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# **Importance of supporting the Dairy products with probiotic**

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

( وَقُلْ اَعْمَلُوا فَسَيَرَى اللَّهُ  
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## الاهداء

اهدي هذا العمل المتواضع الى:

- الوالدان حفظهما الله.

- والى كل فرد من اسرتي

- والى كل من ساهم في تلقيني ولو حرف في حياتي الدراسية.

- والى كل الأصدقاء ومن كانوا برفقتي ومصاحبتي اثناء دراستي في الجامعة.

- الى زوجي الغالي والى ابني فلذة كبدي.

الشكر والتقدير

اول شكر اتقدم به الى الله عز وجل واحمده على ما وصلت اليه من  
معارف تمكيني ان شاء الله من بلوغ اعلى درجات العلم ....

أتقدم بالشكر الخاص الى الدكتور ( محمد عبد العباس ملاغي) الذي تفضل  
مشكوراً بالإشراف على هذا البحث، فقد كان لي الأستاذ والمرشد لما قدمه  
من توجيهات واءاء علمية قيمة وعلاقة إنسانية طيبة، اسأل الله ان يمن  
على الجميع بالصحة والعافية والعمر المديد وان يسدد خطاهم.

كما أتقدم بشكري الجزيل وامتناني الى كل من ساعدني ومد لي يد العون  
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## اقرار المشرف على البحث

اشهد ان اعداد هذا البحث تم تحت اشرافي في كلية الطب البيطري/  
جامعة القادسية كجزء من متطلبات نيل درجة البكالوريوس في الطب  
والجراحة البيطرية.

المشرف

م. محمد عبد العباس ملاغي

## **Abstract**

The appearance of bacteria resistant to the action of antibiotics and natural methods to suppress and prevent diseases, the trend towards probiotic, using microbial species to stop, inhibit and reduce unhealthy fermentation in the human intestines, as well as activation of fermentation, which offers many health effects in order to improve human health and prevention against diseases.

It is known as microbial with beneficial effect on consumers, most of these compounds come from the organisms known microorganisms such as lactic acid-producing bacteria that are naturally consumed in the form of yogurt or fermented milk or other fermented foods, and the lactic acid that is benefit for human consumption are some species of genus *Lactobacillus*, *Bifidobacterium*, *Streptococcus*, *Enterococcus*.

The mechanism of these bacteria is not well known but may affect the pH of the medium and the effect on pathogenic microbes through the production compounds have versus effect, such as some types of Bacteriosin as it they compete with pathogenic bacteria on food and bind to the intestinal cells to prevent pathogens from entering them. Also activate the human immune system and increase the activity of macrophage which gulps the bacteria receiving cells pathological and foreign cells in the body. The dairy products have been diversified from yogurt and other biological products, as well as different kinds of cheese and dried milk. These products have varied according to the type of bacteria used in its production.

Therefore, we will discuss in this research the most important products and types of beneficial or friendly bacteria responsible for the effect of its.

الخلاصة

مع ظهور البكتيريا المقاومة لفعل المضادات الحيوية والطرق الطبيعية لإخماد ومنع الأمراض ظهر الاتجاه إلى التدعيم الحيوي وذلك باستخدام الأجناس الميكروبية المنوطة بوقف وتنشيط وتقليل التخمرات غير الصحية في أمعاء الإنسان وكذلك المنوطة بتنشيط التخمرات التي تقدم أثار صحية عديدة بهدف تحسين صحة الإنسان ومناعته ضد الأمراض.

تعرف كداعمات ميكروبية مع تأثير مفيد على المستهلكين ومعظم هذه المركبات تتحدر من مجموعة الكائنات الحية الدقيقة المعروفة مثل البكتيريا المنتجة لحامض اللاكتيك والتي تستهلك طبيعياً على شكل زبادي أو اللبن مخمرة أو أغذية مخمرة أخرى، وبكتيريا حامض اللاكتيك الداعمة حيوياً للاستهلاك البشري هي بعض الأنواع التابعة لأجناس

*Lactobacillus, Bifidobacterium, Streptococcus, Enterococcus*

ميكانيكية الفعل الداعم للحوية لهذه البكتيريا ليست معروفة بشكل كبير ولكن قد يتضمن التأثير على (pH) الوسط والتأثير على الميكروبات المرضية من خلال إنتاج مركبات لها تأثير مضاد مثل بعض أنواع البكتريوسرين كما أنها تقوم بمنافسة البكتيريا المرضية على الغذاء وتلتصق بخلايا الأمعاء لمنع دخول البكتيريا المرضية فيها.

التي تبتلع البكتيريا وتقوم كذلك بتنشيط جهاز المناعة في الإنسان وزيادة نشاط الخلايا المتلقمة Macrophage المرضية والخلايا الغريبة في الجسم. ولقد تنوعت منتجات الألبان الداعمة للحوية بدءاً من الزبادي والمنتجات الحوية الأخرى وكذلك الأجبان بأنواعها المختلفة والألبان المجففة كما تنوعت هذه المنتجات تبعاً لنوع البكتيريا الصديقة المستخدمة في إنتاجه.

لذا سنتطرق في هذا البحث الى اهم هذه المنتجات وانواع البكتيريا النافعة او الصديقة المسؤولة عن احداث التأثير الداعم للحوية.



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## **Introduction**

The word probiotic is a term come from Greek word which meaning (for life) and it is presently used to name bacteria associated with useful effects for humans and animals, probiotics are microbial dietary supplements that, when introduced in suitable quantities, positively influence the health mainly by improving the conformation of intestinal microbiota for this reason, they are called probiotics (Sharma *et al*,2012).

Probiotics were originally used to improve the health of both animals and humans by the modulation of the intestinal microbiota, there are several strains of lactobacillus, bifidobacterium, streptococcus and enterococcus available for human use to minimize the risk of gastrointestinal infections or treat such infections (Salminen *et al.*, 2005).

Attention the role of probiotics for human health began at 1908 when Metchnikoff associated the intake of fermented milk with prolonged life (Lourens-Hattingh and Viljoen,2001).

There are an increasing concern in probiotic foods, which has encouraged invention and development of new products around the world. Probiotic bacteria have progressively been combined into foods in order to develop gut health by maintaining the microbial gastrointestinal equilibrium, probiotic are produced in the dairy industry because

fermented dairy products have been shown to be the most effectual supply vehicle for live probiotics to date. New scientific advances have been found to have supported the important role of probiotic prophylactic bacteria as part essential in the food of the human as well as animal meal and have wide areas of safety and economic viability and nutrition (Parvez, *et al.*,2005).

## **2-Literature Review**

### **2-1 Definition of Probiotics:**

Probiotics can be defined as live microbial food components that have a useful result on human health (Salminen *et al.*, 1998). FAO/WHO defines it as live microorganisms which if given in suitable amounts cause a health benefit on the host.

### **2-2 Action of Probiotics:**

Theories of probiotics actions mechanisms are incompletely understood. In a general rule can be have (Sartor, 2004)

- ☐ Adhesion and occupation of the gut
- ☐ Destruction of growth or epithelial binding by pathogenic bacteria and making of antibacterial substances
- ☐ Improving of intestinal wall function
- ☐ Controlled transfer of dietary antigens
- ☐ Incentive of mucosal and systemic host immunity.

## 2-3 Composition of probiotic preparations:

The main generally microorganisms which used in probiotic preparations are the lactic acid bacteria, which found in vary numbers in the gut of healthy animals, organisms other than lactic acid bacteria, which are used in probiotic preparations, include *Bacillus* sp., yeasts (e.g. *Saccharomyces cerevisiae* and *Saccharomyces boulardii*) and filamentous fungi (e.g. *Aspergillus oryzae*). Probiotic products are now found in various formulations with *L. acidophilus*, *Bifidobacterium longum*, *Bifidobacterium infantis*, *Enterococcus faecium* and others with or without probiotic and fructooligosaccharides (FOS) and the most important Lactic acid bacteria commonly used as a vital supporter of human consumption are:

*Lactobacillus* sp (*L.delbrueckii subsp. Bulgarianus*, *L. acidophilus*, *L.plantarum*, *L.reuteri*, *L.casei* and *L.brevis*)

*Bifidobacterium* sp. (*B.bifidum*, *B.thermophilus*, *B.longum*, *B.adolescentis*, *B.infantis* and *B. Animalis*).

*Streptococcus* sp. (*Str.salivarius*, *Str.cremoris*, *Str.diacetylactis* and *Str.intermedius*)

*Enterococcus* sp. (*Ent.faecalis* and *Ent.faecium*) (Parvez et al,2006).

## **2-4 Probiotic effects:**

### **2-4-1- Overcome the weak absorption of milk sugar (lactose malabsorption):**

Malabsorption and lactation of the milk sugar (lactose) is caused by a decrease, weakness or loss of appropriate enzymatic activity digestion of  $\beta$ -galactosidase in the gastrointestinal tract of the human, leading to gastrointestinal tract, it is known that residues of lactose sugar in fermented milk can stimulate probiotic bacteria to production of  $\beta$ -galactosidase enzymes as well as reducing the sensitivity to the lactose (Savaiano *et al.*,1984). World Gastroenterology Organization (2008) provided guidelines on how to use them bacteria such as *St. thermophilus* and *Lactobacillus delbrueckii subsp. Bulgarianus* improved the digestion of lactose and reduced the sensitivity of the lactose intolerance to a number of comparative studies were conducted with individuals who took yoghurt supported by bacteria.

### **2-4-2 Contradiction with intestinal infection:**

Some of researches have proved that dairy consumption containing *Lac. acidophilus* and Bifidobacterium ssp were a very effective way to stop many Candida activities (Tomodda *et al.*, 1983) and also affected the diarrheal activity of antibiotics (Nugent, 1999). Colombel *et al.* (1987)



Who were reared with a center containing bifidobacterium bacterium, yogurt and antibiotic Erythromycin resulted in a significantly lower number of clostridium in patients compared with patients who have been infected with antibiotics only (Mc Farland *et al.*, 1994). Proposed mechanism protection provides anti-microbial agents and formulations toxins in the sites are configured to increase immunity and weaken poisoning as well as reduce pH in the channel gastrointestinal glands, and decomposing glomerular adhesion sites (Fooks *et al.*, 1999).

#### **2-4-3 Suppression of Cancer:**

Colon cancer is the second largest cancer loophole in western countries Age-related increases in the risk of colon cancer increase with age, laboratory and animal biopsies have shown that dairy products supported by probiotic bacteria can prevent cancers by reducing the incidence of DNA carcinogen-generating cancer (Stanton *et al.*, 2001).

This mechanism can be summarized by following:

- 1- Immune system stimulation.
- 2- Breaking of carcinogenic compound
- 3- Reduce the number of pathogenic bacteria and thus carcinogenic metabolism compounds.

4- Physio-chemical conditions change in the colon and thus reduce the chance of carcinogenic material formation.

5- Inhibition of carcinogenic compounds in the intestine.

#### **2-4-5 Minimize coronary heart disease:**

There is a relationship between the levels of cholesterol in the plasma and the severity of deadly heart crises, (Shavasma *et al*, 1998) reported that daily feeding at a rate of (152) ml of probiotic milk worked to reduce the level of cholesterol in the serum as well as total cholesterol and the fact that the truth was supported from previous research by ( Agirbeck *et al.*, 1995) and subsequent observations by researchers (Pereira and Gibson 2002). Some researchers also found that some of the friendly bacteria which belong to bifidobacterium sp. were converted cholesterol to coprostanol and other compounds therefore decreases blood cholesterol and also found that yoghurt reduces the cholesterol.

#### **2-4-6 Nutritional effects:**

The fermented food content is somewhat different from the raw milk, produced fermentation processes promote degradation of the protein, which increases the vitality of the body and the ability of the body to digest protein and these products are used in internal feeding for food support health in some diseases (Bengmark, 1996).

#### **2-4-7 Immune stimulation:**

It is one of the most important tasks of action food that is biologically supportive to the immune system the human test has been fed (54) cases on (420) grams of yogurt daily for four months showed we have increased the level of production of the  $\gamma$ -Interferon immune system (Halpern *et al.*, 1991).

#### **2-4-8 Reduction infection:**

Researches showed that probiotic products showed a reduction in infection and post-traumatic stress disorder, the use of antibiotics reduces the number of beneficial intestinal bacteria and resistance to diseases where probiotic are reproduced beneficial bacteria into the gastrointestinal tract and also boost beneficial bacteria which prevention of Infections

( Algrawal, 2005).

#### **2-4-9 Blood Pressure Regulation:**

Jauhiainen and Korpela (2007) reported that human consumption of milk fermented by bacteria helps to reduce the blood pressure of the some adults and showed that clinical studies that proteins in fermented milk decomposes into small peptides and absorbs the peptide in the intestine thus reducing the blood pressure.

## **2-5 Properties of probiotic strains:**

Probiotic bacteria are particularly desirable and necessary, such as maintaining their vitality and effectiveness during treatment and storage, as well as ease of application when producing products as well as resistance to physico-chemical treatments (Prado et al., 2008). It is also concluded that the bacteria are not pathogenic, toxic, carcinogenic to human and it is considered to act as no pathogenic and does not have the mechanism of transmission in the plasma ,especially with respect to antibiotic resistance, it is presumed to remain alive and adhesion and colonization of the mucous pathway of the digestive system and increased immunity without irritation (Saarela and Others2000).

Many scientific references required that any microbial strain that is supportive of vitality should not be challenged, However, it is important to obtain a large percentage of the microbes to be found in the intestines so that they can neutralize the balance in the sense that the predominance of those useful strain on other undesirable (Ouwehand *et al.*, 1999) and suggested the following terms:

- 1) Resistant to high acidity.

- 5) Resistant to digestive enzymes and digestion products.
- 3) Resistant to antibiotics.
- 4) Resistant to bile salts.
- 2) The ability to produce volatile fatty acids
- 6) It should be safe and does not have side effects and does not affect intestinal permeability
- 2) Adhesion to the mucosa of the intestine.
- 8) The ability to retain its vitality in food, which is used as (carrier).
- 9) The ability to alert and activate the immune system.

## **2-6 Mechanism of probiotic action:**

### **2-6-1 Biochemical effects:**

There is one mechanism reaction to the biocompatibility microbes in the biochemical units is known to inhibit or reconcile pathogenic microbes produced by Bacteriocins (Meghroun *et al.*, 1990). Gibson and Wang (1994) have suggested that some bifidobacteria inhibits various strains of bacteria, the pathogen is due not only to the pH effect but also to the fact that *Bifidobacterium bifidum* produced bacteriocins which cause inhibition of *Bacillus*, *Enterococcus*, *Listeria*. The study conducted by

Kheadr *et al.* (2002) shows that samples of yogurt containing *Bifidobacterium bifidum* inhibited both pathogenic bacteria *Pseudomonas aeruginosa* , *Staphylococcus aureus*, *Echerichia coli* and *Bacillus subtilis*.

### **2-6-2 Competition for nutrients:**

Competition for nutrients improves our vital action and thus excludes substances that prevent growth of other pathogens.

### **2-6-3 Immune effects:**

Medications have shown that consumption of probiotics-containing foods decreases of the incidence of infectious disease as a result of the activation of the immune system in humans biofood works to stimulate natural immunity It has been found that human nutrition on fermented milk contains probiotic for three weeks increased the activity of macrophages and was found that the process of fermentation leads to the production of active peptides stimulating the development of the immune system, Also (Arunachalam and Gill, 2000) giving (13) volunteers a diet supported by a probiotic *Bifidobacterium lactis* and increased activity in the normal immune system, increasing the efficiency of phagocytosis which are performed by the immune system, the process of neutralizing pathogenic bacteria and foreign objects comparative sample (control).

## **2-6-4 Adhesion and attraction of intestinal**

### **cell(Colonization):**

The ability of beneficial bacteria to adhere to epithelial cells of the intestine is considered to be one of the most common traits to be found stimulate the bacteria when you choose to manufacture the food, agar or bio-adhesion leads to prevent the adhesion of bacteria intestinal pathogens such as *E. coli* and *Salmonella typhimurium* (Blanchette *etal.*,1996).

## **2-7 Probiotic dairy products:**

### **2-7-1- Probiotic yoghurt (Bio-yoghurt):**

Biogard starters, which contained *Streptococcus salivarius subsp. Thermophilus*, *Lactobacillus acidophilus* and *Bifidobacterium bifidum*, were suggested for use by Kiswa et al. (1978) and were followed by many successful attempts The combinations of *Bifidobacterium bifidum* supplementation, followed by bacterium *Lactobacillus acidophilus* to yogurt initiators led to the development of yoghurt from flavored flavored and bio-use Specialist (Rasic and Kurman,1983).

### **2-7-2 Bifidus yoghurt :**

It is one of the most important food products produced in Germany, America, Japan, France and many

more countries of the world, The initiator of a mixture of standard yogurt *Streptococcus thermophilus*, *Lactobacillus delbrueckii ssp bulgaricus* and *Bifidobacteria* bacteria such as *Bifidobacterium Bifidum* or *Bif. Longum*.

### **2-7-3 Bifidus Acidophilus yoghurt:**

In this type, the friendly bacteria, *Bifidobacteria* and *acidophils*, are added to normal yogurt bacteria and are characterized by resulting acidic taste is mild and can be improved by adding different loaves of fruit and is called in France as (*Ofilus*).

### **2-7-4 Therapeutic dairy containing Bifidobacteria:**

#### **2-7-4-1 Bifidus milk:**

It is made using bacterium *Bifidobacterium bifidum* and sometimes *Bifidobacterium longum*. It is manufactured in some European countries and is used as treatment more often in fermented milk. It is used in the treatment of gastrointestinal disorders and rebalance the natural microflorae after treatment with antibiotics.

#### **2-7-4-2 Bifidus-thermophilus milk:**

Known in Germany as (*Bifighurt*) and added to it by the initiates of bacteria friendly *Bifidobacterium longum* *Streptococcus thermophilus*. It



is used in the treatment of gastrointestinal disorders caused by ingestion antibiotics.

### **2-7-5 Therapeutic dairy containing lactobacillus:**

#### **2-7-5-1 Acidophilus milk:**

It is spread in America and is characterized by its refreshing and has a protective and curative properties and is made using the *lactobacillus acidophilus* initiator and its acidity is light and the bacteria can survive in it for (1-2) weeks.

#### **2-7-5-2 Acidophilus yeast dairy:**

It spreads in Russia and is used in the manufacture of *Lactobacillus acidophilus* and fermented yeast for lactose and used for gastroenteritis and tuberculosis.

#### **2-7-5-3 Arla acidophilus milk:**

It is produced by Arla in Suisse on its behalf and is supported by soybean oil, skim milk and vitamins.

### **2-7-6 Therapeutic Dairy containing Bifidobacteria and Lactbacilli:**

#### **2-7-6-1 Bifido acidophilus dairy:**

The product in Denmark is known as( cugtura) , which is made by fermentation of high milk in a ratio protein (added to the skim milk) and is tested with the bacterial bacteria *Lactobacillus acidophilus*, *Bifidobacterium bifidum* and there is a similar product in Japan called (Mil-Mil ) added to the past - *Bif. breve* is also added to glucose for the absorption of sweet taste and carrot juice to give it a distinctive color.

#### **2-7-6-2 Bifido acidophilus thermophilus dairy:**

This type of the fermented dairy is obtained by fermenting the milk using a primer consisting of bacteria *Lactobacillus acidophilus*, *Bifidobacterium bifidum* and *Streptococcus thermophilus* is called the (Biograde) culture.

#### **2-7-6-3 Bifido acidophilus Pediococcus dairy:**

The product is known in some countries such as Czech and Slovakia as (Bikys) and is obtained by fermentation milk using a mixed culture contains a mixture of friendly bacteria *Bifidobacterium Bifidum*, *Lactobacillus acidophilus* and *Pediococcus acidilactici* bacteria. The product characterized by a mild acid flavor with texture is similar to that of sour cream.

### **2-8 Probiotic Cheeses:**

#### **2-8-1 Probiotic cheddar cheese:**

Dry cheeses such as cheddar that need to be settled for a long period of up to two years are therefore recognize for yogurt, low acidity, good texture, and a high level of lubrication and nutritious flavor may provide protection for the carburetor. Gardinar *et al* (1998) followed the vitality of some supporting strains which include *Lactobacillus salivarius* and *Lb. paracasei* when manufacturing cheddar cheese for more than six months, the cheese retained the required levels of vitality, leaving the total settling period which amounted to eight and a half months at (8) ° C.

### **2-8-2 Probiotic brined cheese:**

The spread of salty white cheese among many of the world's nations, especially those of the Middle East and the Balkans, was possible use a mixture of yogurt bacteria and *Bifidobacterium bifidum* bacteria to get rid of the loin of the cheese is called Probiotic brined cheese.

### **2-8-3 Probiotic cottage cheese:**

This cheeses are made using tactic acid bacteria as well as some friendly bacteria Bifidobacteria, which is characterized by a hygienic features, the presence of bifidobacterium in cheese inhibits the growth of some bacterial belong to *Pseudomonas* causing corruption cheeses.

### **2-9 Dried probiotic dairy product:**

Initial attempts to prepare the pro-active milk were encouraging to improve it, Nagawa *et al.*, (1988), in an attempt to maintain the preserve for long period , the Bifidus fermented milk was dried using the freeze-drying method other recent studies (Desmond *et al.*, 2002) have concluded a trend to an extent and improved resilience *Lactobacillus paracasei* when drying fermented milk containing spray-drier The product was used as an additive in the manufacture of probiotic cheddar cheese (Gardiner *et al.*, 1998).

### **3- Conclusions and Recommendations:**

#### **3-1 Conclusions:**

1-Probiotic products are supportive of vitality some of the benefits that are beneficial to the consumer are affected by the improving intestine vitality.

2- It competes with the pathogenic bacteria in the food, activation macrophage and stimulation of immune system, also increase resistant of some diseases, decrease lactose sensitive and microbial balance is a free-grained antacid counting and regulating the blood pressure in the body, therefore, some researchers see the end of the era of the antibiotic and start therapeutic food.

### **3-2 Recommendations:**

1-Advice public and private sector companies working in the field of dairy products to strengthen their current products with probiotic bacteria.

2- Conducting seminars and awareness campaigns on all media to educate consumers about the benefits and importance - medical therapeutic products.

3- Make recommendations to the government that these products should be adopted as basic meals for school students, in hospitals as well as workers in their factories.

## **4- References:**

**Agerback, M. ; Gerdes, L. U. and Richelsen, B. (1995).**

Hypocholesterolaemic effect of a new fermented milk product in healthy middle-aged men. *European J. of Clinical Nutrition*, 49: 346-352.

**Agrawal, R. (2005).** Probiotics: an Emerging Food Supplement with Health Benefits. *Food Biotechnology*, 19:227-246.

**Arunachalam, K. and Gill, H. S. (2000).** Enhancement of natural immune function by dietary consumption of *Bifidobacterium lactis* (HNO19). *Eur. J. Clinical Nutrition*, 54: 263-267.

**Bengmark, S. and Gianotti, L. (1996).** Nutritional support to prevent and treat multiple organ failure. *World J. Surg.* 20: 474–481.

**Blanchett, L. ; Roy, D. B. ; Langer, G. and Gauthier, S. (1996).**

Production of cottage cheese using dressing fermented by *Bifidobacteria*. *J. Dairy Sci.*, 79:8-15.

**Colombel, J.F.; Corot, A. ; Neut, C. and Romond, C. (1987).**

*Bifidobacterium longum* reduces erythromycin-induced gastrointestinal effects. *Lancet*, 2:43.

**Desmond, C. ; Stanton, C. ; Fitzgerald, G.F. ; Collins, K. and Roos, R.**

**P. (2002).** Environmental adaptation of probiotic lactobacilli toward improvement of performance during spray drying. *Int. Dairy J.*, 12: 183-190.

**Fooks, L.J. ; Fuller, R. and Gibson, G.R. (1999).** Probiotics, probiotic and human gut microbiology. *International Dairy Journal*, 9:53-61.

**Gardiner, G. E. ; Roos, R. P. ; Collins, K. ; Fitzgerald, G.F. ; and**

**Stanton, C. (1989).** Development of probiotic cheddar cheese containing

human derived *Lactobacillus paracasei* strains. *Applied and Environmental Microbiology*, 64:2192-2199.

**Gibson, G. R. and Wang, X. (1994).** Regulatory effects of *Bifidobacteria* on the growth of other colonic bacteria. *J. of Applied Bacteriology*, 77:412-420.

**Halpern, G.M. ;Vruwink, K.G. ; Van de Wter, J. ; Keen, C. L. and Gershwin, M. E. (1991).** Influence of long-term yoghurt consumption in young adults. *International J. of Immunotherapy*. 7:205-210.

**Jauhiainen, T. and Korpela, R. (2007).** Milk Peptides and Blood Pressure. *The Journal of Nutrition*, 137 (3S), 825S – 829S.

**Kheadr, E. E. ; Abd Elrahman, A. M. and El-Nemr, T. M. (2002).** Survivability and antimicrobial capacity of *Bifidobacteria* and yoghurt bacteria during refrigerated storage of yoghurt made from lactose-hydrolysed milk. *Alex. J. Agric. Res.*, 47 (2) : 81-91.

**Kisza, J. ; Zbikowski, Z. and Kolenda, H. (1978).** XX Int. Dairy Congr. Vol. E, 545-546.

**Lourens-Hattingh, A., Viljoen, B.C. (2001).** Yogurt as probiotic carrier food. *International Dairy Journal*, 11, 1-17.

**Mc Farland, L. V. ; Surawicz, C. M. ; Greenberg, R. N. ; Fekerty, R. ; Elmer, G. W. and Moyer, K. A. (1994).** A randomized placebo controlled trial of *Saccharomyces boulardii* combination with standard antibiotics for *Clostridium difficile* disease. *Journal of the American Medical Association*, 271:1913-1918.



- Meghrou, J. ; Euloge, P. ; Junelles, A. M. ; Ballongue, J. and Petittedemange, H. (1990).** Screening of Bifidobacterium strains for bacteriocin production. *Biotechnology Letters*, 12:575-580.
- Nagawa, M. ; Nakabayashi, A. and Fujino, S. (1988).** Perpetration of the bifidus milk powder. *J of Dairy Science*, 71: 1777.
- Nugent, D. J. (1999).** Prevention of diarrhea by the probiotic Lactobacillus GG. *J. of Pediatrics*, 134(1):1-2.
- Ouwehand, A. C. ; Kirjavainen, P.V. ; Shortt, C. and Salminen, S. (1999).** Probiotics: mechanisms and established effect. *Int. Dairy J.*, 9:43-52.
- Parvez, S. Malik, K.A. Ah Kang S. and Kim, H.-Y. (2005).** Probiotics and their fermented food products are beneficial for health. *Journal of Applied Microbiology*, 100: 1171-1185.
- Pereira, D.I.A. and Gibson, G.R. (2002).** Cholesterol assimilation by lactic acid bacteria and Bifidobacteria isolation from the human gut. *Appl. Environ. Microbiology*, 68(9): 4689-4693.
- Prado, F.C. ; Parada, J.L. ; Pandey, A. and Soccol, C.R. (2008).** Trends in non-dairy probiotic beverages. *Food Res Int* 41:111–23.
- Rasic, J. L. and Kurmann, J. A. (1983).** Bifidobacteria and their role. In: Birkhauser Verlag . Basel, Switzerland.
- Saarela, M. ; Mogensen, G. ; Fonden, R. ; Matto, J. and Mattila-Sandholm, T. (2000).** Probiotic bacteria: safety, functional and technological properties. *J Biotechnol* 84:197–215.
- Salminen SJ, Gueimonde M and Isolauri E (2005).** Probiotics that modify disease risk. *J Nutr* 135: 1294–1298.

**Sartor . R.B. (2004).**Therapeutic manipulation of the enteric microflora in inflammatory bowel diseases: Antibiotics, probiotics and prebiotics. Gastroenterology; 126:1620.

**Sharma, s. Nidhi A. and Preeti V. (2012). Probiotics:** The Emissaries of Health from Microbial World. Journal of Applied Pharmaceutical Science 02 (01); 2012: 138-143.

**Savaiano, D.A. ; Adelhak Abou Elanouar, D. A. G. ; Smith, D. E. and Levitt, M. D. (1984).**Lactose malabsorption from yoghurt, pasteurized yoghurt, sweet acidophilus milk and cultured milk in lactase deficient individuals. The American Journal of Clinical Nutrition,40:1219-1223.

**Schaafsma, G. ; Meuling, W. J. A. ; Van Dokkum, W. and Bouley, C. (1998).** Effects of a milk product, fermented by *Lactobacillus acidophilus* and with fructo-oligosaccharides added, on blood lipids in male volunteers, European J. of Clinical Nutrition, 52: 436-440.

**Stanton, C. ; Gardiner, G. ; Meehan, H. ; Collins, K. ; Fitzgerald, G. ; Lynch, P. B. and Ross, R. P. (2001).**Market Potential for Probiotics. The American Journal of Clinical Nutrition, 73(supplement), 476s-483s.

**Tomoda, T. ; Nakano, Y. andkageyama, T. (1983).** Variation of intestinal Candida of patients with leukaemia and the effect of *Lactobacillus* administration. Japanese J. of Medicinal Mycology,24:356-358.

**World Gastroenterology Organization (2008).** Practice guideline of probiotics and prebiotics. © World Gastroenterology Organisation, 2008.