

# COWS

# are good citizens!



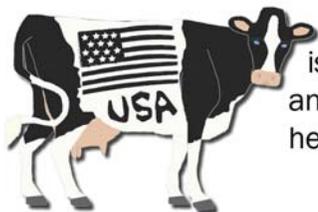
## Cows make good use of resources



There are a lot of places in the world that are too dry or hilly for growing much of anything – except grass. Cows make good use of this land by eating that grass or hay and turning it into nutritious food for people.



Cows also give back to the world. Their manure is used to fertilize fields and to help keep the soil healthy.



## Cows are great at recycling

People eat or use



Cotton for clothes

Cooking oil

Orange juice

Ethanol for fuel

Cookies and candy

Cows get the leftovers



Whole cottonseed

Soybean meal

Citrus pulp

Dried distillers' grains

Bakery and candy waste



## Cows play well with others

Cows can eat things like grass and almond hulls because they're *best friends forever* with bugs. Not insects, but special bacteria that live in the rumen, the first part of a cow's stomach.

These bacteria help the cows digest tough, fibrous feed. The bugs also serve as an excellent source of protein for cows. In turn, the cows provide a great place for the bugs to live.



## Cows like to share with others

Milk . . . cheese . . . ice cream . . . yogurt . . . butter . . . need we say more?!?



# Research

(at the U.S. Dairy Forage Research Center)

## makes cows even better citizens

Making new discoveries about rumen microbes and their unique role in digestion and nutrient utilization.

 Modifying forages to make fiber more digestible and carbohydrates more available.

Breeding new varieties of pasture legumes and grasses for grazing-based dairy operations.



 Developing sound research to answer common questions about pasture management.

Keeping nutrients out of the air and water by developing science-based manure nutrient management.



Reducing the carbon footprint and the environmental impact of dairy farming.

Improving protein utilization of forages through improved silage management, ration formulation and plant modifications.

May copy for educational purposes.

