What is claimed is:

1. A method of selecting seeds in a population having a desired trait, the method comprising:

(a) applying a coating to at least a portion of a seed in a population of seeds;

(b) removing, in a non-destructive manner, a seed chip comprising at least a portion of seed coat from the coated seed;

(c) separating the seed coat from the seed chip;

(d) analyzing the coat-free seed chip for the presence or absence of at least one trait of interest; and

(e) selecting seeds based on the presence or absence of at least one trait of interest.

2. The method of Claim 1, wherein removing, in a non-destructive manner, a seed chip comprising at least a portion of seed coat from an individual seed does not affect germination viability.

3. The method of Claim 1, wherein the seed is a soybean or maize seed.

4. The method of Claim 1, wherein the coating is responsive to magnetic forces.

5. The method of Claim 1, wherein the coating is a magnetic paint.

6. The method of Claim 1, wherein separating the seed coat from the seed chip comprises using an attractant that binds to the coating.

7. The method of Claim 1, wherein analyzing the coat-free seed chip comprises extracting DNA from said coat-free seed chip.

8. The method of Claim 7, wherein extracting DNA from said coat-free seed chip produces DNA that has substantially less maternal DNA than does the seed chip.

9. The method of Claim 1, wherein separating the seed coat from the seed chip comprises positioning a number of seed chips within a testing apparatus and separating seed coats from a multitude of seed chips simultaneously.

10. The method of Claim 1 comprising loosening the seed coat from the seed prior to removing the seed chip.

11. The method of Claim 1 comprising loosening the seed coat from the seed chip prior to separating the seed coat.

12. The method of Claim 11, wherein loosening the seed coat comprises sonicating the seed chip.

13. The method of Claim 12, further comprising applying heat at levels that do not substantially alter the trait being tested.

14. The method of Claim 1 further comprising cultivating plants from the selected seeds and optionally comprising harvesting seed from the cultivated plants.

15. A method for separating a seed contaminate tissue from at least a portion of seed tissue comprising: (a) applying a coating to at least a portion of a seed; (b) loosening seed contaminate tissue from at least the portion of the seed tissue; (c) separating the coated seed contaminate tissue from at least a portion of said seed tissue; and, (d) retaining for further use the remainder of the seed after removing the coated seed contaminate tissue.

16. The method of Claim 15, wherein loosening said comprises a step of seed contaminate and seed tissue immersion in a liquid.

17. The method of Claim 16, wherein removing the coated seed contaminate tissue comprises using an attractant.

18. The method of Claim 18, wherein the attractant is a magnet.

19. The method of Claim 15, wherein loosening the seed contaminate tissue from the seed tissue employs at least one step of: sonification, high temperature exposure, alcohol contact, nitrogen contact or shaking.

20. A method of analyzing seed material for a genotype or phenotype characteristic detached from its seed coat, the method comprising: (a) coating seed, (b) loosening, in a non-destructive manner, at least a portion of coated seed coat from seed material, (b) separating, by use of attractant force, the coated seed coat or portion thereof from the seed material; (c) analyzing the coat-free seed material for the presence or absence of at least one genotype or phenotype characteristic.

What is claimed is:

1. A method of selecting seeds in a population having a desired trait, the method comprising:

(a) applying a coating to at least a portion of a seed in a population of seeds;

(b) removing, in a non-destructive manner, a seed chip comprising at least a portion of seed coat from the coated seed;

(c) separating the seed coat from the seed chip;

(d) analyzing the coat-free seed chip for the presence or absence of at least one trait of interest; and

(e) selecting seeds based on the presence or absence of at least one trait of interest.

2. The method of Claim 1, wherein removing, in a non-destructive manner, a seed chip comprising at least a portion of seed coat from an individual seed does not affect germination viability.

3. The method of Claim 1, wherein the seed is a soybean or maize seed.

4. The method of Claim 1, wherein the coating is responsive to magnetic forces.

5. The method of Claim 1, wherein the coating is a magnetic paint.

6. The method of Claim 1, wherein separating the seed coat from the seed chip comprises using an attractant that binds to the coating.

7. The method of Claim 1, wherein analyzing the coat-free seed chip comprises extracting DNA from said coat-free seed chip.

8. The method of Claim 7, wherein extracting DNA from said coat-free seed chip produces DNA that has substantially less maternal DNA than does the seed chip.

9. The method of Claim 1, wherein separating the seed coat from the seed chip comprises positioning a number of seed chips within a testing apparatus and separating seed coats from a multitude of seed chips simultaneously.

10. The method of Claim 1 comprising loosening the seed coat from the seed prior to removing the seed chip.

11. The method of Claim 1 comprising loosening the seed coat from the seed chip prior to separating the seed coat.

12. The method of Claim 11, wherein loosening the seed coat comprises sonicating the seed chip.

13. The method of Claim 12, further comprising applying heat at levels that do not substantially alter the trait being tested.

14. The method of Claim 1 further comprising cultivating plants from the selected seeds and optionally comprising harvesting seed from the cultivated plants.

15. A method for separating a seed contaminate tissue from at least a portion of seed tissue, wherein said seed tissue is a seed chip, comprising: (a) applying a coating to at least a portion of a seed; (b) loosening seed contaminate tissue from at least the portion of the seed tissue; (c) separating the coated seed contaminate tissue from at least a portion of said seed tissue; and, (d) retaining for further use the remainder of the seed after removing the coated seed contaminate tissue.

16. The method of Claim 15, wherein loosening said comprises a step of seed contaminate and seed tissue immersion in a liquid.

17. The method of Claim 16, wherein removing the coated seed contaminate tissue comprises using an attractant.

18. The method of Claim 17, wherein the attractant is a magnet.

19. The method of Claim 15, wherein loosening the seed contaminate tissue from the seed tissue employs at least one step of: sonification, high temperature exposure, alcohol contact, nitrogen contact or shaking.

20. A method of analyzing seed material for a genotype or phenotype characteristic detached from its seed coat, the method comprising: (a) coating seed, (b) loosening, in a non-destructive manner, at least a portion of coated seed coat from seed material, (b) separating, by use of attractant force, the coated seed coat or portion thereof from the seed material; (c) analyzing the coat-free seed material for the presence or absence of at least one genotype or phenotype characteristic.