

- (046.) Unless 除非，除非在.....情况下 they succeed, the *yield* 产量；产出 *gains* 产量增益,产量的增加量 of the Green Revolution 绿色革命 will be largely 主要地；在很大程度上 lost (v.) /even if 主 *the genes* 基因 in legumes 豆科植物 that equip (v.)使具备；使有能力 those plants **to enter into** a symbiosis 共生（关系） with *nitrogen* 氮 *fixers* (固氮生物)固氮菌 谓 *are identified* 识别；确认 *and isolated* 分离；提取, and even if 主 *the transfer* 转移；传递(基因转移) of those gene complexes 复合物, once they are found, 谓 *becomes possible*.

Example 1. 案例

- (046.) Unless they succeed, the yield gains of the Green Revolution will be largely lost even if the genes in legumes that equip those plants to enter into a symbiosis with nitrogen fixers are identified and isolated, and even if the transfer of those gene complexes, once they are found, becomes possible.

除非他们（指基因生物学家）成功，否则/即使（使得“豆科植物”与“固氮菌”形成共生关系的）基因，能够被找到和分离出来，而且即使基因综合体在被发现之后的“转基因”成为可能，/绿色革命所带来的产量上的获得，将很大程度上被丧失掉。

Unless they succeed, the yield gains of the Green Revolution will be largely lost even if the genes in legumes that equip those plants to enter into a symbiosis with nitrogen fixers are identified and isolated, and even if the transfer of those gene complexes, once they are found, becomes possible.

这句话强调：即使技术上能识别、分离、转移这些基因，如果最终应用不成功（如基因表达问题、植物适应性等），整个绿色革命的成果，仍可能丧失。

Unless they succeed, the *yield gains* of the Green Revolution will be largely lost.

*yield gains*指“产量的增加量”或“产量增益”。

yield gains = 通过技术进步、品种改良, 或管理优化等方式，使农作物“单位面积产量”（*yield*）相比之前或基线水平所获得的，有提升。

even if the transfer of those *gene complexes*, once they are found, becomes possible.

关于“gene complexes”的理解：这里用复数 *complexes*而非单数，可能暗示“固氮相关基因”不是单个基因，而是多个基因组成的复合功能单元（基因簇或操纵子），这符合生物学实际——“固氮”通常涉及多个基因协同作用。