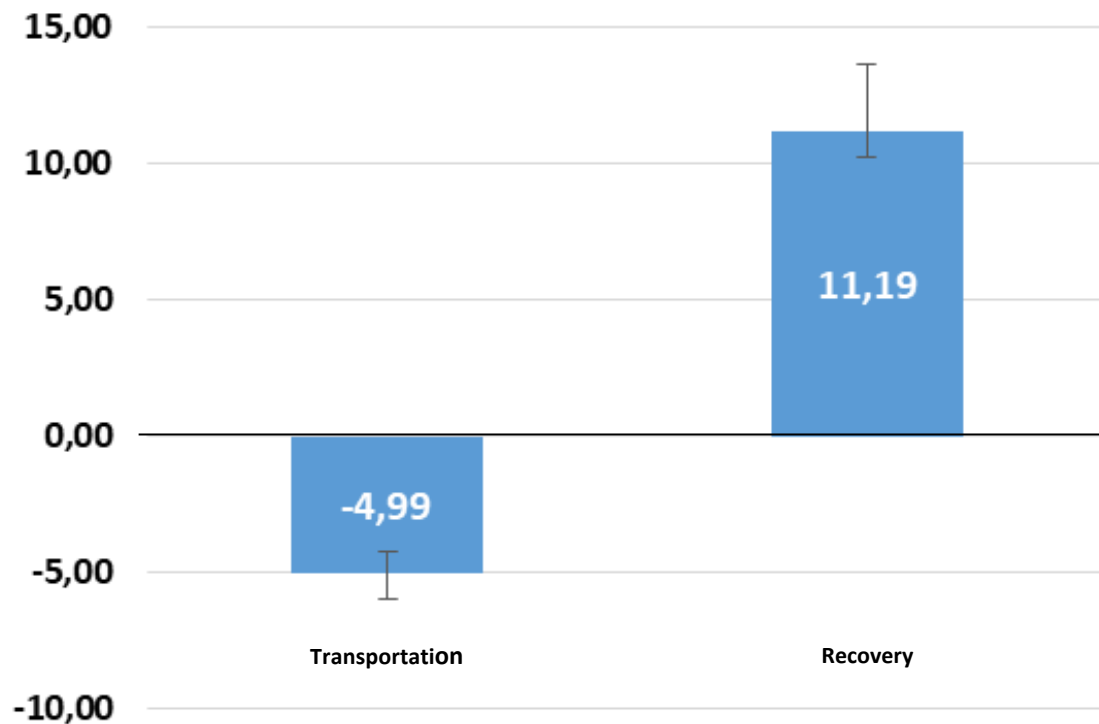


Results

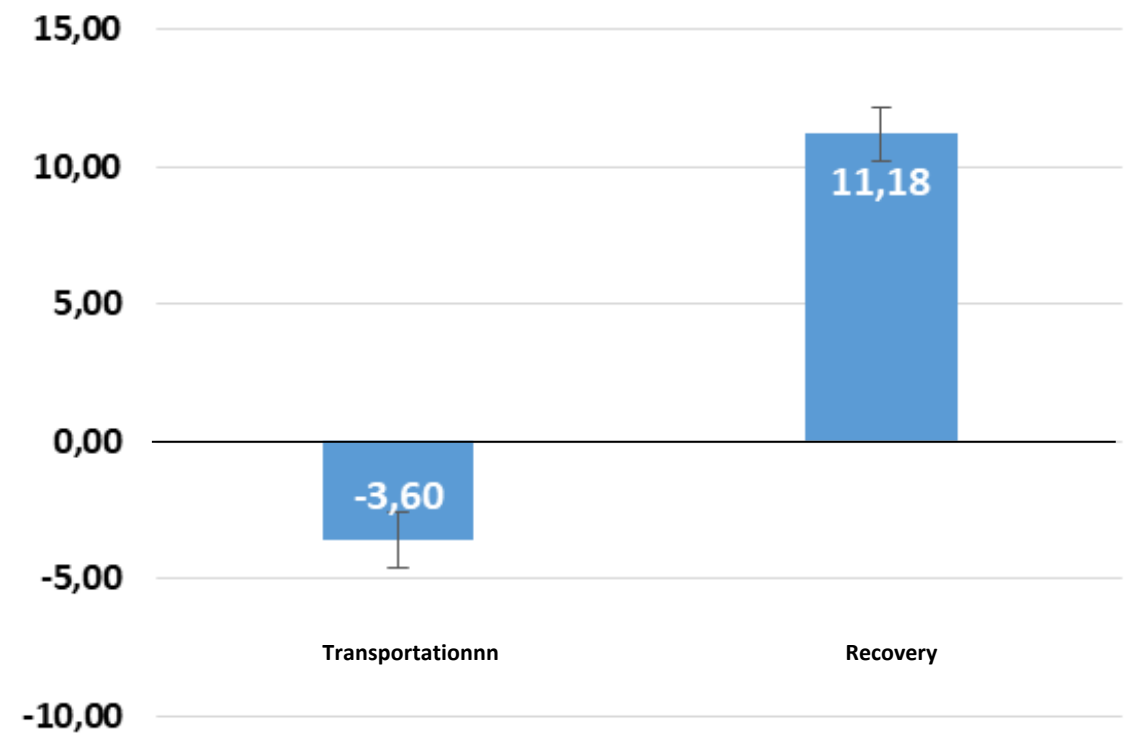


Effect of Naturalguard supplementation on body weight during transportation and recovery period

Control



Treatment



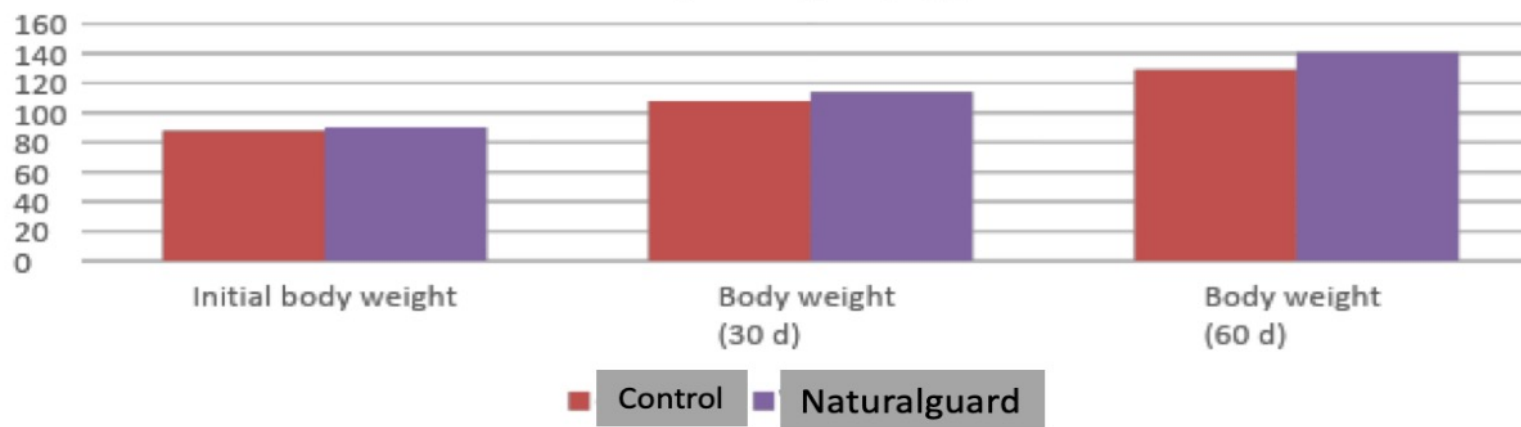


Results at 8 weeks



Growing Period

Body Weight (Kg)



Treatment	Initial body weight	Body weight (30 d)	Body weight (60 d)
Control	88	108	129
Naturalguard	90	114	141

Conclusion

Utilization of BAV Salt improve daily body weight gain 0.17 kg higher than control (0.85 kg vs 0.68 Kg)

Calf before and after NG application

Before



After



Effect of Naturalguard (NG) on productivity and blood parameter of Dairy Cattle



**Faculty of Animal Sciences- University of Gajah Mada
Yogyakarta, Indonesia**



Trial Design



☐ Feeding trial

- Treatment (basal diet + Naturalguard Dose 50 g/head/day) n = 10 heads
- Control (basal diet), n=10 heads
- Variable measured
- Body weight gain, feed intake, feed conversion ratio
- Milk yield (milk production, fat content, protein content)
- Digestibility study (DM, OM, Nitrogen digestibility)
- Serum parameters
 - Blood content : red blood cell, white blood cell, Packet cell volume, hemoglobin.
 - Mineral (Ca, P, Mg), cholesterol, glucose, triglyceride, total protein, albumin, urea, creatinine.

☐ Statistical analysis

- T-test



Results



Treatment	Initial body weight	Body weight (60 d)	Gain (kg)
Control	522	556	34
Naturalguard	530	575	45

number of animal: 28 head

Conclusion

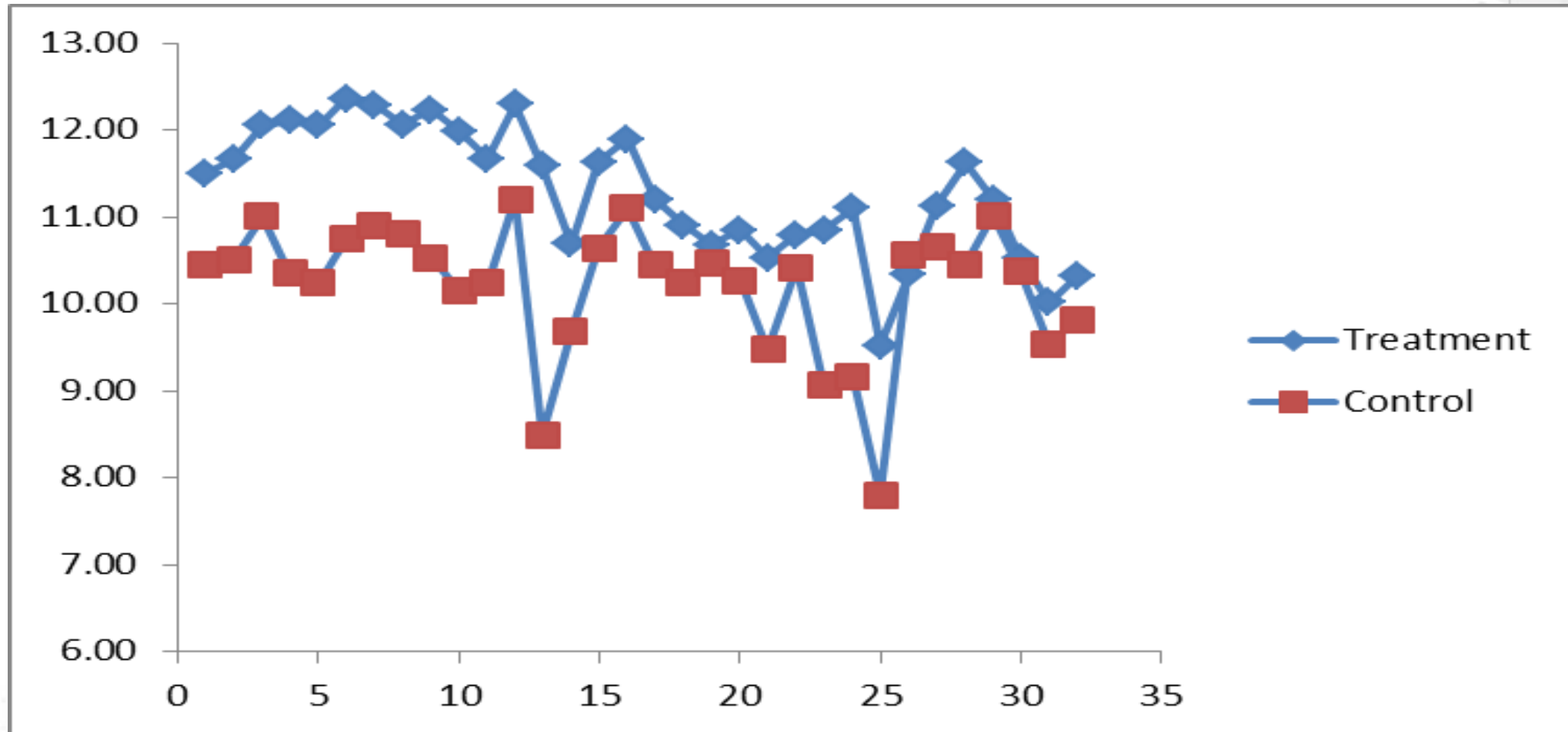
Utilization of Naturalguard (50 g/head/day) improve body weight gain 0.18 Kg of lactating dairy cattle (0.75 kg vs 0.57 Kg).



Results



Milk Production





Results



Milk Production

Parameter	Control (n=10 head)	Naturalguard (n=10 head)
Initial Body weight (kg)	514.20	514.55
Final Body weighty (kg)	547.30	557.35
Total Milk Production (49 d)	551.54	574.15
Average daily production (l)	11.26	11.74
Daily feed intake (kg)	20.39	20.90
Blood plasma metabolism		
Calcium (mg/Kg)	34.56	33.63
Phosphorus (mg/Kg)	107.62	93.70
Magnesium (mg/Kg)	9.49	9.52
Zinc (mg/Kg)	0.58	0.40
Iron Fe (mg/Kg)	3.27	3.26
Sodium (mg/Kg)	219.49	216.68
Chloride (mg/Kg)	671.74	662.31

Conclusion

Utilization of Naturalguard (50g/head/day) improved total milk production until 22.61 of lactating dairy cattle.



Results



Milk Composition

Milk Composition	Control n= 10 head	Naturalguard n= 10 head
Temperature (°C)	28.67	28.72
Fat (%)	4.16	4.38
Freezing Point (°C)	-0.44	-0.48
Specific Wight Scale	25.96	26.20
Specific Wight	1.02	1.03
Conductivity	0.62	0.63
Lactosa (%)	4.14	4.17
Solid non fat (%)	7.41	7.60
Protein (%)	2.71	2.78

Conclusion

Utilization of Naturalguard (50 g/head/day) have no impact on milk composition in cattle



Congresses & Publications



Thank you