

EXBERRY® Blue, Green, Lavender and Black Natural Colors-US Market

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GROWING COLOURS



WIDER NATURAL COLOR SELECTIONS ARE NOW POSSIBLE

- GNT has offered red, pink, purple, yellow, orange and brown colors for 30+ years under the EXBERRY® brand
- GNT has offered blue and green colors outside of the US for 20+ years
- The FDA granted permission to use **spirulina** in a wide range of applications in 2014, which has expanded the color range offered in the US
- GNT's colors are manufactured with minimal processing and no solvents to ensure a truly natural product



- Made from Spirulina – an edible blue-green algae that occurs naturally in freshwater and marine habitats
- Typical use level: 1-5%
- Recommended language in ingredient line: “**Spirulina extract for color**”
- Regulation: Title 21 CFR, Part 73, Section 73.530 (spirulina)



- Made from spirulina and yellow colors
- Typical use level: 1-5%
- Recommended language in ingredient line: “**Spirulina extract for color**”, “**Fruit juice for color**”, “**Vegetable juice for color**”
- Regulations
 - Title 21 CFR, Part 73, Section 73.530 (spirulina)
 - Title 21 CFR, Part 73, Section 73.250 (fruit juice)
 - Title 21 CFR, Part 73, Section 73.260 (vegetable juice)



- Made from spirulina and red colors
- Typical use level: 1-5%
- Recommended language in ingredient line: **“Spirulina extract for color”**, **“Vegetable juice for color”**
- Regulations
 - Title 21 CFR, Part 73, Section 73.530 (spirulina)
 - Title 21 CFR, Part 73, Section 73.260 (vegetable juice)



- Made from spirulina, yellow color and purple color
- Typical use level: 1-5%
- Recommended language in ingredient line: **“Spirulina extract for color”, “Fruit juice for color”, “Vegetable juice for color”**
- Regulations
 - Title 21 CFR, Part 73, Section 73.530 (spirulina)
 - Title 21 CFR, Part 73, Section 73.250 (fruit juice)
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APPROVED COLOR APPLICATIONS FOR SPIRULINA

- 2013
 - Candy and gum
- 2014
 - Frostings
 - Ice cream and frozen desserts
 - Dessert coatings and toppings
 - Beverage mixers and powders
 - Yogurts
 - Custards and puddings
 - Cottage cheese
 - Gelatin
 - Bread crumbs
 - Ready-to-eat cereals (excluding extruded cereals)



CONSUMER RESEARCH STUDY - FINDINGS

- Consumers want to easily recognize and trust the ingredients they see on a package
- We asked: “What is ‘natural’ to you?”
 - “Left in natural state or form.”
 - “Unprocessed. Not manipulated or modified. Pure.”
 - “Not changed through chemical processes.”



HOW WOULD YOU MAKE A NATURAL COLOR? THE RESPONDENTS' VIEW



Starts with a fresh vegetable or fruit



Ingredients would be boiled



Then cooked
Ingredients mashed



Then pureed...



..strained...



And the finished
result stored!



"You expect it to be the color if you squeezed a fruit... an orange would be the color that the juice comes out...or a blackcurrant would be purple"

Colored Naturally with Fruit, Vegetables and Edible Plants

91% of respondents in the UK, and 85% of respondents in Germany agree that this is the most natural way to color food

FDA'S APPROVAL OF SPIRULINA HAS GREATLY INCREASED THE PRODUCT DEVELOPER'S COLOR CHOICES

- GNT now has natural blue, green, lavender and black colors that are approved for use in the US in a variety of food applications
- GNT has over 20 years of experience with spirulina
- Color from fruits, vegetables and edible plants provide a platform to connect with consumers
- Color from fruits, vegetables and edible plants meet global regulatory demands
- Color from fruits, vegetables and edible plants meet industry and consumer expectations for a clean label
- Not all natural colors are equal – look for a supplier with high quality, consistent supply and stable pricing through vertical integration