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WHY USE "OIL SPILL EATER" II
RATHER THAN NON-INDIGENOUS BACTERIA

1. YOU CANNOT DIRECTLY APPLY ANY LIVING ORGANISM (BACTERIA) TO A TOXIC SUBSTANCE WITHOUT KILLING THE ORGANISM.
2. THE ONLY WAY FOR ANY BACTERIA TO UTILIZE THE HYDROCARBON OR CONSTITUENTS AS A FOOD IS TO FIRST REDUCE THE TOXICITY.
3. BACTERIA CAN UTILIZE MOLECULARLY REDUCED HYDROCARBONS AS A FOOD SOURCE, BUT ONLY AFTER THE MOST TOXIC COMPONENTS OF THE HYDROCARBON ARE REDUCED.

WHY?

1. WHEN BACTERIA BECOME PROXIMAL TO A FRESH HYDROCARBON SPILL, THE FIRST THING THAT HAPPENS IS THE BACTERIA PRODUCE BIO-SURFACTANTS TO ALTER THE MOLECULAR STRUCTURE OF THE HYDROCARBON AND REDUCE IT'S TOXICITY. IF THERE IS TOO HIGH A CONCENTRATION OF BTEX, THE BACTERIA DIE.

IF THE CONCENTRATION IS DILUTED ENOUGH AND THERE ARE ENOUGH BACTERIA PRESENT TO PRODUCE ENOUGH BIO-SURFACTANTS TO KEEP FROM BEING OVERWHELMED BY THE HYDROCARBON, THEN THEY HAVE A CHANCE TO SURVIVE. USUALLY, THIS IS ONLY POSSIBLE IN A SITUATION WHERE A LARGE QUANTITY OF WATER IS PRESENT WHERE BACTERIA CAN GET CLOSE ENOUGH TO THE HYDROCARBON TO ATTACK AND YET SWIM AWAY IF NEEDED.

IF THE BACTERIA ARE FORCED TOO CLOSE TO A TOXIC HYDROCARBON, IT DIES. IT TAKES A LONG PERIOD OF TIME FOR BACTERIA TO ACCLAMATE THEMSELVES TO A SPILL AND THEN ATTACK IT.

2. YOU CLEAN UP TOXIC SPILLS (HYDROCARBONS) BECAUSE THESE SPILLS CAN PREVENT LIVING ORGANISMS FROM LIVING. THEREFORE, SPILLS ARE CLEANED UP TO REDUCE OR ELIMINATE THE TOXICITY TO OUR ENVIRONMENT.

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PAGE TWO

NON-INDIGENOUS BACTERIA LIMITATIONS:

1. DIRECTLY APPLIED TO A TOXIC SPILL THEY DIE.
2. IN THE ENVIRONMENT, INDIGENOUS BACTERIA GENERALLY TAKE OVER NON-INDIGENOUS BACTERIA.
3. NON-INDIGENOUS BACTERIA HAVE A HARD TIME ACCLAMATING TO A NEW ENVIRONMENT.
4. IF YOU HAVE 10°F OR MORE TEMPERATURE VARIATION, THE NON-INDIGENOUS BACTERIA GO INTO SHOCK AND THEN HAVE TO RE-ACCLAMATE THEMSELVES.
5. IF THERE IS A LIMITED AMOUNT OF NUTRIENTS IN THE SOIL, NON-INDIGENOUS BACTERIA WILL BE UNABLE TO SUSTAIN LIFE LONG ENOUGH TO ATTACK A SPILL.
6. YOU DO NOT KNOW YOUR COST! BACTERIA HAS TO CONTINUALLY BE ADDED UNTIL SOMETHING HAPPENS.



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