

Meat or grain for dogs – or both?

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Vobra Special Petfoods

Veghel

The Netherlands



Owners select food for their dogs

Determinants

- Knowledge, experience, advice
- Marketing, price
- Attitude, philosophy, religion



Holistic dog food



Experience The Complete
Trophy Pet Care Service

Trophy Premium Holistic

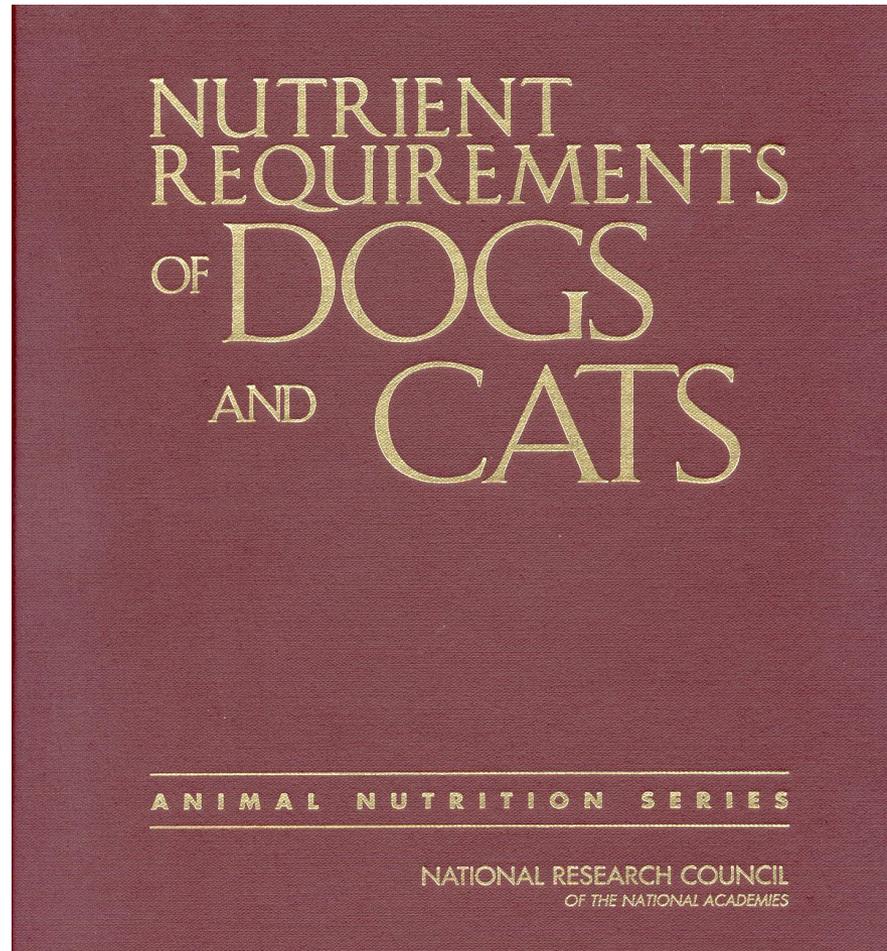


Nutritionist's approach to dog feeding

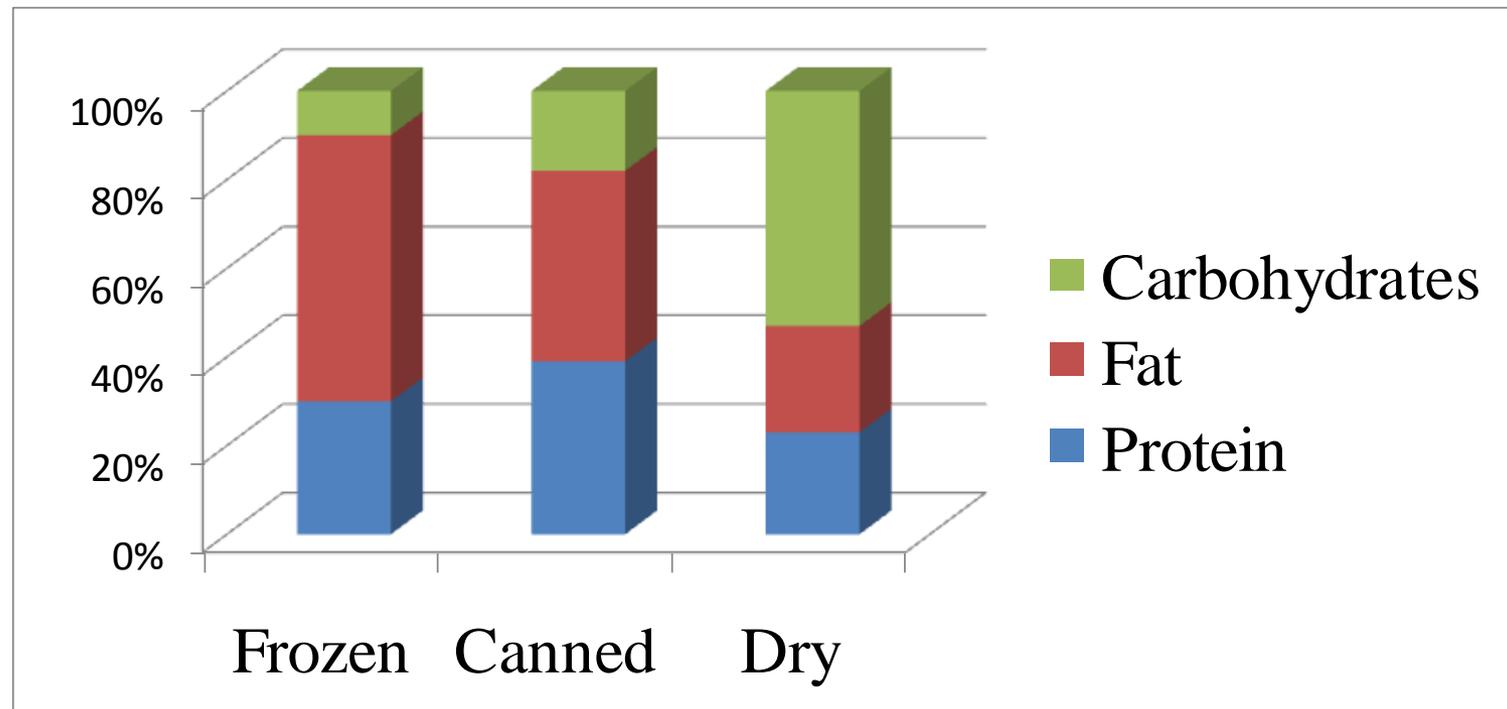
- Meet nutrient requirements
- Use a mixture of palatable and safe ingredients
- Implement evidence supporting a healthy and long life



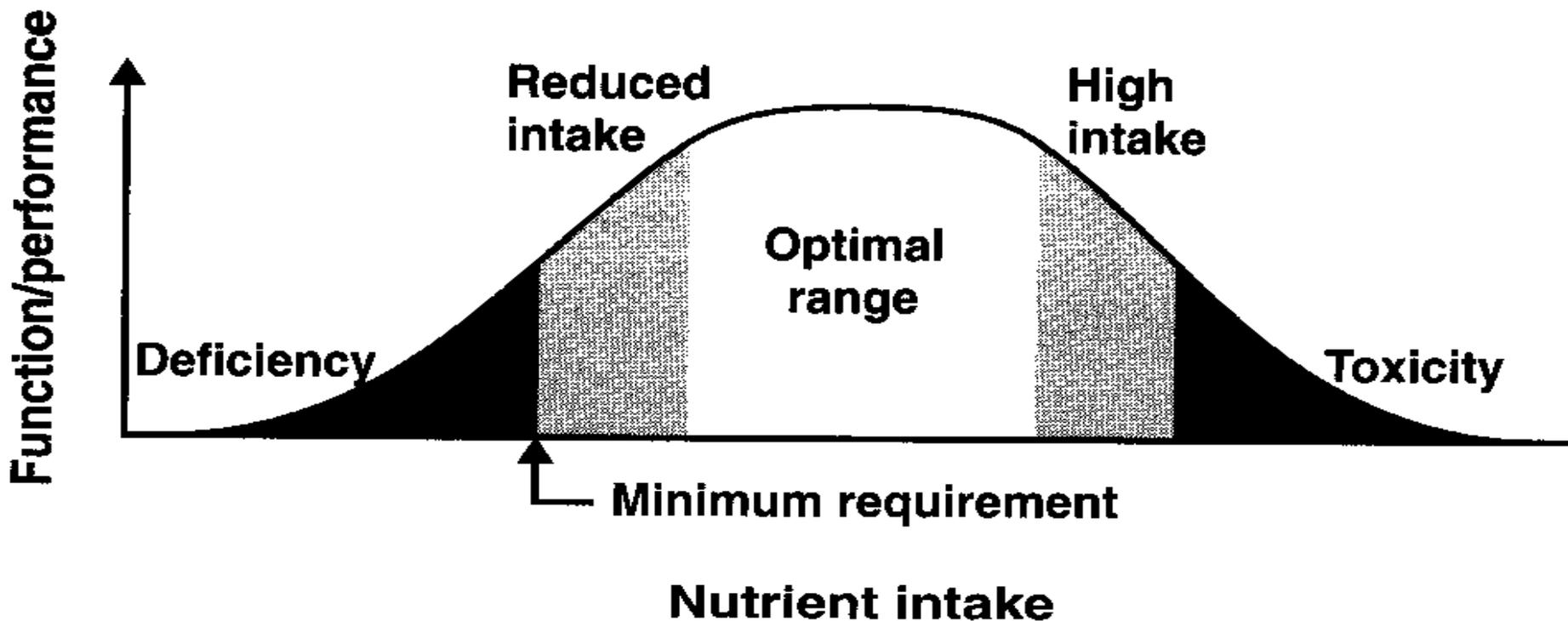
Nutrient requirements of dogs and cats



Range of energy distribution in typical, complete dog foods



Range rather than single figure as optimum intake of nutrients



Trend toward natural dog nutrition

Basis

- Desire for back to nature
- Natural is considered equal to health
- Natural as claim is easily understood
- Petfood recalls

Facts

- Sales of natural petfoods are increasing rapidly
- Natural is most commonly used claim

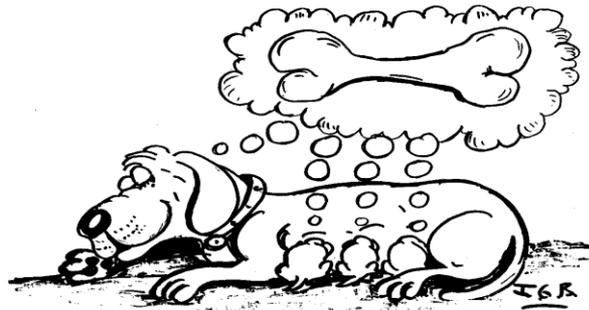


BARF movement: booster of the natural trend

GROW YOUR PUPS WITH BONES

DR. IAN BILLINGHURST

B.V.Sc.[Hons], B.Sc.Agr., Dip.Ed..



The BARF Programme
For Breeding Healthy Dogs
And Eliminating Skeletal Disease

Natural dog nutrition and grains

- The notion of natural is not well defined, but one common trait is rejecting cultivated grains and favoring grain-free foods
- Grain-free foods can provide good nutrition for dogs, but rejecting grains with use of false arguments would be deceit

Most regular dry foods contain 50-70% grains in the form of wheat, corn, barley and/or rice



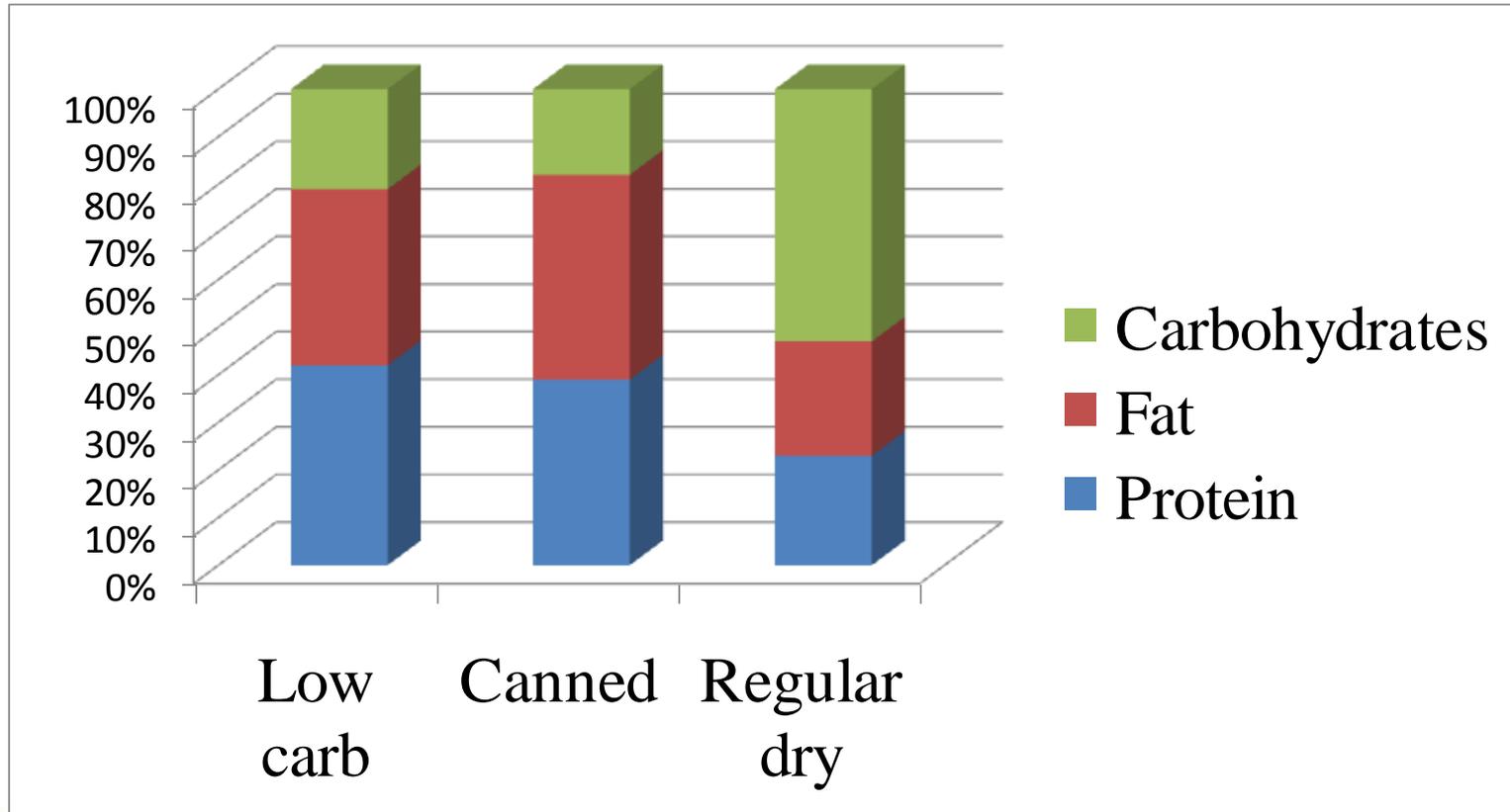
Proximate starch content of various (pseudo)grains

Starch content, % as is			
Buckwheat	74	Rye	54
Rice, polished	71	Spelt, de-hulled	54
Sorghum	63	Millet	54
Corn	62	Quinoa	52
Wheat	59	Wild rice	51
Oats, de-hulled	57	Barley	51
Amaranth	55		

Responses of dry-food manufacturers to anti-grain sentiments

- No-wheat and/or no-corn foods
- Grain-free foods containing potato or cassava as starch source
- Grain-free/starch-free, low-carbohydrate, high-protein foods (low-carb foods)

Range of energy distribution in typical, complete dog foods



Generally used arguments against grains: 1-3

- “Dogs are carnivores not designed to consume and utilize grains”
- “Grains are not part of the natural canine diet”
- “Dogs cannot digest the starch in grains”



Generally used arguments against grains: 4-6

- “Dogs have no nutritional need for carbohydrates, including starch”
- “Grains serve as filler”
- “Grains cause diseases such as food allergy, obesity, diabetes, osteoarthritis and cancer”



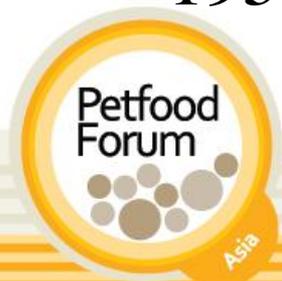
“Dogs are carnivores not designed to consume and utilize grains”

Dogs are not strict carnivores

- Retinol, taurine and arachidonic acid are not essential nutrients
- Low protein requirement

Dogs willingly accept grain-containing foods and thrive on them

- Grain-based dry foods are successfully fed since the 1950s



“Grains are not part of the natural canine diet”

- What is the natural canine diet?
- In the nutritionist’s approach the adjective natural is irrelevant

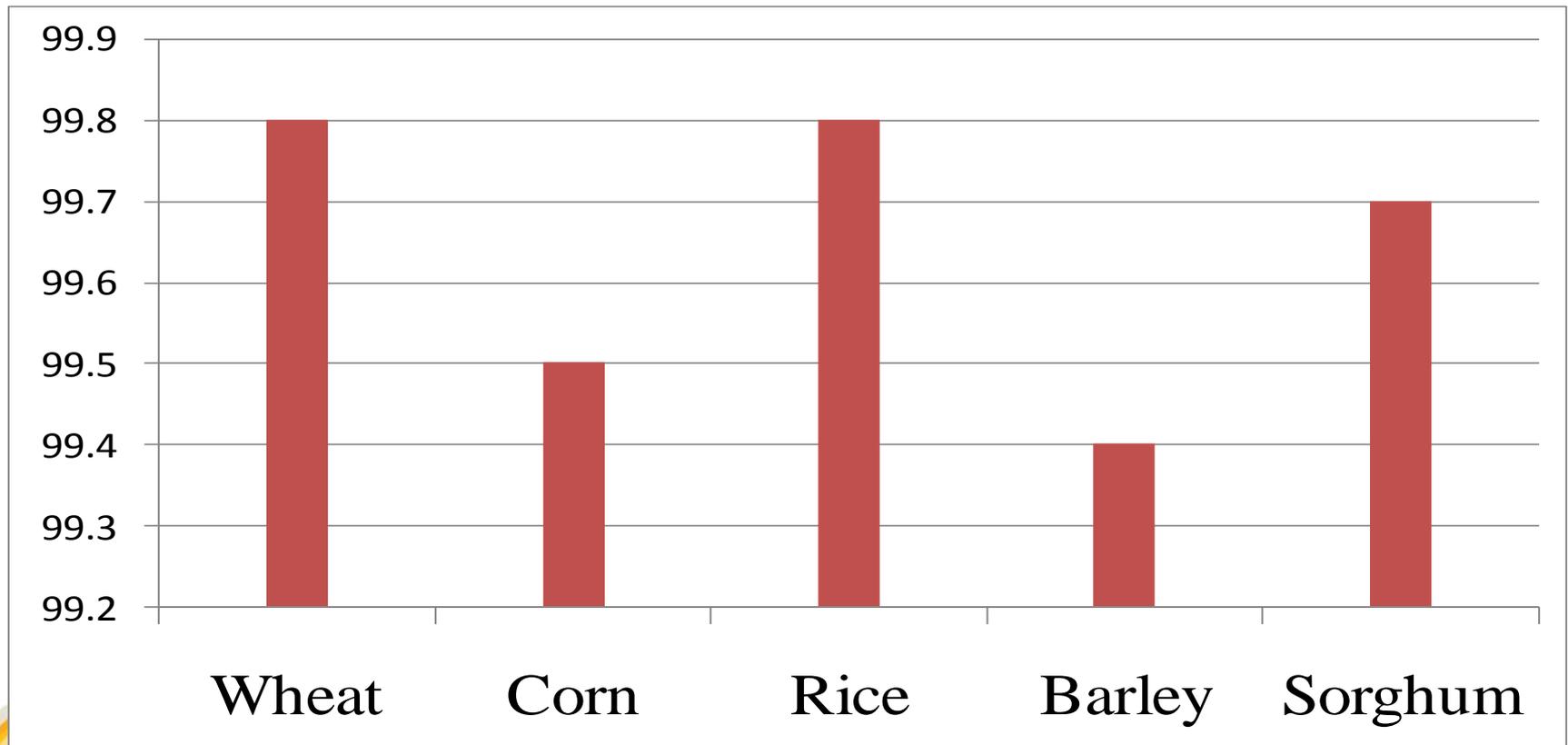


“Dogs cannot digest the starch in grains”

- Dogs produce sufficient pancreatic amylase and mucosal maltase and isomaltase
- Dogs can efficiently digest and absorb starch in the form of ground and cooked grains



Efficient ileal starch digestion (>99.4%) in dogs fed extruded diets containing various grain flours (Murray et al., 1999)



Dogs differ genetically from wolves in relation to starch digestion

LETTER

doi:10.1038/nature11837

The genomic signature of dog domestication reveals adaptation to a starch-rich diet

Erik Axelsson¹, Abhirami Ratnakumar¹, Maja-Louise Arendt¹, Khurram Maqbool¹, Matthew T. Webster¹, Michele Perloski², Olof Liberg³, Jon M. Arnemo^{4,5}, Åke Hedhammar⁶ & Kerstin Lindblad-Toh^{1,2}



How valid and specific is the genetic argument for starch digestion by dogs?

- Do wolves indeed have low digestion of cooked starch in the small intestine?
- Cats show adequate (72%) ileal digestion of cooked, corn starch (Kienzle, 1993), but are considered more carnivorous than dogs and wolves

“Dogs have no nutritional need for carbohydrates, including starch”

- Healthy dogs can indeed be fed on a carbohydrate-free diet, but protein intake must be greater than the recommended allowance
- Both carbohydrate-free and grain-containing, high carbohydrate diets can provide adequate nutrition

“Grains serve as filler”

- Grain is not an inert or valueless ingredient
- Grains provide starch as energy source and protein-sparing nutrient
- Grains contribute to total protein in the diet

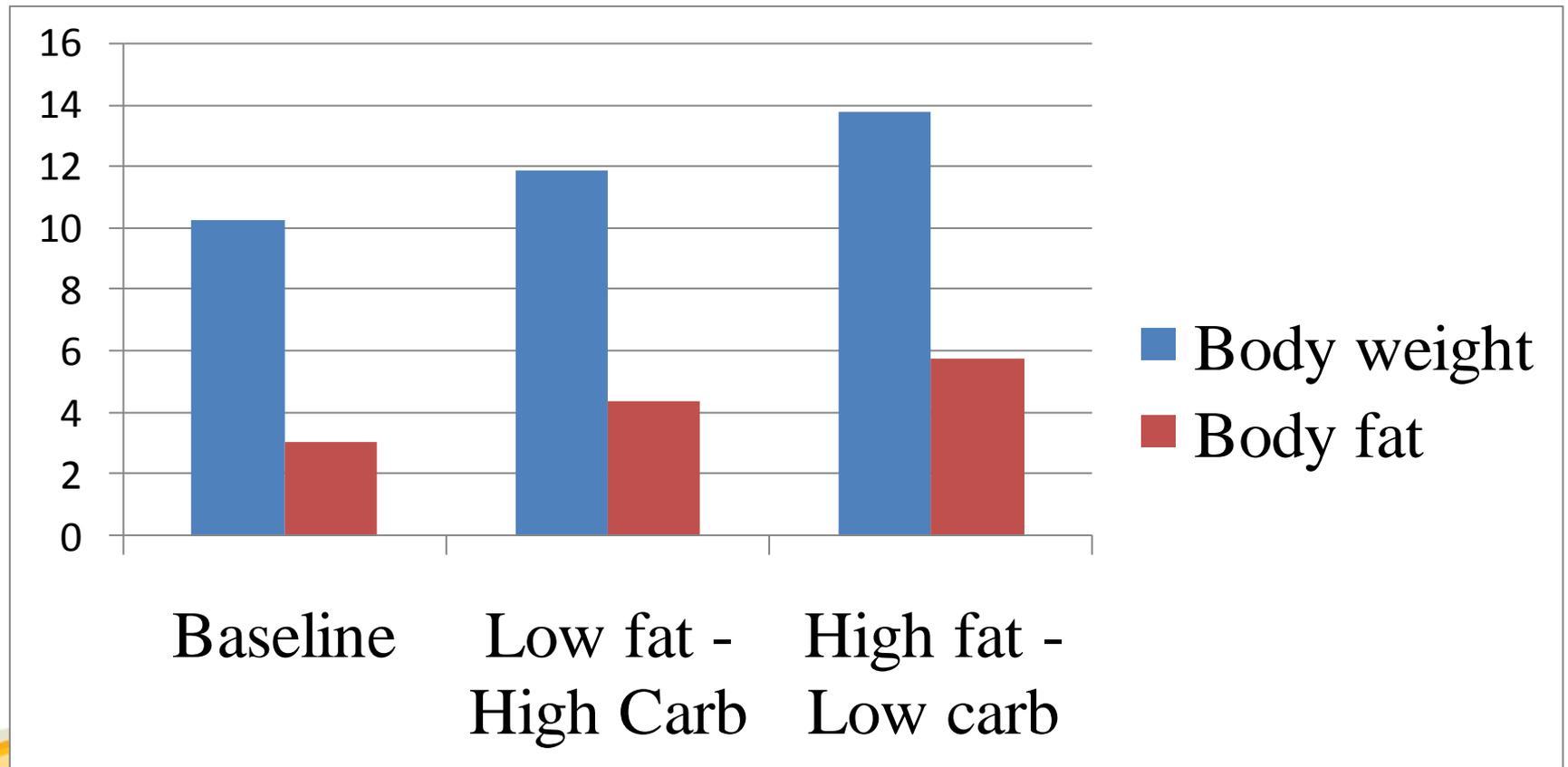


“Grains cause diseases such as food allergy, obesity, diabetes, osteoarthritis and cancer”

- Corn and rice rarely induce allergic reactions; wheat is as allergenic as beef
- No evidence that grains increase the risk of obesity, diabetes, osteoarthritis and cancer



Dietary fat rather than starch causes obesity in adult dogs fed ad libitum (Romsos et al., 1978)



Gluten intolerance in dogs: an inflated issue

- Gluten-containing grains: wheat, barley
- Gluten enteropathy has only been shown in certain families of Irish Setters



Petfood labels: Not all grains are valued equal

- Absence claims: grain free, no wheat, no corn
- Part of food's name: rice, barley, oats, spelt, millet, wild rice, quinoa
- Highlighted as ingredient: sorghum, buckwheat, amaranth
- Latent ingredient: rye

Barley in product's name



Spelt in product's name



ADULT POULTRY & SPELT is for dogs with normal activity levels.

With its special recipe, **ADULT POULTRY & SPELT** has all the positive characteristics of poultry

The energy and protein content in conjunction with mussel extract protect the cartilage and joints.

ADULT POULTRY & SPELT is a

- protein of the highest c

Millet in product's name

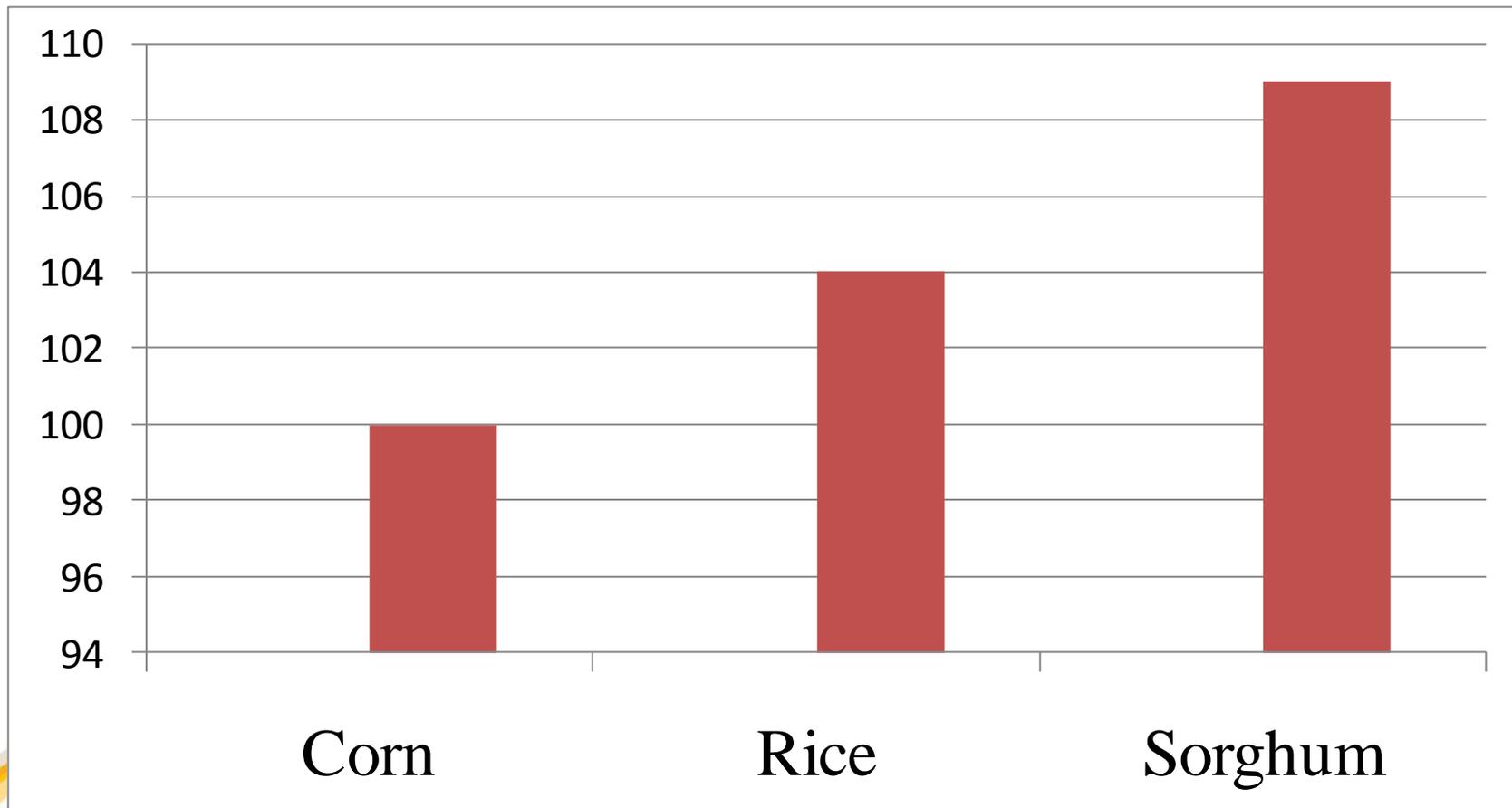


Arguments used to recommend specific (pseudo)grains

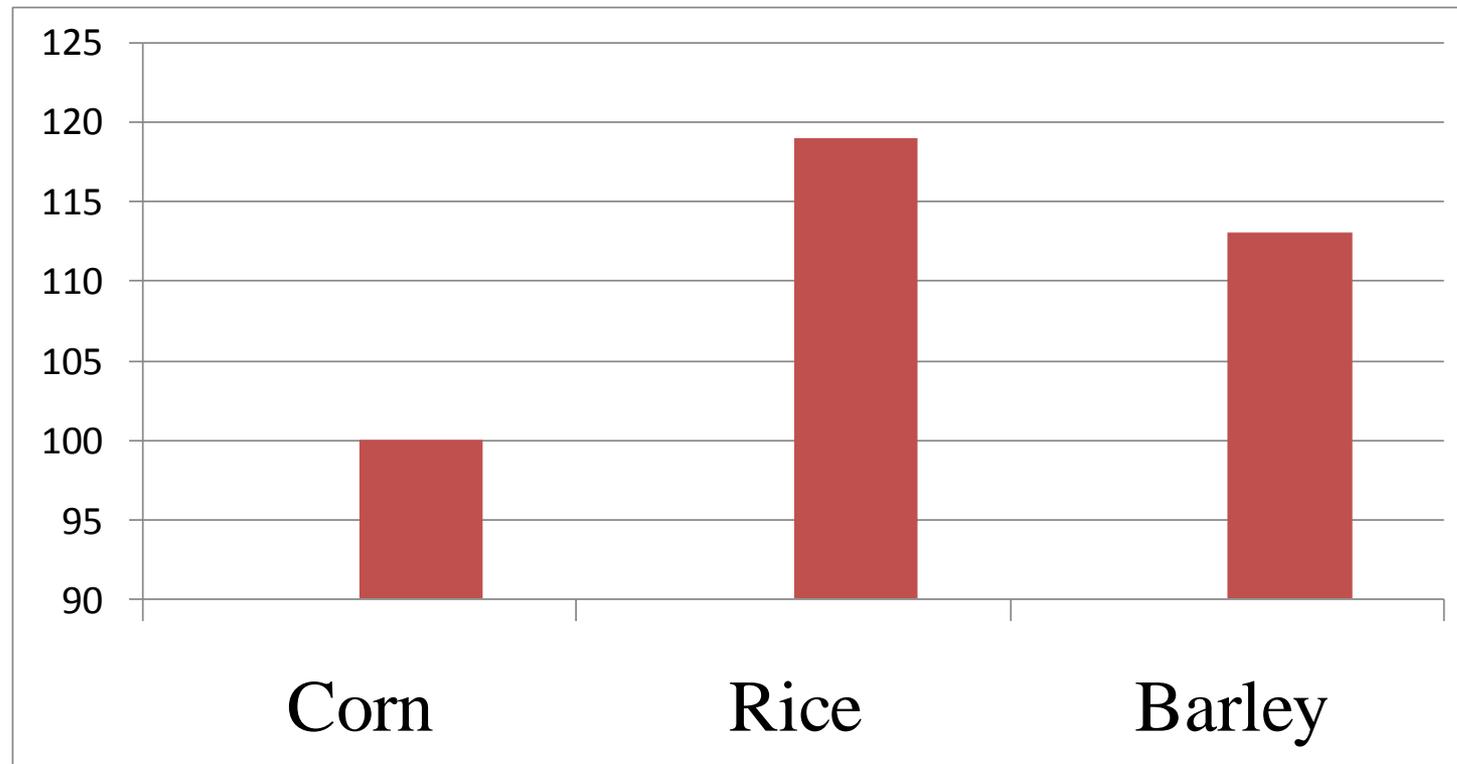
- Beneficial for human health (super food)
- Natural, ancient, not cultivated
- Gluten free
- Low glycemic index
- Hypoallergenic
- Presence of immune-enhancing betaglucans
- Rich in certain nutrients, anti-oxidants or prebiotics
- Non-GMO



Glycemic index for iso-starch, extruded foods consumed as 10-min meal (Carciofi et al., 2008)



Glycemic index for iso-available-carbohydrate, starch pastes (Aldolphe et al., 2012)



Oat betaglucans may enhance immunity

Scandinavian Journal of Gastroenterology, 2011; 46: 603–610

informa
healthcare

ORIGINAL ARTICLE

***In vivo* effects of dietary (1→3), (1→4)- β -D-glucans from oat on mucosal immune responses in man and mice**

JULIA J. VOLMAN¹, RONALD P. MENSINK¹, WIM A. BUURMAN² & JOGCHUM PLAT¹



PetfoodIndustry

WATT GLOBAL
MEDIA

Oat betaglucans may enhance resistance against infections



FEMS Immunology and Medical Microbiology 35 (2003) 67–75

FEMS
Immunology and
Medical Microbiology

www.fems-microbiology.org

β -Glucan, extracted from oat, enhances disease resistance against bacterial and parasitic infections

Cheol-Heui Yun ^{a,1}, Alberto Estrada ^a, Andrew Van Kessel ^a, Byung-Chul Park ^{b,2},
Bernard Laarveld ^{a,*}



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Conclusions

- Grains are suitable ingredients for dog foods, but are not essential
- Grain-specific health claims are not (yet) substantiated by adequate research data